PLANTS
IN URBAN AREAS AND LANDSCAPE

STRATEGIES FOR TOURISM ENHANCEMENT IN DANUBE TOWNS – GREEN INFRASTRUCTURE APPROACHE

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DANUrB, the Interreg Danube Transnational Programme project, aims to explore the unused and hidden cultural and natural heritage resources to enhance sustainable tourism in the settlements along the Danube. Within the framework of this project we have examined the green infrastructure of the selected pilot city Štúrovo and its potential to contribute to the offer of thematic tourist routes and to the creation of the common tourism destination brand of the Danube settlements that can increase the number of visitors and can prolong their stay in the region. We have developed a set of criteria for the evaluation of green spaces for their selection and inclusion into the thematic location-based audio tours offered by a mobile application. Sites for local interventions as pilot actions or for further planning activities have been selected and landscape design proposals for these sites have been conducted by students. The research points out the prominence of green infrastructure in the development of strategies for tourism enhancement.

Keywords: cultural heritage, green infrastructure, natural heritage, sustainable tourism

1 Introduction

Successful sustainable tourism strategies and planning initiatives require the ability to predict new key emerging developments and shifts (Moutinho, Ballantyne and Rate, 2011). As Moutinho et al. (2011) point out, the world`s economic and social climate is generally predicted to produce a strong increase in tourism. New markets will emerge due to changing economic conditions, modified consumer behaviour and new technologies. For example, there will be increasing proportion of senior citizens, greater emphasis on individual and self-determined holidays and on educational and active recreational pursuits. Increasing environmental awareness will affect planning policies and tourist demand. Cultural and natural heritage are two main resources of tourism and as noted by Moutinho et al. (2011), nature, they will become more scarce and fragile.

Several authors mention that green spaces can play an important role in attracting tourists to urban areas by enhancing the attractiveness of a city and as a complement to other urban attractions (Majumdar, Deng, Zhang and Pierskalla, 2011). Aesthetic, historical and recreational values of urban parks increase the attractiveness of a city and are used to promote it as a tourist destination thus generating employment and revenues (Chiesura, 2004). Especially high profile parks like Central Park in New York City are major tourist attractions in their own right (Konijnendijk, Annerstedt, Busse Nielsen, Maruthaveeran, 2013). Greenways of high recreational, visual and historical value also tend to attract tourists (Fábos, 1995). Some green spaces are integral with the tourist visit points, for example linked with cultural heritage, while others are more or less incidental to the overall tourism experience. As noted by Kádár (2013) the spatial patterns of tourist space usage in cities depend mostly on their urban morphologies.

The survey by Terkenli, Bell, Živojinović, Tomićević-Dubljević, Panagopoulos, Straupe, Toskovic, Kristianova, Straigyte and O'Brien (2017) tested tourists' uses and intentions to use urban green infrastructure in their plans to visit a specific city. The results of the survey show that tourists understand the term green infrastructure mainly as parks and perceive urban green infrastructure in a city to be visited as important – more than two-thirds of the respondents considering it somewhat important, and 7% very important. Parks are the main type of green infrastructure tourists intend to visit and the most usual activities of use are walking, photographing, picknicking.

Within the framework of the Interreg Danube Transnational Programme project DANUrB, which aims to explore the strategies for tourism enhancement in Danube towns, we have examined the potential of

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green infrastructure in the selected pilot city Štúrovo to contribute to the offer of thematic tourist routes and tourism enhancement.

2 Material and Methods

DANUrB, the Interreg Danube Transnational Programme project, aims to explore the unused and hidden cultural and natural heritage resources to enhance sustainable tourism in the settlements along the Danube and to create a common tourism destination brand of the Danube settlements that can increase the number of visitors and can prolong their stay in the region.

We have examined the green infrastructure of the selected pilot city Štúrovo and evaluated its green spaces according to a set of criteria for the selection and inclusion into the thematic location-based audio tours offered by the mobile application.

The green spaces for inclusion to the tour have to meet at least one out of five selection criteria – 1 green infrastructure of outstanding natural heritage value, 2 green infrastructure of outstanding cultural heritage value, 3 green infrastructure linked with built cultural heritage, 4 green infrastructure linked with intangible cultural heritage, 5 green spaces with outstanding relaxation and sport functions.

For identification of green spaces and their categorization we have used current and historical map sources, historical literary and visual sources, current urban planning documents – strategic development plans and master plans and we have conducted on-site field surveys.

We have implemented the approach of "education by research" – we have combined the research activities with the educational aims of an urban design studio at the Faculty of Architecture, Slovak University of Technology (Kristiánová and Joklová, 2017). The "research by design" method was applied in the last step, to test different design solutions based on interpretation and evaluation of research outcomes. Erasmus+ programme students at the Faculty of Architecture, Slovak University of Technology in Bratislava have elaborated landscape design proposals for the selected sites – sites for local interventions as pilot actions and for further planning activities. As noted by Bašová (2016), impulses of cultural, urban and social character expressed in city-forming, architectural and design elements are necessary for the current transformations of public spaces, for satisfaction, vitality and opportunities for joyful activities and meetings in squares, parks and river promenades.

3 Results and Discussion

3.1 Green infrastructure of Štúrovo

The city of Štúrovo is situated in the south-eastern tip of the left bank of the Danubian lowland, on the boundary breaks of the Ipeľ and Hron loess tables. The area belongs to the warmest part of Slovakia, where the rivers Danube, Hron, Ipeľ and Burda – Kováčovské hills with their Mediterranean flora together with the open plains constitute its unique natural, economic and tourism character. In the summer months, the city is visited by tourists seeking relaxation, entertainment and water sports, as it has natural resources of thermal water, which is used for recreational purposes in the thermal spa Vadaš.

Green infrastructure of the settlement is represented by green natural areas in the inundation territory of Danube, recreational green spaces and recreational areas – for example recreation site of the thermal spa Vadaš, with an area of 36 hectares, the areas of sport and relax on the banks of the Danube and public green spaces – parks and green spaces of housing estates. Important components of green infrastructure are also cemeteries, allotment gardens and gardens of individual family housing.

The extra-urban landscape around the city of Štúrovo can be characterized as a territory with an extensive representation of agricultural area and with a minimal representation of forest areas. The most important area in the green infrastructure system appears to be the complex line of riparian forests along the rivers Danube and Hron. The importance of these green spaces lays primarily in their spatial and ecosystem services functions. Along the field roads and field boundaries there are strips of linear greenery. In addition to their spatial and aesthetic functions, they fulfil the function of wind-break and prevent wind erosion. In the territory there are many allotment and cottage gardens.

In intra-urban landscape of the settlement the most important components of green infrastructure are public green spaces, generally freely accessible. These are the areas of parks, smaller designed green spaces, tree alleys along streets and public green areas in housing estates. As noted by Tóth, Štěpánková and Feriancová (2016), parks in rural settlements and small town centers represent the local landscape character. In Štúrovo to this type of parks and smaller park areas belong: the park at the Freedom Square, the green space on the Main Street, the park green area at the Square of St. Imre and the park area in front of the policlinic and Smurfit Kappa Štúrovo. Tree alleys

and line greenery are located on Jesenského Street, at the bay promenade and on the Road to God Hill, Sobieskeho Street, Bocskaiho Street, on the Main Street and Komenského street. The green spaces of socialist housing estates represent a quality of original urban concepts (Kristianova, 2016; Vitkova and Gorner, 2016), but they also are subject of degradation and urban densification (Vitkova, 2014).

Green infrastructure is also represented by semi-public green areas of school and health facilities, cultural and administrative facilities, and retail facilities, in particular small family shops. The important proportion of greenery in Štúrovo represent private gardens of individual family housing with ornamental plants in front gardens.

As noted by Halajova, Halaj, Feriancova and Supuka (2013), greenery of cemeteries often creates a substantial part of public greenery in Slovak towns. Green cemeteries are special elements of urban landscapes, with a strong cultural heritage importance. In Štúrovo, there are three sites where it is possible to identify greenery typical for these pious places. The Old Civil Cemetery with developed high trees is located on the corner of the Near Cemetery Street and St. Stephen's Street. In its vicinity there are two smaller cemeteries – the Jewish Cemetery and the Military Cemetery – the graveyard of fallen members of the Red Army in the Second World War, which is registered in the Central List of Cultural Monuments. The new cemetery is at Novocintorínska Street.

The Military cemetery, the Old Civil Cemetery, the Jewish Cemetery, the Memorial Park with a monument on the Freedom Square, the Park of Piece near policlinic, and protected trees – horse chestnut trees on Predmostie Street, plane trees on the Main Street and the yew tree in the courtyard of Komenského Street are listed in the List of Local Heritage Sights.

3.2 Evaluation of green infrastructure for inclusion to the tourist tours

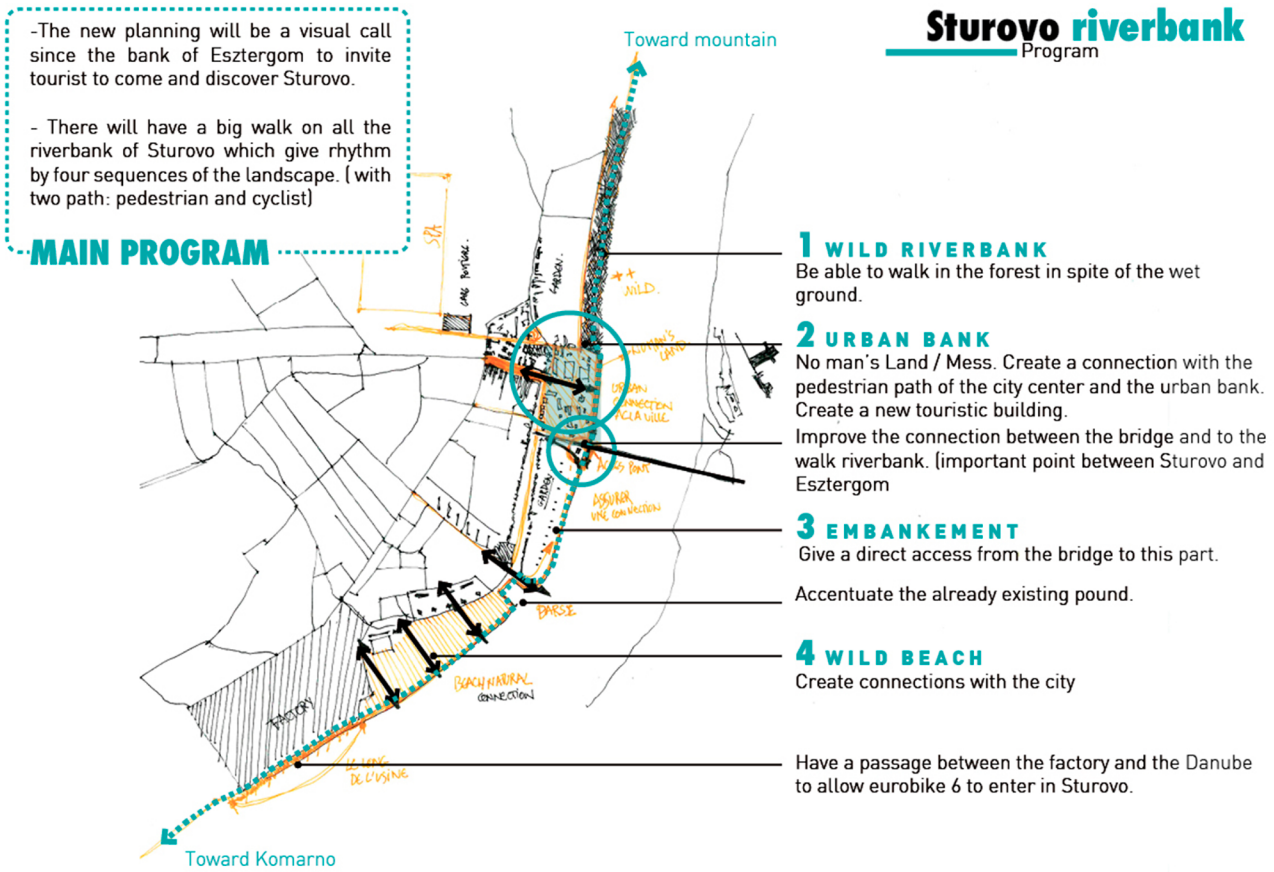
The green spaces identified in Štúrovo have been evaluated against the selection criteria for inclusion to the tourist tours. Only those green spaces have been proposed for inclusion to the thematic location-based audio tours offered by the mobile application which met at least one out of the five selection criteria – 1 green infrastructure of outstanding natural heritage value, 2 green infrastructure of outstanding cultural heritage value, 3 green infrastructure linked with built cultural heritage, 4 green infrastructure linked with intangible cultural heritage, 5 green spaces with outstanding relaxation and sport functions.

The following green spaces in Štúrovo have been selected for inclusion to the tours:

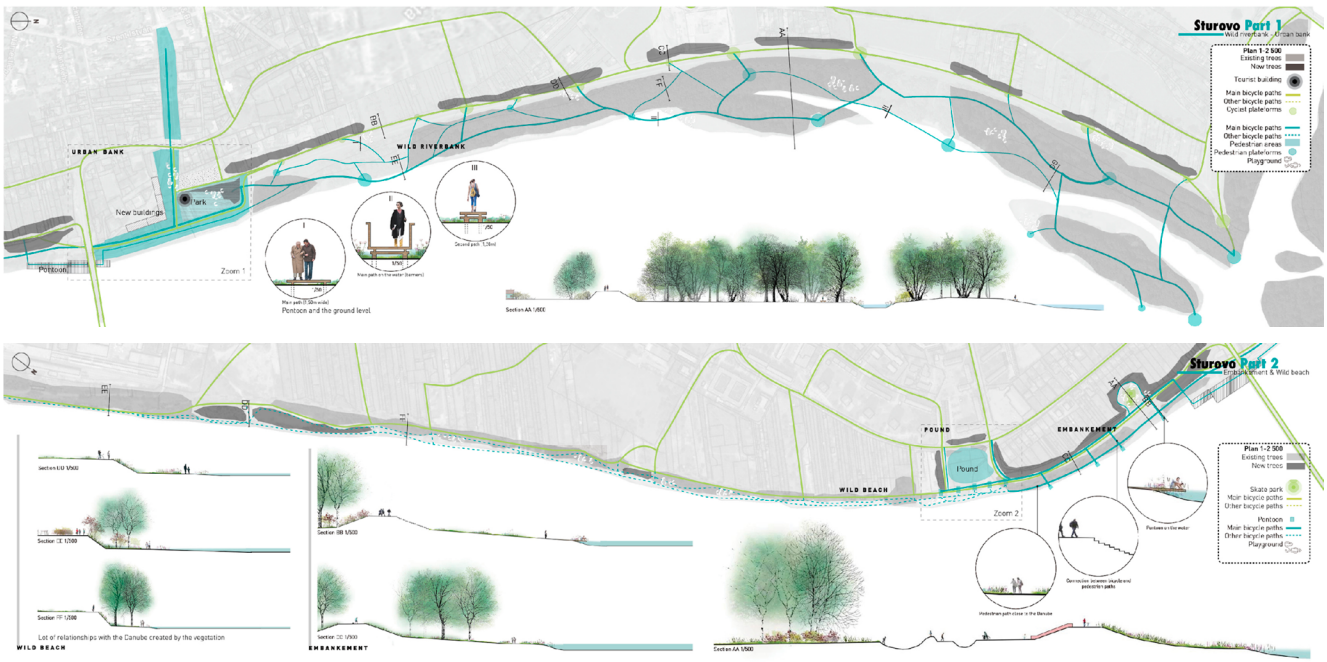
- green natural areas in the inundation territory of the Danube, meeting the criterion 1 green infrastructure of outstanding natural heritage value,
- recreational green spaces and recreational areas of the thermal spa Vadaš, meeting the criterion 5 green spaces with outstanding relaxation and sport functions,
- green space of the Main Street with plane trees, meeting the criterion 3 green infrastructure linked with built cultural heritage,
- the Memorial Park with a monument on the Freedom Square, meeting the criterion 4 green infrastructure linked with intangible cultural heritage,
- small park on the Square of St. Emeric with the church of St. Imre, meeting the criterion 3 green infrastructure linked with built cultural heritage and the criterion 4 green infrastructure linked with intangible cultural heritage,
- small park on the Street of Jan Sobieski with a statue, meeting the criterion 4 green infrastructure linked with intangible cultural heritage,
- Military Cemetery – the graveyard of fallen members of the Red Army in the Second World War, meeting the criterion 2 green infrastructure of outstanding cultural heritage value and the criterion 4 green infrastructure linked with intangible cultural heritage,
- Old Civil Cemetery, meeting the criterion 2 green infrastructure of outstanding cultural heritage value and the criterion 4 green infrastructure linked with intangible cultural heritage,
- Jewish Cemetery, meeting the criterion 2 green infrastructure of outstanding cultural heritage value and the criterion 4 green infrastructure linked with intangible cultural heritage.

3.3 Design solutions based on interpretation of research outcomes

Erasmus+ programme students at the Faculty of Architecture, Slovak University of Technology in Bratislava have participated in the research and conducted on-site field surveys. In the final stage they have elaborated design solutions based on interpretation of the research outcomes. They have elaborated urban and landscape design proposals for the main sites of interest and urban and landscape design proposals for development of pedestrian tourist routs and cycling paths in Štúrovo, connecting attractions for tourists.



■ **Figure 1:** Example of student work – Plan for the Štúrovo riverbank program for tourism enhancement by Erasmus+ students Florence Tiberghien, Noa Schumacher, Camille Clap, 2017, supervisor Katarina Kristianova
Source: Archive of Institute of Urban Design and Planning, Centre for Landscape Architecture



■ **Figure 2:** Example of student work – Landscape design proposal for the Štúrovo riverbank by Erasmus+ students Florence Tiberghien, Camille Clap, 2017, supervisor Katarina Kristianova
Source: Archive of Institute of Urban Design and Planning, Centre for Landscape Architecture

The urban and landscape design proposals elaborated by students can serve as an inspiration source for the municipality of Štúrovo to select the sites for local interventions as pilot actions and for further planning activities. These impulses are needed to initiate current cultural, urban and social transformations of public spaces, squares, parks and the river promenade in Štúrovo for tourism enhancement, and also for valorisation of living environment for inhabitants and citizens.

4 Conclusion

In order to develop tourism and attract visitors, urban destination sites often adopt different strategies. This paper illustrates the green infrastructure approach for a strategy of tourism enhancement. Green infrastructure can play an important role in attracting tourists to urban areas and increase their recreational values. The methods of identification and evaluation of green spaces for inclusion into tourist tours used in the case of the town Štúrovo, can be used by the Danube towns in the DANUrB network to develop the local strategies of identity, selfhood and tourism enhancement.

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