

DESIGN OF TOURISM INFRASTRUCTURAL OBJECTS IN CONDITIONS OF CIRCULAR ECONOMY

Giorgi Giorgadze

Associate Professor

East European University

Abstract

The requirements of the design and construction market in the context of a global pandemic era are fundamentally different from the usual picture of previous years. The economic crisis affected all sectors of the national economy. In general, but one of the most important areas – tourism, should be especially noted, the income of which is an important and reliable source of budget replenishment, and the development of which was largely determined by the size and intensity of foreign tourist flows. Extraordinary measures were taken by the state to protect the population: The closure of the country's external gates, the quarantine regime, social distancing, etc. caused complete stagnation in this area; The suspension of the tourism activities has created many problems for employers and industry workers, operating companies and the budget. No effective ways to get out of the current crisis situation have yet been found, but there are alternative directions, the emergence of which is associated with pre-design multidisciplinary research and the preparation of the necessary feasibility studies based on the generalization of their results. One of these promising areas is a new understanding of the river factor in the historical development; In this respect, the Mtkvari River represents a significant spatial planning environment for the development of Tbilisi's tourism infrastructure. The article discusses the possibilities of using the banks of the river and its underwater space to create attractive tourist objects. The challenges of the circular economy determine the architectural and planning conditions and the composition of design and technical specifications for the construction of specific buildings and structures.

Keywords: *Interdisciplinary research, Circular economy, Attractive tourist objects*

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Introduction

Tourism in Georgia plays an important role in the country's economy. Income generated by tourism infrastructure has been a regular and reliable source of revenue for a long period of time. The global pandemic has undermined the development prospects of this sector; New realities have emerged that have resulted in the indefinite time restriction on the movement of international tourist flows, the closure of external borders, and the quarantine regime. The entire tourism infrastructure that has been built over many years and in which both large material and financial resources were mobilized, turned out to be in an unfavorable condition. The problem of re-employment of a large number of people currently left unemployed in the tourism industries is as crucial as thought-provoking; The critical task is the re-equipment and adaptation of infrastructure networks and their objects. These and many other related challenges accompanying the spread of the epidemic in Georgia require a rapid response and urgent measures to recover the tourism sector from stagnation and decline. In the current crisis, new data for urban planning and architectural design is determined by the following basic requirements:

- Establishing a new vision of the principles of spatial planning and functional-structural formation of tourism infrastructure;
- Conceptualizing urban design and envisaging organic synthesis with the historic landscape in tourism projects;
- Promotion of business proposals and financial plans for buildings and complexes of the so-called "flexible plans" and "variable architecture" collected according to the schemes of the economic composition in investment planning; allocation of design solutions and construction technologies tailored to the circular economy into a new priority area.

Determining of tourism business success factors

The main factors determining the success of the tourism business (without ranking by importance) are the following:

- The attractive natural environment and favorable climatic conditions;
- Country's history and cultural heritage;
- Quality of service; generosity and openness of the host country;
- Transportation and communication systems to enter the country; simple visa policy;
- Local business skills and competence can be quickly and easily adapted to effectively address differentiated tasks in a changing environment;
- Sustainable financial-economic policy; Access to local markets; affordable prices;
- Interesting folklore and rich and diverse cuisine.

Summarizing the above factors and discussing them in the light of the potential opportunities that exist in the country in the form of compact trip routes, biodiversity, safety, and other favorable conditions, indicate

the prospects for the sector in terms of socio-economic development. At this stage, it is especially important to “open” new directions of tourism services, the development of which will help protect the sector against current and expected risks, bring the tourism business out of stagnation and decline, and in the near future, restore its strategic development status. The path that will lead the sector to a new, reliable course of action inevitably requires: qualitatively new, technically viable – in terms of attractiveness – and highly appealing and economically effective solutions.

The main challenges of circular economy

New realities have set new requirements, the description of which draws the following general picture:

- Any types of tourism services should integrate maximum health and safety measures;
- Business proposals, projects, and programs aimed at introducing new types of services should be in line with the main feature of the circular economy: – they represent economic solutions for the circular forms of action, i.e., “return” profits from sales should be conducted effectively in order to develop and expand the existing business;
- In the conditions of rising inflation, instability of national currency, unfavorable loan terms and, virtually halted foreign investments, naturally, the appropriate option of introducing new services emerge: – implementation of the chosen course in stages – from a small object / service – to the creation of a developed service network, where it will be possible to reinsure the risks by offering similar services elsewhere.

Favorable environment for new types of tourist services

Historical heritage has always been considered a priority for the development of the tourism business. The centuries-old history of Georgian art, contemporary culture, and epic poetry, in this regard, is very interesting for local and especially foreign visitors.

The river plays quite an important role in the perception of the country’s history and, particularly the capital city, Tbilisi. Many dramatic twists and turns are associated with the river Mtkvari; Tbilisi and Mtskheta are a continuous chain of distant and recent memories, bound by: Svetitskhoveli and Sioni cathedrals, Pompeus Bridge, and the self-sacrifice of one hundred thousand martyrs at Metekhi, Krtsanisi Valley, Island of Madatovi, Ortachala Gardens, etc. Until recently, some tour providers organized river trips with improvised rafts, stylized ferries, sightseeing boats, etc. Rike Park and Abanotubani received numerous visitors during the traditional Tbilisoba festival or one-off entertainment events. The subject of Mtkvari remains one of the most attractive factors in the tourism industry; Understanding this topic in a new way and discovering its hidden reserves will most likely be a guarantee of a new life for the sector.

Urban Riverfront Interventions

The Mtkvari River flows across the entire country – from Turkey towards Azerbaijan. Most of the cities and settlements of Eastern Georgia are developed in the areas adjacent to the Mtkvari embankment. Within Tbilisi urban environment, the Mtkvari is observed by its “carved” contours of its channels and banks that sharply isolate and distinguish the river from its surroundings. Such isolation of the Mtkvari was caused by the wide-ranging river coast construction projects in Tbilisi in the late 1940s and early 1950s, and as a result, the river, with fixed barriers and bordering highways, has completely cut it off from the city’s historical space development and closed the pedestrian flow (Pic. 1).



(Pic. 1). Eastern bank of the Mtkvari River in the vicinity of Abanotubani in Tbilisi. The construction of the highway blocked pedestrian access to the river. Source: "Tbilisi 1958 in American Color Photography", Pinterest.

Only in a small section – since the development of Rike Park – it became possible to “return” the coastline back to pedestrians. These developments, highlighted in an article on transport regulation in the city’s historical urban space (Giorgadze, 2017). The Development of Transport Infrastructure Among Cities with a Cultural Heritage (on the example of Tbilisi, Georgia). The History of Land Transport, 3(1)], emphasize the importance of prioritizing pedestrians in the city’s historical space and how strongly these circumstances affect the flow of tourists (Pic. 2).



(Pic. 2) “Return” of a small strip on the western bank of the Mtkvari River back to pedestrians in Tbilisi, alongside the Rike Park. Source: Traveler photo, Photo by E. Sorokin: “View of Rike Park from Narikala Fortress”, November 2019.

Blocking pedestrian access is the biggest mistake in urban planning, although it is not a main concern for the Mtkvari. River pollution, deplorable water quality, lack of treatment and filtration facilities, illegal inert material extraction from the river bed, dumping of construction waste on the river coasts – this is an incomplete list of the factors that present a sharply negative picture of the country’s main river (Pic 3). The result of the long-term impact of these conditions is the ecological imbalance of the river valley. The adjacent territories and the water area itself have lost their attractiveness to both the nearby settlers and outdoor tourism. The budget loses huge revenues due to inefficient use of the potential opportunities of the natural landscape.

These issues have repeatedly become the main focus of research programs and international projects related to the Mtkvari River. There are up to a dozen works carried out on such an important topic for the South

Caucasus region with the active participation of international donors. The last of these projects, completed in 2012 (Ensuring the Improvement of the Mtkvari River Management in Tbilisi Area. Framework Contract Beneficiaries 2009, Lot 6 Letter of Contract №2012/294630 – Version 1), sponsored by the European Union (EU), with the Tbilisi City Hall as its beneficiary, was unprecedented in its scale and a large number of research profiles.

The new Land Use Master Plan of Tbilisi (2019) analyzes in detail the dominant position of the river in the linear development of Tbilisi and assesses the prospects of urban development perspectives in terms of creating urban recreational spaces involving river coastlines.

A New Holistic Model of Tourism Infrastructure. Development Strategy

In 2019, the newly established Design and Research Bureau at East European University (EEU) launched a large-scale research program called: “Urban Management of the Mtkvari River Bank” (led by G. Giorgadze). The first stage of the program “Festival Space in the Historical Part of Tbilisi” was completed in the same year. This part of the project prepared an assessment of the spatial development of the historical center of Tbilisi in terms of organizing large-scale urban events; The influence of the river as a strong urbanizing factor in terms of achieving an impressive effect was generalized, taking into account illustrative examples in global practice and the specifics of the morphological structure of Tbilisi (Pics. 4, 5).



(Pic. 3) Eastern bank of the Mtkvari River polluted with construction waste in Digomi riverside area, Tbilisi. Source: photo by G. Giorgadze, August, 2012.

The general scientific relevance of the topic, the significance of expected results in improving Tbilisi’s spatial development process, and attracting investments vital for the city, determine the reasonableness of deepening the research direction.



(Pic. 4) An attractive space on a small river channel, adapted to the tourism business. San Antonio, USA. Source: <https://www.thesanantonioriverwalk.com/media-room/>

The relevance of the research direction is also indicated by the EU's interest in the project under development¹, as it is considered one of the most important priorities for Tbilisi in terms of assessing the prospects for the development of urban tourism infrastructure.



(Pic. 5) Public recreation area in the central part of the city in the revitalized area of the river. Seoul, South Korea. Source: <https://www.dreamstime.com/editorial-stock-photo-cheonggyecheon-stream-seoul-south-korea-beginning-downtown-image48397938>

Phase II of the program (January-July 2020) was developed as a preliminary test project for creating an international format for cooperation and presented at the International Conference in Florence, Italy – Urban planning and architectural design for sustainable development – 5th edition (July 8-10, 2020).² As an independent scientific article: “Historical heritage in the city below and above the river level” (the article is included in the collection of conference materials and is currently being prepared for publication); the article and report presented at the conference described the traditional types of tourism services on the Mtkvari River; the main focus is on the organization of underwater cultural heritage expositions, still unexplored in the tourism business: – a promising location for a pilot project was selected and a conceptual 3D model was presented (Pic 6).



(Pic. 6) Underwater exposition on Mtkvari River, Ortachala district, Tbilisi. 3D preparatory sketch for a pilot project (G. Giorgadze, 2020).

¹ Ensuring the Improvement of the Mtkvari River Management in Tbilisi Area. Framework Contract Beneficiaries 2009, Lot 6 Letter of Contract №2012/294630 – Version 1.

² Ferdinando Trapani, Francesco Alberti, Sreetheran Maruthaveeran. Advances in Urban Planning and Architectural Design for Sustainable Development. Proceedings of Urban Planning and Architectural Design for Sustainable Development (UPADSD) – 5th Edition 2020.08-10 July, 2020. IEREK Press. Academic Research Community. www.ierek.com

Phase III of the program (the final phase) includes in-depth development of the urban management of the river, especially its coastlines and underwater space, and adjustment to the requirements of the country's economic policy. Based on the summary of findings and recommendations, a pilot version of the adopted holistic model will be implemented with 3D modeling and investment planning, which together will create a model investment package for investors. It is planned to discuss the completed package with the new strategy at the Tbilisi City Hall, for which a separate presentation version will be prepared.

The clarification of the key tasks before starting the final part of the program is as follows:

The program "Urban Management of the River Coastlines of the Mtkvari River" is committed to exploring the options and possibilities of how to rescue the tourism business from the crisis and to present a promising holistic model for the design and construction of tourism infrastructure objects in the light of new circumstances in the country.

The concept of a holistic model should be fully in line with the circular economy platform and its implementation should be fast and easy and characterized by high economic efficiency.

The development concept, which will be presented to the Tbilisi City Hall, must comply with the city's urban development policy and create real preconditions for solving the current problem – restoring the ecological balance of the Mtkvari River.

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