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DEFENSIVE STRUCTURES OF ANCIENT HISTORICAL CITIES OF CENTRAL ASIA

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Abstract:
This article systematically analyzes the origin, development, and architectural and engineering features of defensive structures integral to the ancient historical cities of Central Asia. The study provides a comparative study of the unique defensive systems of the oases of Sogdiana, Bactria, and Khorezm. In light of the improvements in military defense, the reasons for the development of the architecture of city walls, towers, moats, and arches constructed of pakhsa and mud brick are explored.

Keywords: Central Asia, defensive structures, pakhsa, mud brick, fortress, tower, Erkurgan, tower, Ayozkalya, Afrosiyob, architecture.

Annotatsiya:
Ushbu maqolada qadimgi O‘rta Osiyo tarixiy shaharlarinig ajralmas qismi bo‘lgan mudofaa inshootlarining vujudga kelishi, shakllanishi va me’moriy-muhandislik xususiyatlari tizimli tahlil qilingan. Tadqiqot davomida So‘g‘diyona , Baqtriya hamda Xorazm vohalarining o‘ziga xos mudofaa tizimlari qiyosiy o‘rganilgan. Paxsa va xom g‘ishtdan barpo etilgan shahar devorlari, burjlar,minoralar xandaqlar va shaharga kirish - arklar arxitekturasining shakllanish sabablari harbiy himoyalanish takomillashuvi bilan bog‘liq holda yoritilgan.

Kalit so‘zlar: O‘rta Osiyo, mudofaa inshootlari, paxsa, xom g‘isht, qal’a, burj, Erqo‘rg‘on, minora, Ayozqal’a, Afrosiyob, me’morchilik.

Аннотация:
В данной статье систематически анализируются возникновение, формирование и архитектурно-инженерные особенности оборонительных сооружений, являющихся неотъемлемой частью древних исторических городов Центральной Азии. В ходе

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исследования сравнительно изучены уникальные оборонительные системы оазисов Согдианы, Бактрии и Хорезма. В связи с улучшением военной обороны освещаются причины формирования архитектуры городских стен, башен, рвов и арок, построенных из пахсы и глинобитного кирпича.

Ключевые слова: Центральная Азия, оборонительные сооружения, пахса, глинобитный кирпич, крепость, башня, Эркурган, башня, Айозкаля, Афросиёб, архитектура.

Introduction

Central Asia is one of the cradles of ancient civilizations, famous for its urban culture, agricultural oases, and large states located at the crossroads of the Great Silk Road. The city-states and settled settlements that emerged over the millennia of the region's history were constantly under threat of attacks by nomadic tribes or invasion by neighboring states. Therefore, an integral part of the ancient Central Asian urban planning was defensive structures. They consisted of strong walls, towers, moats, and arches (fortresses) surrounding the city , and performed not only a protective function, but also a symbolic sign of statehood and the role of a socio-political center.

Formation and historical stages of defensive structures. The history of defensive structures in Central Asia dates back to the times before Christ. Researchers divide the development of this defensive system into several main stages : The area of Sopollitepa is about 4 hectares, and the central part consists of a square-shaped fortress (82×82 meters). The residential areas are built in a corridor-like system on a strict plan, surrounded on the outside by three rows of thick defensive walls.

Picture-1.Sopollitepa .
https://storage.academy.uz/source/1/news/photo_2025-08-22_15-31-53.jpg

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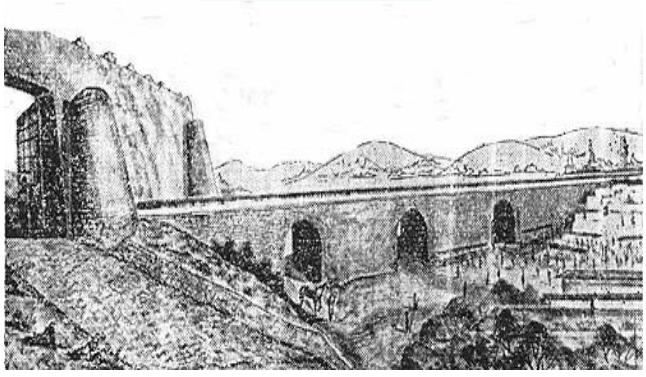
Dashli-3 - this monument complex is distinguished by its unique and unusual architectural structure. It consists of a monumental temple of a circular shape (surrounded by thick walls and three rows of defensive walls) and adjacent rectangular buildings. Both monuments are unique objects that shed light on the stages of the formation of the first urban culture in southern Central Asia, the connection between Central Asian and ancient Eastern civilizations.

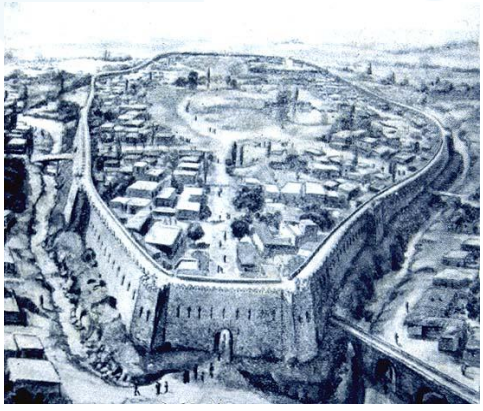
The Dashli-3 monument includes two monumental structures. One of them is called the circular temple (diameter 35 m), which is separated by three rows of defensive walls. The circular fortress consists of one main building in the center and several fence-like structures, and we can see that the corridors around it are divided into networks. The Dashli-3 palace, which is considered a monumental structure, has a complex cross-shaped structure and is surrounded by a wall . In its central part, there are several buildings, including a large warehouse structure with a grid-like appearance measuring 40 x 38. The walls and floors are covered with plaster, and the presence of T- and G-shaped corridors for entering the building gives it a solid appearance.

millennium BC: The monuments of Sapallitepa and Dashli-3 (Bactria) in the Surkhandarya oasis are among the first fortifications surrounded by defensive walls. They were built in a rectangular shape, with a double defensive wall and complex labyrinthine entrance corridors.

Antiquity (6th century BC - 5th-6th centuries AD): During this period, large city-fortresses were formed in the territories of Khorezm, Sogd , and Bactria. These include Afrosiyob (Samarkand), Erkurgan (Kashkadarya), Koykirgan and Ayozkal (Khorezm). The defensive systems of this period are characterized by thick walls that could withstand the enemy's heavy military equipment.



Picture 2 - Afrosiab structures
https :// depts . Washington . edu / silkroad /cities/uz/samarkand/samark12.jpg



Picture 3 - Afrosiab
https :// depts . Washington . edu / silkroad /cities/uz/samarkand/samark13.jpg

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Figure 4. The castle with the boats. Figure 5. The castle with the ice .
https://www.meros.uz/object/qoyqirilgan-qala https://uz.wikipedia.org/wiki/File:Ayaz_Kala

Early Middle Ages (6th-8th centuries): The "Kanpir Wall" (Devori kanpirak) system developed in the oases of Sogd and Bukhara. This was a system of huge, long walls that protected entire oases from nomadic attacks, and the defensive line surrounding the Bukhara oasis stretched for more than 300 kilometers.

Academician Ya. G. Gulyamov, was that in the late 1950s and early 1960s, when the Old Wall had not yet been seriously damaged by industrial construction and agricultural development, he managed to gradually outline and, in some cases, determine the various lines of three walls, each of which was chronologically different from each other and, accordingly, built at different times.

In general, the moat wall (Kampir Wall) was found to be about 330 km long. Every 300 meters of the wall length there were watchtowers, and every 4-6-8-10 km there were ruins of ruined fortresses and traces of gates. The researcher also believed that most of the military fortresses within the wall fortifications were fortified military barracks or rabotas built at the gates connecting the oasis with the steppe along trade routes . They were surrounded by strong walls and guarded by guards - ghazis, fighters for the faith.

As a result of the work carried out to determine the structure of the wall, a total width of 12-14 meters and a height of about 2 meters were preserved. To save labor, time and money, in most cases the structure was built from two parallel lines of walls, each 3-4 meters wide and 6-8 meters apart, which were then filled with brick fragments, gravel and sand.

During the research, among the few finds, fragments of pottery, rare coins, and metal objects dating back to the 5th-6th and 8th-9th centuries were found, which archaeologically confirmed

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the general opinions of scientists and the source data about the date of construction of the structure.

Architecture and engineering of defensive structures. Ancient Central Asian defensive structures were built mainly from local raw materials - pakhsa (compacted earth) and mud brick. These materials were extremely durable in a dry and hot climate, and they withstood earthquakes and enemy attacks well.

Walls and moats: City walls were usually thick (sometimes up to 5-10 meters) and high. At the base of the walls were wide and deep ditches, often filled with water. This measure prevented the enemy from digging under the wall and entering.

- In ancient and medieval times, castles and fortifications were the only defensive systems built to protect cities from enemy attacks. They played a crucial role in preserving territories and regulating socio-economic life throughout history. High and strong structures that protect castles and cities from enemies, as well as marking the city's borders. Historically, they were built of mud (baked clay), mud brick, baked brick, and stone. On the top of the walls were a series of slits (windows) for warriors to stand in, as well as towers (towers) for guarding and observation. Protecting defensive walls from enemy cavalry and combat vehicles (e.g. battering rams) deep and wide artificial paths dug in front of the wall to make it difficult for the enemy to pass. The ditches were filled with water to keep them dry or to make it difficult for the enemy to pass. Sometimes sharp stakes were driven into their bottom. In historical sources, ditches were usually several meters deep and wide (for example, in the Bosporus defense system, the depth of the ditch reached 3.5 meters and the width reached 34 meters). The walls and ditches complemented each other: the soil obtained as a result of digging the ditch was used to build the wall, and the ditch itself made it almost impossible to approach the wall. Their remains are clearly visible in the ancient urban planning of Uzbekistan (in particular, in ancient settlements such as Khorezm and Akhsikent).

Towers: Rectangular, circular, or semicircular towers were erected along the walls every 20-30 meters. The towers served as a long-range observation point for warriors and a place to fire arrows at enemies approaching from the side.

Loopholes and galleries: Special loopholes (holes) were left at the top of the wall or in its inner corridors (galleries) for warriors to shoot from behind. Loopholes were often diagonally shaped, wide on the inside and narrow on the outside.

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The Archaeological Expedition of the Khorezm Mamun Academy during archaeological research at the Qalajiq Fortress monument uncovered and studied the defensive walls of the monument. During the research, The oldest part of the wall, dating back to the 4th-3rd centuries BC , was explored. A passage between two rows of walls was opened. The bastions, which were a means of protection for the outer wall, were opened and studied.

At the end of the expedition, the exposed defensive walls were preserved with straw plaster. During the research, a number of fragments of ancient pottery, iron bow and arrowheads, and wooden remains were found.

Figure 6. Qalajiq Fortress Monument https://www.academy.uz/en/page/word/kohna-qalajiq-qalada-yangi-topilmalar

Gates and arches: Since the entrance to the castles was considered the weakest point, the gates were protected by special two-sided towers and defensive corridors (labyrinths). In the center of the city was the ruler's palace and the "Ark" (inner fortress), which was considered the last point of defense in case of danger.

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Regional features and famous castles

1. Ancient Khorezm architecture: The Khorezm region is world famous for its fortified fortresses. Even in the sacred book of Zoroastrianism, "Avesta", Khorezm is described as a "high-walled, fortified city". Monuments such as Ayozkal'a (1, 2, 3), Tuproqkal'a and Jonbooskal'a, built in ancient times, have been preserved here. The walls of Ayozkal'a have not lost their grandeur even today , and due to their location on a slope, they were very convenient for defense.

2. Sogdiana and Bukhara defensive system: Ancient Morocco (Afrosiyob) was surrounded by multi-layered defensive walls in the 6th-4th centuries BC, and offered great resistance even during the campaigns of Alexander the Great. The Kampirdevor system in the Bukhara oasis is a huge engineering structure that served to preserve an entire farming culture.

3. Bactrian fortifications: Bactrian cities located in the upper reaches of the Amu Darya (e.g., Kyzyltepa, Dalvarzintepa) embodied the traditions of Eastern and Hellenistic (Greco-Bactrian) military art. Here, special two-story defensive corridors were built inside the walls.

Evolution of the defense system

With the passage of time and changes in military tactics, defensive structures also improved. In the early periods (Bronze and Early Antiquity), walls were hollow, with internal galleries, but later (around the Middle Ages), as a result of the development of the enemy's wall-breaking battering rams and heavy stone-throwing weapons, walls began to be built entirely of cast iron, in the form of solid blocks filled with mortar.

Conclusion

The ancient city defense structures of Central Asia testify to the high engineering, military strategy and architectural skills of the peoples of the region. These fortifications not only protected the cities from military threats, but also ensured the stable continuation of settled agriculture in the oases, international trade and cultural life along the Great Silk Road. The ancient fortresses of Khorezm, Sogd and Bactria are still considered the rarest monuments of world cultural heritage today.

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