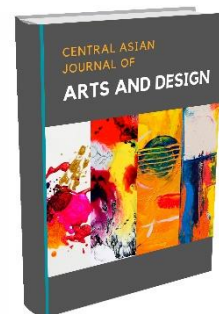




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Decorative and Artistic Lighting of the Historical Cities of Uzbekistan

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Abstract

The article deals with the need for a comprehensive study of the issues of decorative and artistic lighting of the historical part of modern cities of Uzbekistan, which allows not only to create a special atmosphere and imagery of architectural monuments, but also improves the infrastructure of the city and makes it safer at night.

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Introduction. The light environment of the city is one of the most important systems in the hierarchy that ensures the vital activity of the population. First of all, it creates the necessary parameters for the comfort of the urban environment both in the interior and in the outdoor spaces surrounding us. The formation of the light environment of the city is carried out by a combination of functional and architectural and artistic lighting. Planning the light and color environment of the city involves identifying symbolic objects (dominants) that can be observed from various directions and distances. As a rule, these are objects that are significant for the infrastructure of the city and are characteristic of the area.

When planning the choice of light accents, you need to consider such aspects as:

- planned visual effect from lighting;
- location - the possibility of frequent inspection of the object by tourists and passers-by;
- an attractive prospect of viewing objects;
- original architectural form of objects;
- economic feasibility of lighting;
- the possibility of compositional linking with already existing illuminated objects.

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In the evening, with the help of artificial lighting, you can form a new "image" of a building or structure, just as it happens in a theater (Fig. 1). Playing with contrasts of brightness and color, controlling the boundaries of the illuminated space, you can achieve a variety of effects.

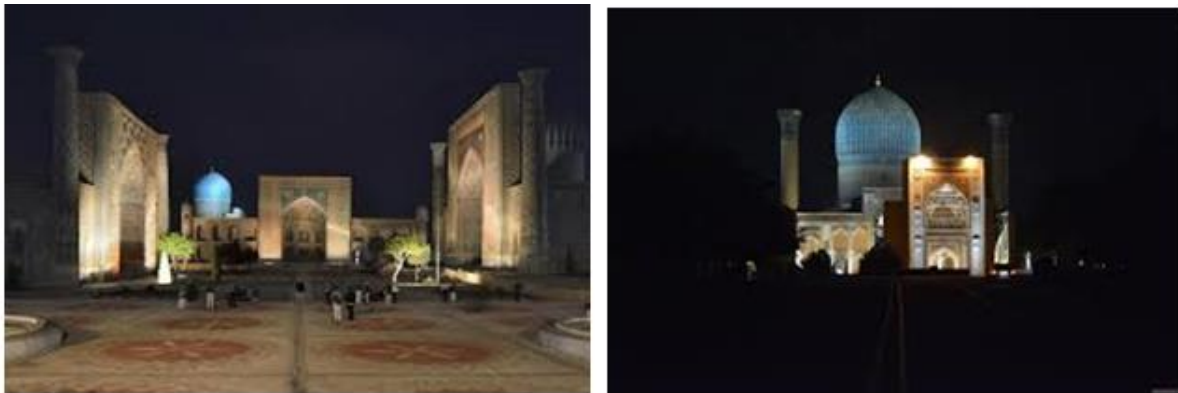


РИС 1. Освещение архитектурных памятников Самарканда.

When designing lighting in detail, there are a number of important factors to consider. These are: the appearance of the illuminated object in the daytime and at night, the direction of observation, the distance of observation, the location of obstacles in the field of view, the position of light sources, and such features as architectural elements, the texture of the finishing material, the surface of the water, the difference in the nature of vegetation in winter and summer.

Discussion. In most cases, there are a limited number of main directions of observation, and often they are reduced to one (for example, when observing the front facade of a building). When it is possible to observe the form from different directions, it is revealed by creating a contrast between facades or different parts of the exterior. Creating certain contrasts provides the perception of depth and three-dimensionality of a building, sculpture or other object.

It is difficult to overestimate the importance of lighting in the process of perception and evaluation of the aesthetic qualities of architecture. Especially given the great importance in the modern infrastructure of the ancient cities of Uzbekistan, such as Tashkent, Samarkand, Bukhara, Khiva, Ferghana, Kokand, Urgench, Shakhrisabz and others, historical monuments, it should be noted that it is evening lighting that will help create an unusual atmosphere of the eastern city, which will allow both residents of these cities and guests of our country to take a fresh look at the unique historical heritage and appreciate its significance in shaping world architecture. Among the picturesque ensembles and genuine architectural masterpieces, you seem to plunge into the atmosphere of a medieval city, you can easily imagine its squares, streets, caravanserais, madrasahs (universities and spiritual seminaries), mosques, and enjoy the amazing beauty of handicrafts.

In the historical cities of Uzbekistan, unique architectural monuments from the ancient period to the late Middle Ages have been preserved. Many of them are works of world architecture, preserved almost in their original form. Today there are more than 10,000 monuments of history and culture in the republic, of which 7844 monuments are under state protection: 3013 architectural, 3843 archaeological, 998 monumental, including more than 20 of them are under the protection of UNESCO. These are world-famous masterpieces of the architectural art of the East and Central Asia, such as the Bibi-Khanym Mosque, the ensemble of Shakh Zinda mausoleums, Registan Square, the ancient settlement of Afrosiab, the mausoleums of Gur-Emir, Ismail Samani and others. Registan, created during the reign of Amir Temur's grandson Mirzo Ulugbek, can be considered the pearl of

architectural genius. The ensemble of the square is formed by the Ulugbek madrasah - 1417-1420, the Sher-Dor madrasah - 1619-1636, the Tilya-Kari madrasah - 1647-1660. The architectural ensembles of Samarkand are unsurpassed monuments not only of Central Asian architecture, but also of world architecture. Necropolis Shakhi- Zinda XIV- XVBB. can be called a museum of glazed decoration and glazed tiles, the facades of the mausoleums are so diverse.

It is recognized that the best preservation of monuments can be achieved only with its active service, because an architectural monument that has lost its function is destroyed both morally and physically. In its essence, architecture is not only an object that can evoke certain feelings and moods in the audience, architecture is closely connected with the life of society, its views and ideology. Therefore, one of the main ways to preserve the monument is that the monument should acquire the right to an active life with the obligatory preservation of its historical and artistic significance. This requires the development of a method and ways of scientifically based adaptation.

The use of architectural monuments, in addition to the ideological and aesthetic aspects, also has a serious economic basis. Monuments can be actively used for the needs of modern society, while being preserved and bringing significant income to the state, because only reconstruction and restoration do not guarantee the preservation of an architectural monument and its participation in society. In this regard, it seems more rational to use existing knowledge in solving problems and problems. The problem of using the historical and architectural heritage begins with the study and organization of the spatial environment of the monument, which consists of many aspects that require social problem solving. The main ones are the "docking" of the old buildings with new spatial formations, transport communications, improvement and planting of greenery on the territory of the monument, etc.

One of such methods and ways of solving this problem, which allows the historical and architectural monuments of the ancient cities of Uzbekistan to give a "second life and breath" is its "artistic and decorative lighting". It will not only "prolong" the life of the monuments in the evening and at night, but will also give them a new status as an acquired artistic image.

Artistic and decorative lighting of the ancient monuments of Uzbekistan is a practically undeveloped and little-studied area of research. From the point of view of "light architecture", historical monuments are "eternal material and an interesting object for research".

Artificial lighting obtained by modern lighting devices has great potential for the light reconstruction of ancient monuments, the development and implementation of various prepared projects for the artistic composition of architects' ideas.

Artistic and decorative lighting allows architects, together with lighting engineers, designers in electronics, automation and other specialists, to create artistic compositional projects that will once again allow emphasizing the uniqueness, magnificence and originality of historical and architectural monuments of the ancient cities of Uzbekistan from a new perspective.

It should also be noted that recently much attention has been paid to a comprehensive study of the issues of decorative and artistic lighting of the historical regions of the cities of modern Uzbekistan with the active involvement of young scientists and foreign specialists. An example of this is the project to create evening lighting in the Museum of the Ichan Kala Reserve in Khiva, carried out jointly with Russian designers, the winners of the lighting design competition LIT Awards 2020. (FIG. 2) lighting equipment is recommended for installation at Unesco World Heritage sites and meets international standards for safety and energy efficiency.

It is also worth noting that architectural and artistic lighting is the main part of the program for the development of evening tourism at the Museum, the purpose of which is to increase the flow of

tourists, the duration of the tourist season, hotel occupancy and income of people associated with the service and tourism sector.

Another example of developments in this area is the work of specialists from the Samarkand State Institute of Architecture and Civil Engineering represented by the can.arch. Kamalova D.Z. In the course of the work, for the study and analysis of the light reconstruction of historical monuments, the most significant and expressive objects of different eras, as well as the Timurid era in the cities of Tashkent, Bukhara, Khiva and Samarkand, were taken, where tourist routes of tour operators and organizers of cultural events are mainly concentrated. leisure and urban residents. When choosing objects of research, various factors were taken into account, in particular: - insufficiently studied and undeveloped issues of light architecture; - contrast of historical monuments with elements of modern urban development; - compactness of their location in the central crowded areas of the city limits.



РИС.2 Вечернее освещение Ичан Калы

To develop lighting architecture and prepare recommendations for the selection and local installation of modern lighting devices at selected objects of historical and architectural monuments of Tashkent, Bukhara, Khiva and Samarkand, a lot of work was carried out on the preliminary theoretical initial stage of the study of the computer version of the design of light architecture.

Attracting modern technology (program 3 Ds MAX) made it possible to create a three-dimensional graphical model of an element of a complex or an ensemble of an object and recommend lighting types for use. (FIG. 3)



РИС 3. Компьютерное моделирование художественно-декоративного освещения комплекса Гур-Эмир в Самарканде.

Thus, decorative and artistic lighting of historical areas of cities allows not only to create a special artistic image, which makes these objects attractive to tourists, but also ensures safety, which manifests itself in ensuring the visibility of obstacles and, accordingly, the safety of movement. Clear visibility of any potential obstruction in the surrounding area helps to avoid injury: steps, ramps, and similar structures must be clearly visible.

Also, highlighting the central and significant areas of the city with lighting allows guests who come from other cities or countries to navigate in the dark. Lighting brings out the characteristic structures of both the city and the region, improves visual orientation, and allows you to better read the map of the city.

From all of the above, we can conclude that lighting technology today is an important component of the organization of the living environment of a modern person. Properly designed lighting of squares and streets is not only the comfort and safety of people at night, but also a powerful tool in the hands of an architect, which allows modeling various aspects of the aesthetic perception of the urban environment.

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