

# Competition Assignment

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Landscape-Urban Competition

“Revitalization of the Mill Race in Košice”

## Content

<b>Introduction</b>	<b>3</b>
History and importance of the Mill Race	3
The need for water in the city	3
Public interest in the Mill Race revitalization	3
<b>Definition of the area to be solved</b>	<b>4</b>
Wider relations	4
Area to be solved	5
<b>Initial state of the Mill Race revitalization and reasons for competition announcement</b>	<b>7</b>
<b>Present state</b>	<b>8</b>
Water	8
Watercourse operation	8
Urbanism and architecture	9
Traffic	9
Public space	9
<b>Objectives</b>	<b>10</b>
Main Objective	10
Water	10

Biology	10
Urbanism and Public Space	11
Traffic	13
Architecture	13
Landscaping	14
Functions	14
Operation	15

## I. Introduction

### 1. History and importance of the Mill Race

The Mill Race is a natural branch of the River Hornád, through which a substantial part of the water used to flow in the past. In the 19th and 20th centuries, three mills were in operation on this watercourse in Košice, one of which was rebuilt into a hydroelectric power plant. The surroundings of the Mill Race were a popular recreation place for Košice residents, as evidenced by period photographs and postcards.

Detailed information on this topic can be found in the document ***History of the Mill Race.***

### 2. The need for water in the city

Yearly, Košice experiences a significant shortage of water in its natural form, which results in further negative phenomena on the environment and the daily life of Košice residents.

All the more urgent is the need to bring living water into the urban environment also in the context of its drastic decline over the past centuries.

Information on the decrease of surface flows during the last centuries can be found in the document ***Depletion of Surface Watercourses in the City of Košice.***

### 3. Public interest in the Mill Race revitalization

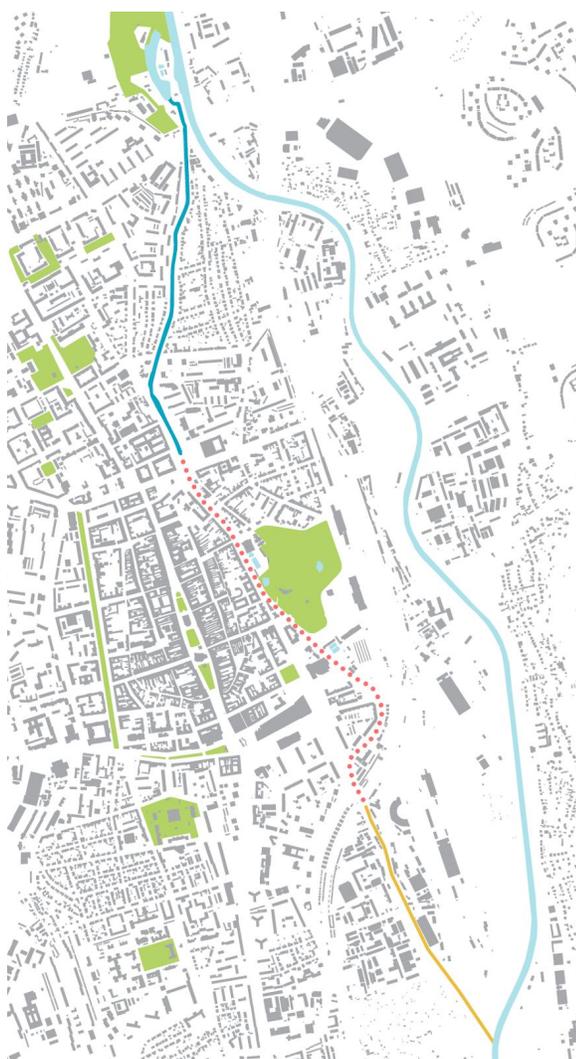
The civic association organized several meetings with the public at which the history of the Mill Race, current technical problems, complexity of the task of revitalization, successful implementations from other places and other related topics were presented.

The public unequivocally declared its interest in the restoration of the watercourse and the increase of its immediate and wider surroundings not only at meetings, but also in a survey carried out by the civic association Mlynský náhon at the beginning of 2019.

The results can be found on: [https://mlynskynahon.sk/vysledky-2020\\_02/](https://mlynskynahon.sk/vysledky-2020_02/).

## II. Definition of the area to be solved

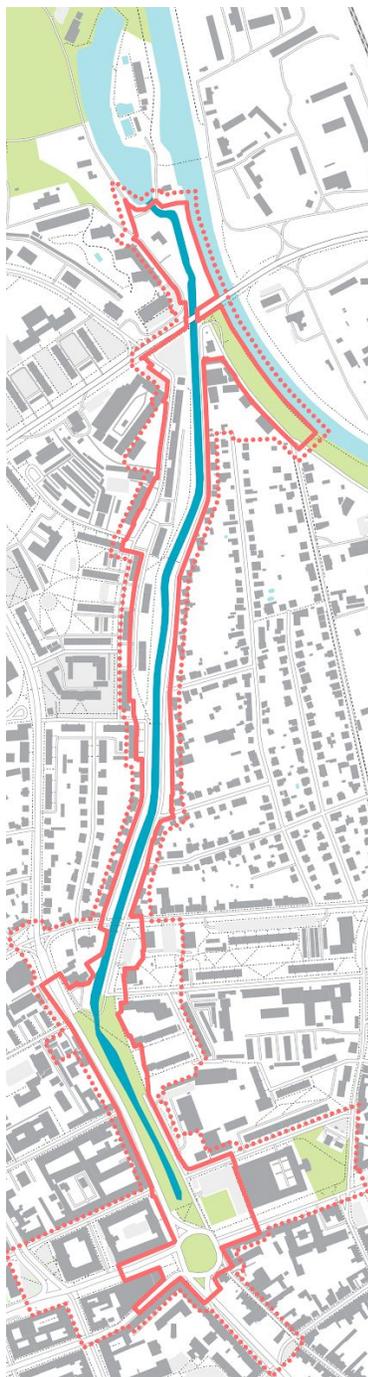
### 1. Wider relations



The original bed of Mill Race is located between the historical centre of Košice and the city park. It can be divided into three sections:

- The Northern section with a width of approximately 12 meters connecting Anička Recreational Area with the wider city centre which is called **the Mill Race**.  
**The section is marked in turquoise.**
- The Middle section is piped. The pipeline is located mainly under a four-lane road that leads through the city centre along Štefánikova Street and Krivá Street.  
**The section is marked with red dots.**
- The Southern section is formed by the original riverbed with a discharge into the River Hornád, it is neglected and passes through an industrial - brownfield area. This section is called **the Mill Creek**.  
**The section is marked in yellow.**

## 2. Area to be solved



The area to be solved consists of the upper, northern part of the original riverbed of the Mill Race and its immediate surroundings.

The border of the area to be solved in the north is Ryba Anička reservoir and the Small Hydroelectric Power Plant, behind which the Mill Race inlet facility is located.

This is followed by the area between the River Hornád, residential complex "Park Anička" and a panel housing on Študentská Street.

At this point, the Mill Race is crossed by a four-lane road on Hlinkova Street with a bridge, which is part of the inner ring road and a supporting road for public transport.

Along the right bank of the River Hornád, the construction of the Eurovelo 11 cycle path is planned.

The area to be solved continues with detached houses on the east side (Ťahanovské riadky Street) and blocks of flats (Študentská and Odborárska Streets) and further in the direction of flow along family houses (Alešovo Embankment) on the west side.

In its next section, the Mill Race is crossed by a bridge on Slovenskej jednoty Street.

Another section is characterized by panel blocks of flats, multifunctional houses and a distinctive building of the Hotel Yasmin on the Mill Race left bank.

On the right bank of this section there is the Church Choir of the Brotherhood of Baptist Unity, a private garden, Rokoko Hotel and after it, the right bank is lined with a heavy traffic four-lane road on Gorkého Street.

Behind the Rokoko Hotel, the Mill Race riverbed is dammed with an inverted siphon in which a heatline and other engineering networks are located.

The area to be solved in the south ends with the Mill Race discharge object, the area in front of the Jumbo Center building and the roundabout, forming the intersection of Gorkého, Hviezdoslavova, Továrenská, Štefánikova, Jesenského and Masarykova Streets. The roundabout links the city center via Hviezdoslavova and Továrenská Streets, to the City Park via Jesenského Street and to the former Mill Race riverbed on Štefánikova Street.

### III. Initial state of the Mill Race revitalization and reasons for competition announcement

At present, a project for a building permit entitled "Revitalization of the Mill Race 2017" has been prepared for the area to be solved, the author of which is Ing. Jozef Schlosser, and has a valid zoning decision and building permit.

However, the assignment of the project did not request solution of broader urban relations, creation of public spaces with appropriate functions, creation of conditions for biodiversity development and other tasks required by the public and current need to adapt to climate change.

The inviting party does not agree with the project and therefore decided to announce a new competition, preceded by a wide discussion with the public and experts in which the missing requirements are specified.

The desired result to be provided by the winner to the inviting party can be summarized in the following points:

- 1. A validation study taking into account wider relationships and public spaces**
- 2. A detailed manual of public space and landscape study with the solution of selected elements of small architecture.** With regard to the valid zoning decision and building permit for the project "Revitalization of the Mill race 2017", it is an elaboration of a landscape study, project documentation of building changes before completion (S001 Elements of Green Infrastructure) and implementation of project documentation of small architecture selected elements without engineering activities as these will be provided by the city of Košice.
- 3. License** for part of the design in the study dealing with modifications to water structures, transport structures and network relocations.
- 4. Author's supervision** for the part of the proposal dealing with modifications of water structures, transport structures and relocations of networks

## IV. Present state

The Mill Race is undoubtedly a valuable urban element with great potential. However, due to incorrect decisions in the past and only the sporadic and purposeful interest of various groups without a vision, it is today in a deplorable state and sometimes even bothering the inhabitants of the surrounding area.

Despite the mentioned shortcomings, this water element is actually the only significant water phenomenon in the city center, which is of great value even in the state it is now, being a significant benefit for the environment in the city. However, its potential is reprehensibly untapped.

### 1. Water

At present, the Mill Race is fed from the River Hornád through an inlet object, by means of which the amount of incoming water can be regulated and water supply closed, if necessary. Water from the River Hornád is of adequate quality, but is regularly turbid for several days after summer months' storms. Its current water flow is about 300 liters per second, in winter the flow is reduced. The flow is limited by an unsatisfactory inverted siphon and also by a pipe draining water into the River Hornád. This pipe was designed for a flow rate of 500 liters per second.

Potential sources of water are the Čermel' Creek and water from the Bankov Mine.

Detailed information on water can be found in the document ***Water Management Parameters of the Mill Race.***

### 2. Watercourse operation

Low water levels, low water flow, unsatisfactory and dangerous banks and neglected surroundings are the reason why the Mill Race was often more of a nuisance than a joy for the inhabitants and visitors of this area. In the past, the Mill Race was discharged several times during the growing season due to the mowing of sloping banks, which had a liquidating impact on the habitat of the watercourse and banks.

### 3. Urbanism and architecture

In its present state, the water flow acts as a barrier that separates family and apartment houses on one side from urban development on the other one. The reason is its untapped potential, inaccessible water level and lack of quality public space in the area. Dividing character of the Mill Race is also strengthened by the wide, heavy traffic road on Gorkého Street and the road on Ťahanovské Riadky. Barrier-free pedestrian bridges are also missing in the area. The constructions of bridges and railings are neglected and in poor technical condition.

### 4. Traffic

The area to be solved has several traffic problems to deal with and, in addition to the lack of natural longitudinal and transverse connection for pedestrians and cyclists, among the most serious are:

1. Pedestrian and bicycle connection in the area of the bridge over Hlinkova Street
2. Parking in the area of Študentská and Hlinkova Streets
3. Pedestrian and bicycle connection in the area of the bridge on Slovenskej jednoty Street
4. Traffic solution in the area of the inverted siphon near Rokoko Hotel
5. Heavy traffic road on Gorkého Street
6. Roundabout on Masarykova Street

### 5. Public space

The concept of public spaces is missing around the Mill Race. There is almost none at present. Residents have no opportunities created to spend their free time and take advantage of the opportunities such a phenomenon might offer. There are no sidewalks, but also basic elements are missing such as benches, waste bins and public lighting. Existing public spaces at buildings of higher importance, such as the Jumbo Center, or at Yasmin Hotel and Rokoko Restaurant, are used for parking. The spaces near the blocks of flats, in turn, create the impression of backyards with garages and parking lots.

## V. Objectives

### 1. Main Objective

The main objective is to transform the "canal" into **a living river** bringing the benefits of nature to the city environment. It is necessary to find suitable activities along the river, taking into account different needs of the inhabitants of individual neighborhoods, use the linear character for the needs of mobility and recreation of adjacent urban areas and to connect recreational sites and green infrastructure within the city. Create an ecologically and biologically stable watercourse that mitigates the impact of climate change within the city.

### 2. Water

Utilization of potential water sources and ensuring a stable flow of 500 to 1000 liters per second, also by removing the damming at the Rokoko Restaurant. Improving water quality by oxygenating and overlaying water through weirs, reducing the amount of soluble nutrients, the degree of turbidity by the root cleaner and sedimentation sections.

It is also necessary to design a reduced level regime for winter operation, which would allow the use of water area for skating while maintaining suitable conditions for overwintering of aquatic animals.

### 3. Biology

Water level flexibility throughout the year is an important factor supporting the development of suitable flora and fauna. Support of valuable processes is based on creating conditions for the existence of aquatic and marsh plants. Shallow zones populated by hydro-macrophytes must perform several important parallel functions.

In the proposal, it is important to think about the promotion of biodiversity (fauna and flora), places for safe starting of wild birds and places for safe access to water for local animals.

The Mill Race will always be occupied by birds, whether for nesting or for rest and mainly as a water source. It is necessary to create such conditions for rest so that the birds are not

stressed by scaring and can rest on floating islands. These floating areas would allow the bird safe access to water.

All solutions must also take into account the need to maintain the migration of organisms, especially between the surrounding water features and the area itself.

The proposal needs to create opportunities and preconditions for solutions enabling local retention and infiltration of rainfall. Collection of rainwater in seepage lagoons, preparation for the expected discharge of rainwater from surrounding buildings and paved areas into these lagoons and subsequent discharge of excess unused major precipitation directly into the watercourse.

Detailed information on biology can be found in ***Biology of the Mill Race.***

#### 4. Urbanism and Public Space

Due to the fact that the project is located on a wider platform, broader relations need to be taken into account and the concept of solution of the entire area around the original bed of the Mill Race needs to be presented.

Involvement of the Mill Race into the concept of urban green infrastructure. It is important to solve connections to the interblock greenery, City Park, Comenius Park, Anička Park and others.

The proposal must be preceded by a thorough analysis of the broader relations and the area itself. Analysis of the importance of the Mill Race on a city scale, analysis of wider relations within adjacent city districts, analysis of the importance of the Mill Race in relation to planned construction in its vicinity and in the development zone between Slovenská Street and the River Hornád.

The area should be transformed into an important urban and recreational element, built on the basis of natural environment revitalization, with addition of spaces for development and support of community life. Furthermore, it is necessary to create a concept of pedestrian connections along and across the watercourse. It is necessary to process the analysis and

modification of current connections, or to propose other options with an emphasis on accessibility. Use the Mill Race corridor for a collision-free pedestrian and bicycle connection between Ťahanovce Housing Estate and Dargovských Hrdinov Housing Estate with the city center. At the same time, provide the inhabitants of the Old Town and the North districts with convenient access to greenery and a safe connection to Anička recreational zone.

In the vicinity of the Mill Race, a concept of public spaces with various functions must be created in front of the Jumbo Centrum, Yasmin Hotel, Tabačka, apartment buildings on Tyršovo nábrežie Street, Alešovo nábrežie Street, Odborárská Street, Rokoko Hotel and Restaurant and on Ťahanovské riadky Street in the vicinity of family houses. Part of the solution should also be creation of a concept for parking space revitalization in Hlinkova Street with a proposal for a new function. At present, the car park is marked as public greenery in the Spatial Plan of the Košice economic and residential agglomeration, being the only car park in the area with a capacity of around 50 places.

When designing, one should not forget about critically narrowed places with insufficient space for the development of all activities accompanying the entire flow of the Mill Race. The narrowest places along the watercourse are delimited by a shoreline and the nearest construction and will require an imaginative approach and probably a different form of space design. This means the layout of pedestrian, bicycle path, service roads and the solution of longitudinal parking in a critically narrowed profile.

It is necessary to create a concept of placing a suitably selected furniture either by direct design of the furniture of your own design or by selecting a suitable type solution. It is also necessary to define the material solutions of sidewalks, squares, promenades and other elements.

Documents from companies and institutions operating in the vicinity of the Mill Race are in the document ***Information from Involved Parties.***

Technical documents from operators are in the document ***Technical Documents.***

## 5. Traffic

Within the design, it is necessary to look for a concept of traffic calming in the city center. The main interest is a solution of walking and cycling routes, then public transport and finally individual car transport with regard to newly emerging residential complexes and taking into account the requirement to maintain quiet zones in close proximity to houses estate.

As part of the proposal, it would be appropriate to consider creation of a concept of connecting Tyršovo embankment with the old town via Gorkého and Hviezdoslavova Streets and modifying the roundabout on Masarykova street into an urban space with an emphasis on pedestrians and cyclists.

The transport solution also includes solution of static transport in adjacent public spaces, the creation of a parking concept in the area and the minimization of paved parking areas with designation of areas suitable for building parking houses, ideally in combination with commercial use and public green areas on roofs.

## 6. Architecture

When designing public spaces around the Mill Race, the possibility of creating small architecture is offered. Small architecture can be piers, dikes, footbridges, shelters, or a reasonably located smaller pavilion. As part of the concept, it is also appropriate to think about places with drinking water, places for washing hands or public toilets.

An important part of the architectural solution is also the revitalization, or reconstruction, or completion of pedestrian bridges and old weirs at Slovenskej jednoty Street, Tomášikova Street and the weir at Čárskeho Street.

The material processing of public spaces and small architecture should be carefully considered. The ideal solution is, if possible, materials with a natural character from local sources with easy maintenance.

Elements of small architecture, exterior equipment and technical accessories of public space must be designed in terms of specific solutions: functionality, aesthetics, material choice of

individual elements (bins, benches, retaining walls, orientation, information, educational boards, game elements, sports equipment, railings, lighting). The layout in the space must respect basic requirements for trouble-free operation and accessibility in terms of rational maintenance, for example, when periodically removing waste, handling any mobile equipment, servicing luminaires and the like.

## 7. Landscaping

At present, the Mill Race is an area in the Territorial System of Ecological Stability and is defined as an urban biocorridor of regional importance while the objective of revitalization is to harmonize the declared situation with reality.

The concept should reflect the effort to combine the character of the natural river with the urban environment. We recommend creating access to the water level and working with the water surface - water ripple, calm water, mirroring ... It is also possible to work with creation of islands for nesting waterbirds and equally deeper zones for swimming or boating. Functions of this kind are important to carefully assess and determine their appropriate location throughout the flow.

The banks of the Mill Race should be mostly of natural character with possible local reinforcement when connected with public spaces that require it from operational and practical point of view.

## 8. Functions

Within the functional content, it is important to solve its winter and summer regime. Verify the suitability, possible location and scope of functions such as boating, fishing, swimming, water playground, skating and others.

Social and leisure activities must respect natural character of the living river and should not disrupt its biological processes. Proposed functions need to be incorporated so that the standard of living in adjacent residential areas is not reduced.

In the southern part, in connection with the city center and cultural institutions, the implementation of a cultural function can be considered on the water surface and banks in terms of the above-mentioned conditions, or an amphitheater, a pier as a small stage and the like.

## 9. Operation

To the greatest extent possible, create a rational, reliable and simple operation of greenery, public space equipment and technical facilities. Landscaping, solution of paved areas, lawns and the system of planting trees and permanent vegetation must take into account aesthetic demands and at the same time the requirement to minimize the demands on manual work.

Respect for safety requirements for humans, domestic animals and wildlife is a necessary condition for the renewal of the Mill Race. All technical modifications in the riverbed, on the banks and in the watercourse vicinity must, in addition to supporting biodiversity, comply with safe operation with regard to the general prevention of the risk of accidents, protection of children, handicapped people and animals.