



# Methods of Studying the Architectural Style and Environment Formation in Creating Design-Code Rules of the City of Bukhara

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## ABSTRACT

The article talks about the analysis of the architectural style of the city of Bukhara, the methods of applying it in the design of small architectural forms by taking the model and using the elements of the historical architectural object in the modern design practice. Issues of urban space design and street beautification, reflecting an integrated approach to urban environment design and how small architectural forms and design solutions should be according to the "greening rules" section of the Design Code. recommendations on methods are given. Conclusions are made about the use of small architectural forms as elements of improving the urban environment, its goals and tasks.

## Keywords:

Historical city, style, design code rules, Islamic architectural elements, minarets, brick ornaments, small architectural forms, lighting lights, street barriers.

## Introduction

Currently, most developed countries have developed design codes for their cities. The concept of design-code is not a new concept, it may have been called differently in history, but it was formed within the norms of architecture and urban planning. Now this concept is known to the world and every city is trying to create its own design code. The rules of the design code not only regulate the facades and spaces of city buildings, but also help to develop all business sectors there.

Studying information related to the history and architecture of the city is of great importance in

developing the design code of the city of Bukhara. There is a need for the state to carry out these studies and observation practices, to develop design code rules for the historical centers of the cities of Uzbekistan. The order of the President of the Republic of Uzbekistan dated November 27, 2020 "Development and implementation of the territorial "design code" taking into account the purpose of the elements of the urban environment, traditional architecture and culture, as well as the natural and climatic conditions of the place by July 1, 2022" Decree No. PF-6119 and the scientific project being carried out based on it also

envises the development of the Design Code rules of the historical centers of Bukhara and Samarkand cities. With our scientific team, we first researched the city streets in order to study the historical areas of the city of Bukhara and develop the rules of the design code. When developing the rules of the design code, first of all, the architectural environment and style are studied. The city of Bukhara is considered a very important city in the Islamic civilization, and Islamic architecture has developed very widely here.

Islamic (Muslim) architecture is divided into five schools of architecture: Syro-Egyptian, Persian, Indian, Maghreb and Ottoman (relatively small schools, for example: Iraqi, Central Asian and other derivative schools) [1]. Islamic architecture is related to the emergence of Islam and the emergence of the first mosques. Due to the spread of Islam, mosques were built in different countries. The appearance of mosques largely depended on

the construction materials available to the builders. In their construction, raw materials available in this region were used. For example, due to the abundance of basalt stones in Syria, it is often found that the walls are decorated with white and black stones, and later this type of stone was used in other countries. In a number of countries: Iran, Iraq, Morocco, as well as Andalusia, mosques are built of brick, and in other places, of processed natural stone. An important element of the mosque is the minaret. Therefore, Islamic architecture cannot be imagined without minarets. The towers are distinguished by their size and beauty. The Giralda Tower built in Andalusia in the Middle Ages, the Kalon Tower in Bukhara, the Koutubiya Tower in Morocco, the Delhi Qutb Tower in India, and the Jam Tower in Afghanistan are very famous in Central Asia (Fig. 1-5).



**Figure 1. Giralda Minaret in Andalusia**



**Figure 2. Kalon Minaret in Bukhara**



**Figure 3. Koutoubia Minaret in Morocco**



**Figure 4. Delhi Qutb Minaret**



**Figure 5. Jam Minaret in Afghanistan**

These minarets belong to five different schools of Islamic architecture. They differ from each other both in terms of style and construction [2].

In the region of Central Asia, minarets are usually located separately from the mosque building, and they are very strong minarets built of brick. Often, the outer spaces of the towers are covered with colored glazed or polychrome tiles. Islamic architecture is distinguished by its unique domes, arches, tiled elements, and stalactites decorating the gables, magnificent columns, floral and geometric ornaments [3].

The architectural style of Central Asian cities is directly related to Persian architectural

traditions. The national style of the city of Bukhara is one of them. The Arab conquest of Iran in the 7th century and the religious architecture of that time indicate that most of the monuments in these regions are of Arab prototype. Later, the art of the Sassanid period influenced Arab construction architecture. In it, we can see the stylization of floral ornaments and the formation of new polygonal decors [4-7]. Later, such elements became a very popular technique of Iranian architects. The Samanid dynasty mausoleum in Bukhara also shows the prevalence of Persian architectural traditions (Fig. 6,7).



**Figure 6. Ismail Samani mausoleum. Exterior view**



**Figure 7. Ismail Samani mausoleum. Ornaments in the interior**

The mausoleum of the Samanid dynasty is a square-domed building with harmonious proportions, and the composition of the mausoleum is strictly centralized with facades of equal proportions. Open arches and corner columns rise from the four sides of the building, and they are finished with a gallery of light arcades. One of the facade arches has a door, the rest are surrounded by wooden bars that continue the brick wall ornaments. Currently, this architectural monument remains a classic work of Central Asian architecture [8,9].

A distinctive feature of Iranian religious buildings is the domed porches, and the roof of the porches surrounding the square building was completed with a dome. This new model of mosques, which appeared in the 10th century, dates back to Zoroastrian temples. Later, mosques and madrasas were designed based on the principle of this composition. In Iranian architecture, great importance is attached to the open space of the courtyard. It manifested itself in civil architecture (residential buildings, caravanserais, palaces) and religious buildings (mosques and madrasas). Baked bricks entered Iranian architecture through the Abbasid dynasty, a result of the influence of Mesopotamian culture. In these periods, it was customary to decorate building facades with brick ornaments, and later in Movaronunnahr during the Timurid period, the polychrome

technique of using ceramic inserts became widespread. This style can be seen in the cities of Iran. By the 13th and 14th centuries, the art of carving was developed to decorate entrance portals, building interiors, and mosque mihrabs. The architectural style of the city of Samarkand reflects Iranian Muslim architecture, and it is known to the world for its famous Registan complex, Gori-Amir mausoleums [10-13].

When studying the style of Islamic architecture of Bukhara, we can see that the main part of the building facades in the city is made up of brick buildings. The use of architectural style elements of the city of Bukhara in the development of "greening rules", which is one of the sections of the design code rules, is of great importance in preserving the traditions of environmental architecture [4,5]. Small architectural forms used in the process of landscaping, use of local raw materials in the design solutions of street furniture help to preserve the original appearance of the historical city. Together with our scientific team, we worked on the solution of several small architectural forms. The main goal is not to create small architectural forms, but rather to reveal ways of using environmental elements in their creation. For example, one of the unique elements of Bukhara architecture is its unique minarets (Fig. 8).



a



b



c

**Figure 8. a) The minaret of the Bolo-khuvuz mosque. b) Towers of the entrance building of Chor-minor madrasa. c) The minaret of Khoja Kalon mosque.**

These minarets can be used as a template for the shapes of several smaller architectural forms. For example, the appearance of street lighting lamps. Or, these elements can be used in the design of curbs used to demarcate

parking lots and ensure pedestrian safety [14,15]. Currently, the lighting lamps in the historical centers of Bukhara are completely alien to the architecture of the surrounding environment (Fig. 9, 10, 11).



**Figure 9. Lighting lights in the area of historical centers.**



**Figure 10. Methods of using tower elements in street lighting and fence design.**



**Figure 11. Methods of using tower elements in street lighting and fence design.**

In researching the city of Bukhara, our team conducted many researches and studied the scientific researches of several authors. The research of these authors provides more detailed information about Islamic architecture and style. In addition, the scientific works of other researchers who are looking for the development of design-code rules were also effectively used [16-21].

In conclusion, it can be said that in developing the rules of the design code of any city, it is necessary to study its culture, tradition, history and, of course, its architectural style. This helps a lot in revealing the coloristics of the environment and maintaining the continuity of the style. In the cities where the correct design code rules have been established, the improvement of the lifestyle of the population, the development of trade sectors and the growth of tourism have been observed. There are many historical cities of Uzbekistan, such as Bukhara and Samarkand, with high tourism potential, and of course, establishing such regulations in them is considered an important task.

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