

THE FORMATION OF THE ANCIENT KHOREZM BUILDING CULTURE (IN THE EXAMPLE OF AYAZ KALA)

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Abstract. This article discusses the formation of ancient and early medieval construction culture in the region, using Ayaz Kala – one of the main architectural structures of Khorezm – as an example. It also describes the primary building materials used in Ancient Khorezm, their methods of application, and their influence on the development of architecture in later periods.

Key words: building materials, clay, adobe, Khorezm, fortress wall, Ayaz Kala, sand, graphic reconstruction

ФОРМИРОВАНИЕ ДРЕВНЕХОРЕЗМСКОЙ СТРОИТЕЛЬНОЙ КУЛЬТУРЫ (НА ПРИМЕРЕ АЯЗ-КАЛА)

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Аннотация.

В статье рассматривается формирование древней и раннесредневековой строительной культуры региона на примере Аяз-Кала — одного из основных архитектурных сооружений Хорезма. Также описаны основные строительные материалы, использовавшиеся в Древнем Хорезме, методы их применения и влияние на развитие архитектуры последующих эпох.

Ключевые слова: строительные материалы, глина, саман, Хорезм, крепостная стена, Аяз-Кала, песок, графическая реконструкция.

QADIMIY XORAZM BINOSHLAR MADANIYATINING SHAKLLANISHI (AYOZ QALA MISOLIDA)

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Annotatsiya. Ushbu maqola – Xorazm me'morchiligida asosiy qurilmalardan biri bo'lgan Ayozi qal'a misolida hudud qadimgi va ilk o'rta asrlar qurilish madaniyati shakllanishi haqida. Shuningdek, Qadimgi Xorazmda foydalanilgan yetakchi qurilish ashyolari ta'rif, qo'llanish usuli va ularning keyingi davr me'morligi rivojiga ta'siri ochib berilgan.

Kalit so'zlar: qurilish ashyolari, loy, hom g'isht, Xorazm, qal'a devor, Ayozi qal'a, qum, grafik rekonstruksiya.

Introduction. Ayaz Kala is located in the desert region of Ellik Kala district on the eastern side of the Sultan-Uvays Mountains. In the first millennium BC, this area was an oasis irrigated by the waters of the Akcha River flowing from the south. Ayaz Kala Lake, formerly considered one of the tributaries of the Akcha River, is located north of the monument. It consists of three main fortresses built between the 7th and 8th centuries[1]. These are:

Ayaz Kala 1 – a defensive fortification located on the top of a flat hill, believed to date back to the 4th or early 3rd century BC;

Ayaz Kala 2 – a feudal castle that may date back to the 6th–8th centuries AD;

Ayaz Kala 3 – It is a fortified garrison and refuge, dating mainly to the 1st–2nd centuries AD.

All three monuments were studied in 1937, in the early days of the Khorezm archaeological expedition. Excavations at Ayaz Kala 3 were carried out in 1939. The founder of the Khorezm archaeological expedition, S.P.Tolstov, who first studied the monument, provided detailed information about the construction of the monument in his scientific works[2]. In the late 1960s, Y.Manilov conducted an in-depth study of Ayaz Kala 1. As a result of his research, the building materials, dimensions, and structural elements used in the buildings were analysed in detail [3]. S.N.Agapitov, Y.A.Rapaport presented technical analyses of Khorezm architecture and construction technology of Ayaz Kala structures [4]. Also, the monuments were included in the list of candidates as cultural heritage sites of the "UNESCO Silk Roads Project" under the name "Desert Fortresses of Ancient Khorezm" (in 2008). One of the main reasons for the great attention paid to the monument is that the construction of its constituent buildings covers different periods of development and activity. Therefore, Ayaz Kala is of great importance in the

formation of the ancient and early medieval architectural culture of Khorezm and the style characteristic of the region.

Purpose. According to research, the monuments of Ayaz Kala date back to the 4th–1st centuries BC and the 1st–8th centuries AD, providing examples that provide in-depth information about its building materials, structures, and cultural significance, further demonstrating its role in the formation of Khorezm architecture. The raw brick and baked brick used in Ayaz Kala were selected in accordance with the specific climate and natural resources of Khorezm. For example, raw brick was used in the construction of Ayaz Kala 1, the dimensions of which were usually 40x40x10 cm [8]. Such bricks were dried in the sun, and depending on the location, almost all walls were restored with this material. The construction techniques made of raw bricks found during excavations at the monuments indicate the connection between social and cultural spheres in architectural architecture. For example, the walls were double-layered, with a mixture of sand and earth placed between the outer and inner layers, and a portico construction was used in the corridor between the fortress walls[3]. The main purpose here was to enhance protection and insulation.



Figure 1. General view of Ayaz Kala I and Ayaz Kala II. Photographs by the author.

Ayaz Kala consists of three monuments, each with its own unique features. Each of them reflects the architecture and defence systems of different periods. For example, Ayaz Kala 1 (Main Fortress) is the largest and most important of the Ayaz Kala. It is located in the upper reaches of the Amu Darya and occupies a strategically important place. The fortress has its own strong walls and gates, the walls of which were very thick, from 2.2 to 2.5 m (sometimes almost 3 m) [2] (Fig. 1). In most cases, two the walls were filled with a mixture of sand and soil. The towers were built for military and defensive purposes, with semi-circular or right-angled corners. Ayaz Kala 1 was located on a high, flat hill, which also served as a natural defence. The rooms were relatively small, and the ceilings were not high to ensure air circulation inside. The ceilings were often reinforced with wooden elements with a column-beam structure. The main entrance had a complex system, built in a way that ensured that attackers would not be hindered [3]. The castle had two large gates, each based on different defensive systems [2]. Entry and exit processes were

controlled through these gates, that is, they played a major role in protecting the areas around the castle. The castle area was small, but very strong and served as a defence. The defensive technologies and approaches used by this castle were typical of its time.

Ayaz Kala 2 (Small Castle) is smaller and was built near the larger castle, but as an additional defensive system in the early medieval period to protect it. The uniqueness of Ayaz Kala 2 is that its structure was used more for defensive purposes. Although small, it has thick walls and specific structures designed to protect villages or local areas, and the castle had watchtowers and defensive walls built in a clear way. Despite the smaller size of the castle, its architectural strength and defensive systems played an important role in its time.

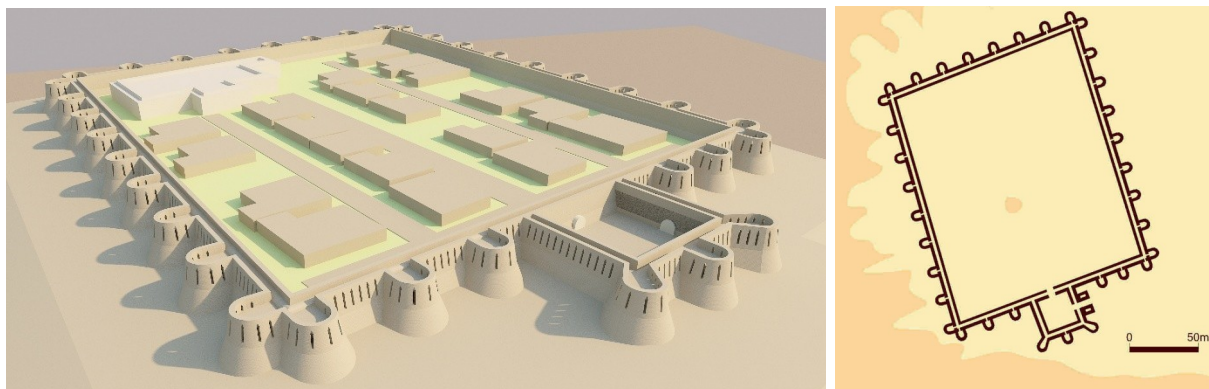


Figure 2. Author's graphic reconstruction of the general view of Ayaz Kala 1 and plan (from book of Bendakir M., Gandreau D. Practical training workshop on conservation of earthen structures in Central Asia and Afghanistan and Preventive conservation work. pp. 22.)

The last, Ayaz Kala 3 (Fortress of Memories), is usually the third, smallest and most distant part of the Ayaz Kala system. It was probably used for additional protection of the area. Despite its architecturally less developed nature, Ayaz Kala 3 is of great historical importance, since it was distinguished from the rest of the forts by its high strength. The outer walls of Ayaz Kala 3, depending on the state of preservation, have a foundation height of 2 to 2.2 m, and the foundation structure is not uniform. From the inside, a 2 m wide wall is attached to its main mass. The width of the foundation of the fort wall is 9.5 m, later, the brick walls of the inner corridor were built on this foundation [5]. Many castles a mudbrick corridor inside the wall can be clearly observed along almost the entire perimeter of the defensive walls. In the southern part of Ayaz Kala 3, the walls of the 3 m wide corridor are made of mudbrick measuring 40 x 40 x 12 cm (39 x 40 x 10 cm; 42 x 40 x 12 cm)[5]. It follows that, The fortress had a strong defensive system, forming a defensive network connected to the two previous fortresses. There were connections between the fortresses, which were used to strengthen each other. This fortress system was probably used as an additional defence or observation monument. Its structure is less developed compared to other fortresses, and over time it has gained value as a monument.

Results. Thus, the construction technologies and building materials of the Ayaz Kala are important cultural heritage, not only as an architectural monument of that era, but also influenced the formation of the architecture of subsequent periods. All Ayaz Kalas are based on a defensive system, they were one of the central defence points in their time. Wide walls, gates, towers, bastions and various defensive elements made these fortresses strategically important. The main purpose of the Ayaz fortresses was to protect the territory, manage and control the surrounding lands. Each fortress, with its own place and function, played an important role in the historical period.

The Ayaz Kala occupies an incomparable place in the formation of ancient Khorezm architecture, in terms of its construction methods, art and social significance. Through this monument, we can study the social and cultural life of Khorezm, as well as how architectural traditions developed. However, by now, due to climatic conditions, time and human influence, the building has lost its original appearance, even its appearance at the time of archaeological excavations. Therefore, creating its graphic reconstruction will not only give an idea of its original appearance, but also greatly help in studying the artistic compositional solution of the building, which arose under the influence of the building materials and structures used in it. All information is easily perceived due to the integrity and clear concentration of the image[6]. Therefore, the article proposes a graphic reconstruction of Ayaz Kala 1 using the data collected as a result of the research conducted by S.P.Tolstov, Y.Manilov, S.N.A.Gapitov, Y.A.Rapaport (Fig. 2).

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