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BUILDING CULTURE OF ANCIENT PERIOD ARCHITECTURE OF UZBEKISTAN (EXAMPLE OF KHOREZM)

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Annotatsiya: ushbu maqola – O‘zbekiston qadimgi me'morchiligi shakllanishida qurilish materiallarining tutgan o'rni haqida. Shuningdek ushbu hududda joylashgan saroy, ibodatxona hamda mahalliy me'morchilikda foydalanilgan qurilish tehnikasi ta'rifi, qo'llanilish usuli ochib berilgan.
Kalit so'zlar: qurilish ashyolari, loy, xom g'isht, qurilish tehnikasi, fuqarolik arxitekturasi, saroy

Аннотация: эта статья - о роли строительных материалов в формировании древней архитектуры Узбекистана. В ней описаны способы применения строительной техники на примерах жилых домов, дворцов и храмов.
Ключевые слова: строительный материал, глина, кирпич-сырец, строительная техника, гражданская архитектура, дворец, фундамент

Annotation: This article is about the role of building materials in the formation of the ancient architecture of Uzbekistan. It describes the methods of using construction equipment on the examples of residential buildings, palaces and temples.
Keywords: building materials, clay, raw bricks, construction equipment, civil architecture, palace

Introduction. The territory of Central Asia is considered one of the oldest settlements with a rich history for many years, and it included regions with a high level of state system, such as Khorezm, Bactria, Sugdiyona and Margiyona. Today, modern Central Asia consists of five independent states (Uzbekistan, Kazakhstan, Tajikistan, Turkmenistan and Kyrgyzstan) after the collapse of the USSR in 1991, and occupies the territory from the Caspian Sea in the west to the borders of China in the east. The history of this region before the 4th century BC is known to us only from fragmentary information from folk epics and legends. More reliable information about ancient times can be found in the works of authors engaged in researching the history and culture of antiquity. But in various literature and sources of research scientists, the date of the beginning of the ancient period differs from each other (G.A. Pugachenkova IV century BC, S.P. Tolstov and V.A. Shishkina VIII-VII centuries BC, etc.) [1].

The oldest building material was clay made from pure earth. Clay is a traditional and widespread local material that has been and is still used in all aspects of architecture. Raw bricks, diluted mixture and straw are made from it. In order to increase the strength of the brick, binding materials such as dried reeds, straw, crushed natural stone were added to the clay mixture. "They protected the clay from cracks during construction and served as a strong frame" [2]. Foundations, walls, arched constructions were built from clay [3]. Baked brick did not play a constructive role and was found in small quantities. It was sometimes used in the paving of open spaces with alabaster mixture, flat roof (Trouq-kala Palace).

In ancient times, raw brick served as the main building material in all regions of Central Asia, and it was a material that reflected ancient traditions, belonging to the Neolithic and Eneolithic eras and compatible with natural climatic conditions. These building materials determined the way of further development of the Central Asian construction technique [4].

The main part. The possibilities of raw brick and pakhsa, considered the main building materials, influenced the development and renewal of construction styles and architecture of Khorezm, Bactria, Sogd, Fergana, Choch and Ustrushana. In addition to general characteristics, specific characteristics of each region have also been identified.

Even now, clay prepared from soil is used in local architecture in the rural areas of our country. However, this construction material has its own disadvantages. For example, it loses its strength over time, is waterproof and has low earthquake resistance. But despite this, "this material is environmentally friendly, plastic, cheap, invaluable in terms of convenience and considered a widely used building material."

It was a state that united the central regions of Central Asia from the lower Amudarya basin to the south of Turkmenistan. It is a country with a long and rich history, and its lands have remained independent from Greek rule. "Amirabad culture" belonging to the beginning of the last millennium BC, the system of artificial irrigation facilities created in the lower Amudarya basin, and the city-fortresses that are the symbol of early urban planning are Jonboskala (4th century BC), Koy Krilgankala (4th century BC - 2nd century BC - 5th century BC), Tupraqqal'a (1st century BC - 6th century BC), Ayozqal'a (2nd century BC) and others testify to the existence of a state structure in Khorezm oasis (Fig. 1).

Figure 1. In the 1st millennium BC, the main historical monuments of Khorezm are located on the left bank

"The main building materials of this area were raw brick, pahsa, stone, wood, baked brick and sand." These materials determined the further development of Central Asian construction techniques [4]. As a result of the rapid growth of the economic and social spheres in the VII-VI centuries BC, format raw brick appeared in Khorezm and was widely used (Kal'ali kyr, Ko'zali kyr) [5]. The dimensions of raw bricks ranged from 38 cm to 41-42 cm, depending on the size of the building, the construction technique used in it, and the accepted measurement units [6]. In pre-Asian and Achaemenid times, the average brick size was determined by the length of the footprint. In Khorezm, its size was equal to the length of the elbow of the hand. The bricks of this area are much larger than those of other areas. In order for the bricks to be well connected to each other, fingers were dipped into its upper surface and grooves were formed. Mil. av. In the 5th-4th centuries, a rectangular brick was used (Kozali qir 52x26x10 cm), but later it was changed to a square shape. According to scientists, the reason for this was Khorezm's inclusion in the Ahomonian kingdom. As in Bactria, Parthia, Marghiyana and Sogd, signs (simple and complex) were placed on the bricks of Khorezm to calculate them [7].

In this area, pahsa was also widely used and used with great skill. In order not to lose the surface of the pahsa and to preserve its integrity, the upper part is carved in a square-like shape [8]. The pahsa walls, which were widely used in the monuments of Khorezm during the early Middle Ages, were of high quality and solid, with a smooth stone exterior [9]. For example, the walls of Koy-Kirilgan Castle are made of very high-quality materials, with little or no cracks. The surface parts of the walls are not affected by long-term moisture, they are very hard and even look like the surface of a smooth stone (the fact that straw is collected in cut blocks makes the similarity even stronger) [10]. In order to increase the quality and strength, a mixed type (brick and pahsa) was used. This method was widely used not only in Khorezm, but also in Choch and Ustrushan. This method is less labor intensive than other methods.

In ancient Khorezm, the methods of laying walls from loess materials are divided into three categories: mud-brick, pakhs and combined. Raw masonry should be recognized as the earliest

of these methods. It appears in the residential walls of the settlement of Kuzeli-gyr. Pax masonry appears in the construction business, a little later - in Dzhanbas-kala. It laid the foundations of the defensive walls of the city. Only in the early Afrigid period did a certain balance and distribution of the functions of these two methods set in: residential towers were built of mud, while the outer walls were made of adobe [3]. Also, the Khorezmians brought the art of building vaults to perfection; material and technique thought out to the smallest detail. At the same time, the contour of the vault is distinguished by smooth and slender outlines, and the span reaches a significant size (on Toprak-kala 3.6 m, which is undoubtedly an achievement for a mud-brick covering). Basically, vaulted coverings were made both flat wooden and vaulted raw. The premises of the Teshik kala keshka, the rooms of the castle No. 4, probably the residential areas of Dzhanbas and Toprak kala, the front halls of the Toprak-kalayu palace had beam coverings. However, wooden structures in the construction of ancient Khorezm left almost no traces, and they can only be judged by analogy with those that still exist in folk construction techniques [3].

Conclusion. Thus, raw brick was the main building material in each historical and cultural region of Uzbekistan. The possibilities of this material were fully used by ancient builders and served as a necessary basis for creating an important form for ancient architecture. Khorezm is a country with a rich and great history. Despite the simplicity of constructions and building materials used in the architecture of this region, the buildings are distinguished by their uniqueness and uniqueness in terms of composition and volume. The reason why the monuments were built at a high level is that all possibilities of construction materials were widely used.

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