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Design Solutions and Innovative Landscape along the Railway Line High-Speed Train "Afrosiab" on the Route "Tashkent-Samarkand"

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Abstract**—** *A model of a complex of regional factors influencing the formation of architecture and landscape of settlements around Railways in Uzbekistan has been developed. It includes choosing high, convenient locations for rural and residential areas near natural water sources, scenic forests, beautiful landscapes, open spaces where rainwater does not accumulate, planting tall trees around localities to block them in severe storms and windy areas, or for other purposes. It is advisable to choose a place with a large number of trees, the use of natural and climatic conditions of this place is also important for enriching the landscape architecture, architectural and landscape quality of the territories around the railway.*

Keywords— *Railway, landscape, gobion, model, artificial lawn, oasis.*

I. INTRODUCTION

Most foreign tourists and visitors visiting the country travel by the Tashkent-Samarkand railway to the historical cities of Uzbekistan: Samarkand, Bukhara, Khiva, Shakhrisabz, Termez and the capital of Karakalpakstan, Nukus. Avoiding the appearance of unpleasant "landscapes" and providing them with artistic solutions of landscape design that give tourists an aesthetic mood, is an urgent problem of scientific and practical significance in accordance with the state program of tourism development.

It is planned to develop and present landscape design projects with an aesthetic appearance that will attract the side zones of the Tashkent-Samarkand high-speed train "Afrosiab". In the eyes of visitors from abroad and the Commonwealth of Independent States, not only the beauty of our historical cities, but also the Railways that connect our historical cities are visited by tourists must be unique. In this regard, the project provides for a more aesthetic appearance of our cities and special attention when organizing the landscape around the railway.

Noise-proof screens were installed on the sides of the railway, covering the railway slopes with stone mosaics, creating artistic and aesthetic compositions from gobion art and waste, strengthening national attributes in these compositions "Welcome" at the entrance to Samarkand and Tashkent in Uzbek, Russian and English.

When entering Samarkand by high-speed train, it is proposed to install decorative beams and lights on both sides of the highway. At the entrance to Samarkand on both sides of the hill there are arches, and at the bottom of the snow leopards, on the top of the arch - a flying bird of freedom and happiness "Semurg", and the arch itself is made of anodized aluminum and illuminated in the evening.

Construction of modern blue lakes from the left and right side of the highway to the railway, improvement of existing ones, that is, turning this place into a recreation area, which includes cafes, various pavilions, gas stations, road construction, sand in the bathing area, benches, umbrellas, night lights, plants, trees. In general landscaping, installation of water tanks and pumps for watering plants, and on the second part of the road, on the section from the highway to the railway, Parking lots, motels, gas stations, which are suggested for the reconstruction of the artistic and aesthetic infrastructure and landscape of the entire railway zone.

Given the proximity of the Zarafshan river to the railway and depending on the terrain, it is planned to offer a Techno park complex "Semurg" on an area of about 300x700 m, i.e. masters of applied art and landscape design equipment.

II. THEORY

Research of sections along the high-speed train Tashkent-Samarkand "Afrosiab"; develop an innovative landscape and design solution for identifying and photographing visually disturbing, that is, unsightly views on the edge of this railway line. It is necessary to study and scientifically summarize national and foreign achievements and experience in this field. Special literature on the subject, laws and decrees of the state, normative and normative literature and implementation of scientific and practical developments developed by the authors on the topic should by analyzed.

III. RESULTS AND DISCUSSION

- High-speed train Tashkent-Samarkand on the route "Afrosiab" on both sides of the railway, houses, fences, types of buildings were photographed on the route from Samarkand station to Tashkent;

- The following explanatory work was carried out with the owners of houses and yards on the roadside on the aesthetic landscape solutions of the roadside and their implementation:

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1. Aestheticization of styles and barriers of buildings and structures;
2. Planting ornamental trees and shrubs in these areas to improve the landscape of buildings near the roadside and attract homeowners to their care;
3. To improve the non-aesthetic style of buildings, it was recommended to cover them with graffiti or thematic panels made in art painting;
4. It is recommended that the color of the proposed metal structures and technical devices must be given in accordance with their functions;
5. It is recommended to install advertising devices (banners, signs, stretchers) in specially designated areas on both sides of the railway;
6. At the entrance to the city of Samarkand, the authors proposed a monumental composition and developed the project proposal. The elements of this composition consist of:

- metal construction, concrete, baked brick, anodized aluminum, tinted glass, lighting;

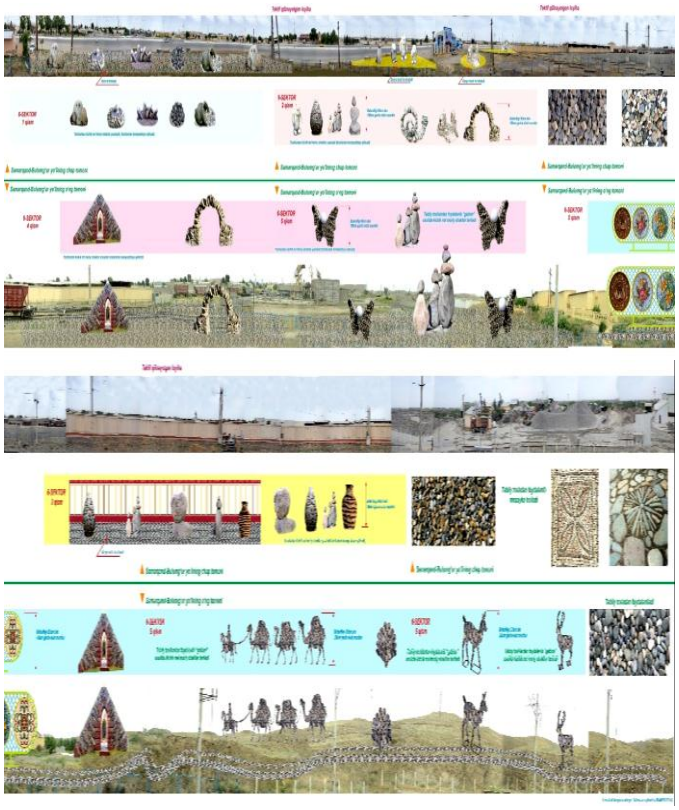

Fig. 1. Offers from local raw materials to the railway side.

- The word "Welcome to Samarkand" in the composition is written in Uzbek and English, the letters are in clear relief, the background is set.

7. It is proposed to develop and implement the project of an arch reflecting the main gate of the city of Samarkand along the highway parallel to it, near the railway bridge over the Zarafshan river. The arch consists of the following elements:

- the back part is made on the basis of a metal frame with anodized aluminum and is illuminated in the evening;
- the symbol of the bird "Semurg" is placed on the back;
- the areas around the arch will be improved: the beach, camping and catering facilities will be located.

8. the sculpture composition in the gabion technique will be installed in the zone of open edges "Chupan-ATA".

IV. Conclusion

1. This paper is the first to develop a model of a complex of regional factors that affect the formation of architecture and landscape of settlements around the railway, according to which such factors are divided into two parts: permanent factors include natural and climatic factors, and variable factors include those related to the social, economic, creative, national traditions of the population, historical development and standard of living.
2. In general landscape architecture and design, like a mirror, is a reality that reflects the lives of rural residents, their current standard of living, socio-economic status, level of development of the rural population, and finally, their architecture and landscape culture [3].

Landscape architecture is the result of the creative activity of people who live and work under the influence of this space and time, who at all times, in different places and times, have absorbed and reflected the material, spiritual and cultural values and riches of society. The creative factor that a person makes is always reflected in the work of architects in harmony with customers and builders, their skill, talent, skills, culture, which in turn depends on their education, professional level and experience. All these factors are reflected in the model that we have developed.

3. When addressing issues related to landscape architecture and design of rural localities around the railway, the following should be taken into account:

- take into account the advantages and disadvantages of the historically established system of territorial location and the main elements associated with it, the formation of rural agro-industrial complexes in the near future and the organization of integrated economic development;
- ensuring the development of cultural and social services to the population and creating favorable conditions for recreation;
- taking into account the future growth of rural housing;
- architectural and landscape planning and organization of localities, equipment and improvement of their engineering equipment;
- compliance with current sanitary, environmental, micro and macroclimatic improvements, environmental and other standards and requirements;
- to provide the population with green plants, taking into account the possibilities of forestry being created in the regions [1].

4. Prospects for the development of architecture and design of rural landscapes should be determined in accordance with the specialization of agricultural enterprises in rural areas, schemes and projects of land use in rural areas, taking into account the urban planning of the district, the formation of tourist complexes. It should be envisaged that the network of enterprises and public service institutions in rural areas will

consist of a single system that will cover all localities, workplaces and recreation areas.

5. For the territory of villages and settlements, it is necessary to choose higher, sunny places close to natural water sources, beautiful trees, beautiful landscape, spacious places where rain water does not accumulate. In areas with severe storms and windy areas, it is advisable to plant tall trees around homes to block them, or choose a location with a large number of forest and giant trees for this purpose. The use of the natural and climatic conditions of this place is also of great importance for enriching the landscape architecture, architectural and landscape quality of the territories around the railway. It is especially important to include existing green trees, open reservoirs, and beautiful terrain slopes in the design environment. The landscape and landscape around the railway will be more beautiful when the historical solution of houses, crossings, streets is designed with these natural conditions in mind.

6. Creation of green zones on the areas around the railway, architectural and design improvement of such zones and streets and residential areas, giving them an artistic and aesthetic character, connecting common recreation areas with residential areas through shady sidewalks in combination with the above methods, rural settlements can become factors that give the area and the entire rural architecture a landscape tone.

In this regard, when landscaping territories with favorable landscape and climate conditions and using various landscape devices, various small architectural forms and devices are possible in desert territories (umbrellas, galleries, street bridges, monolithic volumes, etc.).

7. Regional architectural and construction departments, district architects must have standard architectural decorations of rural houses in the vicinity of the railway, landscape compositions used in them, plants and landscape compositions, graphic albums that represent solutions for landscaping the yard.

8. In this paper we consider a system of landscaping around the railroad and the question of their regulation. The system of landscape solutions for territories around the railway is divided into three main structural groups: General-purpose landscape solutions; limited use of oases and special-purpose landscape solutions. Names of landscape solutions belonging to each group are defined.

9. Special attention is paid to the main principles and tasks of designing a green zone system.

The following basic principles should be observed when designing the system of green zones of urban and rural settlements around the railway and organizing their landscape solutions:

- Uniform distribution and placement of large green areas around the railway. This requirement applies primarily to public gardens;
- ensuring the continuity of the greening system on the railway section, i.e. by creating a single system of continuous greenery;
- connecting green areas around the railway and bringing them to a single integrated solution [2].

The following three main tasks need to be solved when organizing a system of landscape solutions around the railway:

- functional task-creating green urban areas for various purposes and creating a system of other green environments;
- sanitary and hygienic task-to improve the ecology and microclimate of the railway environment;
-architectural and artistic task-organization and formation of an architectural and landscape environment that is artistically integrated and aesthetically attractive.

10. In this paper, the following scientific conclusions and results are obtained about architectural planning methods and green compositions used in landscape architecture:

Three different architectural and planning styles have been widely used in landscape architecture since ancient times and in modern landscape practice:

a) the method of symmetrical planning of the regular order;

b) the style of planning characteristic of the free nature;

c) mixed method.

11. Green compositions formed from trees and shrubs include: solitaire games, groups, rows, arrays, and plants used in the vertical landscape. In this paper, the types of each green composition and recommendations for their application in landscape practice were developed.

12. The paper provides recommendations on the types of flower beds and lawns, methods of their creation and application of these methods in landscape architecture.

13. The first scientific and practical proposals in the form of a graphic album aimed at the development of landscape architecture and design around the railway were developed for the district khokimiyats of the Samarkand region.

14. The results of the research were presented to experts at the scientific conference through 3 scientific articles and 3 scientific reports published in the press in 2019, and suggestions were received for practical application.

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