
# Historical architectural rules when designing buildings

**Abatova Shamsikamar,** Lecturer, Department of Architectural Design of Rural Areas

ABSTRACT

This article is about the first hospital built in Samarkand - "Bemoristan" by Ibrahim Tamgochkhan through scientific research and graphic reconstruction of its architecture, a building that is very unique for the history of Uzbekistan and the science of architecture, but the building that has not survived to our times is intended to popularize it among the general public and put into scientific circulation.

**Keywords:** Greek architects, buildings

## Introduction.

Thanks to independence, under the leadership and initiative of the leadership of the republic, existing architectural monuments in various regions and historical cities of the country are preserved in their original form and renovated, preserved and effectively used for modern needs, adapted to these needs, beautify the environment for future generations, as well as a number of urgent and noble tasks, such as the designation and maintenance of defensive zones, are addressed and implemented.

Although many books have been written about scientific research and the study of our historical sites and cultural heritage, there are countless aspects of the history of public buildings that are still unknown to science. One of such mysterious activities is the formation of medical institutions, their place and role in the past among people is their history of architecture and construction.

## Goals and objectives of the study.

The role and place of the Islamic faith in the architectural formation of state hospitals in Central Asia are great. In the past, the establishment of such hospitals has helped to encourage Islamic rulers and mystics to become rulers and win the respect of the people through the construction of such buildings. This meant the peace of the people, their tranquility and, most importantly, the strength of universal values in public life and the activities of the rulers of Islam of that time. The first hospitals in Central Asia were built as separate buildings in the early 11th century. An example of this is the Samarkand hospital. There are two main types of hospital tasks: public hospitals and private, palace, arch and park hospitals. Special hospitals have been created for the mentally retarded and seriously ill; they have been built outside the city.

The object and subject of our research is a scientific analysis and generalization of similar monuments of our heritage in our country on the basis of foreign samples and special literature, the study of the architecture of medieval hospitals was carried out in Samarkand on the basis of a graphic reconstruction of a state hospital built in Samarkand in the 11th-12th centuries and has not survived to the present day.

## Main part

Speaking about historical hospitals, we would like to emphasize that the construction of

architectural complexes and buildings built during this period has an excellent theoretical basis. Research in the field of architecture shows that the architecture of Central Asia, like the architecture of the ancient Egyptian and Greek architects, as well as the architecture of the peoples of the Islamic East, has its own proven traditions and laws, some of which have survived to this day.

The use of dimensional modules and the law of symmetry in the history of construction, the shape of the sides of a building in square and golden sections, the use of proportions in them, the use of intricate Islamic, intricate patterns in architectural decorations, the rules for working with them for far and near are included in a series of simple procedures.

Consider the order of architectural design using a large-scale system-modular network of a single building history. In this style, the history of the building is drawn on paper on chorsu (square) grids of different sizes: the thickness of the walls, the position of doors and windows, the width of the porch or roof, and so on are obtained in the same and repeating (multifaceted) proportions in relation to the sides of the same cell. - (Figure 10).

The sides of the square grid corresponded to the measurement of the length of this period (gas, elbow, hand measure, step) and so on. As a result, with the help of these cells, the architect historically achieved the proportions of the parts of the building and calculated in advance the amount of building materials needed for construction.

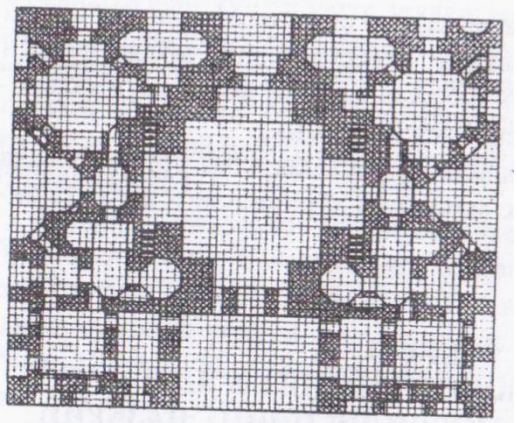

**Figure 10.** *The method of using modular wire in the development of the history of the construction of the architectural drawing of Bukhara (khanaki). XVI century.*

The sides of the square grid corresponded to the measurement of the length of this period (gas, elbow, hand measure, step) and so on. As a result, with the help of these cells, the architect historically achieved the proportions of the parts of the building and calculated in advance the amount of building materials needed for construction. In the same way, the volumetric structure of the building was proportional. But it was also required that the architect knew the laws of determining the compatibility of dimensionless forms, in which he used a number of manual methods. For example, during the Samanid period (IV-X), the architecture of Movarounnahr was relatively well developed, and the art of the applied technique of Khandasa began to be widely used.

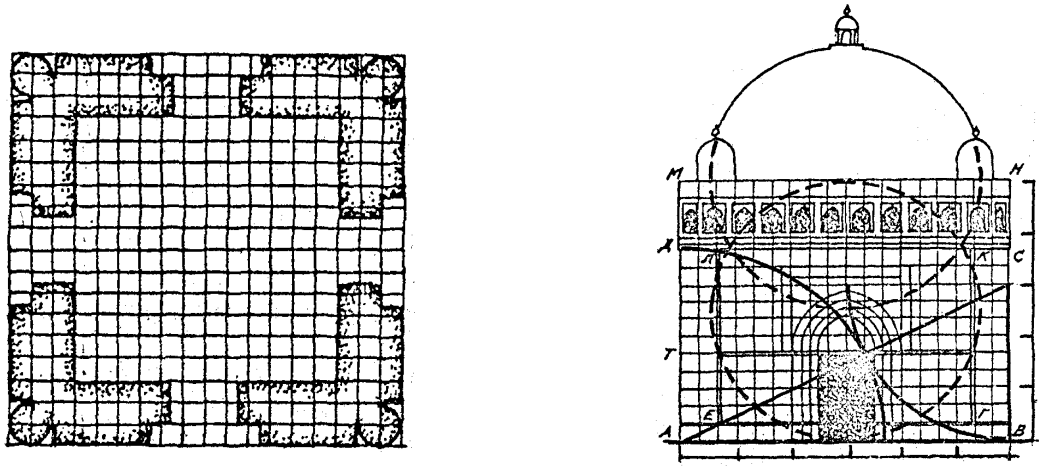

**Figure 11.** *The history and style of architectural design of the Somoni mausoleum in Bukhara*

An example of this is the Samanid mausoleum in Bukhara. The history, shape and elegant decoration of the mausoleum were made of simple bricks according to engineering rules (Figure 12).

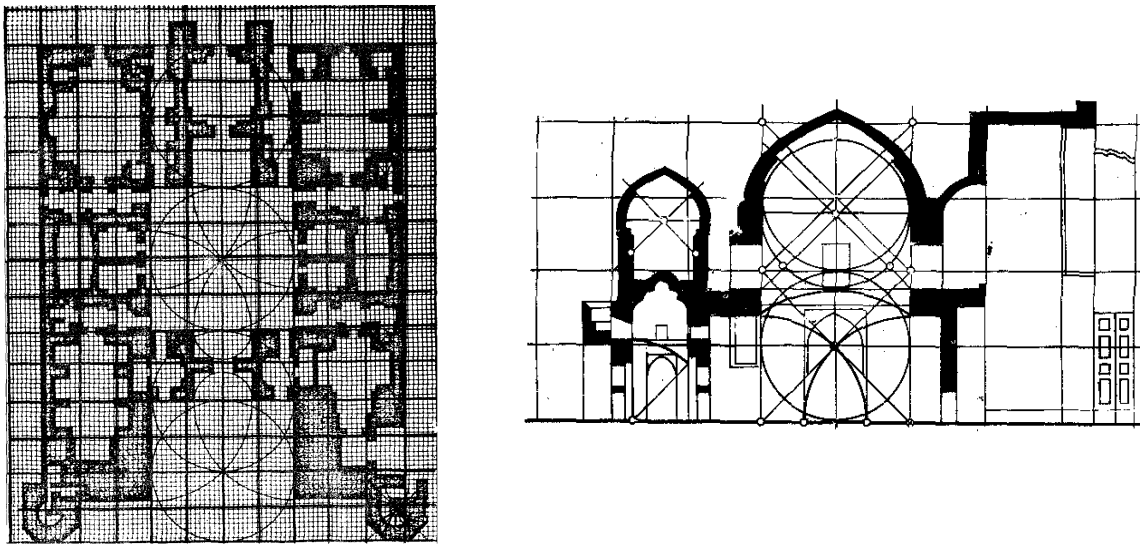

**Figure 12.** *Methods of architectural design of the mausoleum of Khoja Ahmad Yassavi in Turkestan.*

The use of architectural and engineering techniques inherited from ancient times became more common in madrasahs, khanaks and other structures built during the Karakhanid period. Because later most of the Karakhanids fell in love with and admired the creativity, architecture, administration and decoration of the Timurids. They were also well versed in architecture, drew up architectural designs and, if necessary, inspected them, made corrections and followed the progress of construction work.

For example, when Amir Timur was building the mausoleum of Khoja Ahmad Yassavi in Turkestan, he first prepared an architectural drawing and showed the main planning and overall parameters of the building so that builders would not underestimate the respect for Timur's holy mentor Ahmad Yassavi.

The same can be said about the construction of architectural complexes by Oksaroy Timur in Shakhrisabz or a mosque in Samarkand. In general, Timur and Timurids built their houses in alliance with architects.

It should be noted that Giyosiddin Kashi, a leading researcher at the Academy headed by Mirzo Ulugbek, is not only an astrologer and mathematician, but also a talented engineer who has perfectly studied the geometric laws of medieval architecture. The same can be said about Ulugbek himself, who at that time had deep knowledge not only in natural sciences and mathematics, but also in engineering, in order to build large, well-designed and complex structures at the Samarkand observatory. It should be noted that Ulugbek's observatory was unique in the world at that time in terms of its content, design and size.

Cauchy's masterpiece Key of Accounts and Booklet on the Circle is devoted to architectural geometry, which contains descriptions and drawings of five different styles for making odd, arched and domed.

This means that these styles were known to Central Asian architects long before Kashi and were widely used in architecture. The methods described by Kashi are very simple to implement and easy to use in design, and in construction, these methods were performed using compasses instead of the usual gas straw and planing tape.

**References**


1. Tashkent, "Science", 1971.
2. Khodjiyev T.K, Khodjiyeva G. From the ethnic history of the Uzbek people. T .: University, 1995.
3. www.ziyonet.uz Electronic database of the Ministry of Higher and Secondary Special Education of the Republic of Uzbekistan on all topics.
4. www.mahalladosh.uz
5. www.literature.uz-literary site.
6. www.pedagog.uz-pedagogika-predagogical site