

SARDOBA IS A UNIQUE "SOURCE OF LIFE"

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ABSTRACT

This article covers the issues of the emergence, architecture, the use and the restoration of the SARDOBA - man-made water reservoirs, representing special medieval hydraulic structure and material culture of the past as well as their modern use as objects of tourist sites.

KEYWORDS: *Sardoba, Hydraulic Structure, Dome, Water Reservoir.*

INTRODUCTION

"Without the past there is no future," the proverb says. It is difficult to disagree with this indisputable truth, who has been thinking: "You do not know the world, not knowing our history."

Ancient legend says: "The caravan with a high-ranking official stopped in the steppe for the night. At night, when the official went to bed, the faithful servant, as usual, guarded his sleep. And over the headboard, the official put a bowl with water as well as the knife and fell asleep, suddenly flies flew, went around the bowl, passed through the knife, spoiled sleep and woke him up. Waking up he told the servant that in the place where he slept the wealth of gold was buried. The servant thought over the words of his master as he speculated such dreams were sacred and pretended to be ill in order to test his guess-work. [1]

The owner, believed his servant, like himself, and the servant was devoted to his owner, so I left him food, water and went on, offering to join the caravan after his recovery. The caravan went on the road and servant remaining at the place of overnight stay, he kept digging until he found the jugs with jewels and he built a reservoir of water in this place - Sardoba. "



Picture 1. View of the usual sardoba

Construction and architecture of the Sardoba.

The design of the Sardoba is a complex engineering and architectural structure. Hauz - a hemispherical pool with a stone staircase leading down. This construction consists of several basic elements - input, water tank, descent to water and ventilation system. In the plan - at the sight of from above, Hauz has an ideal round shape. This form is necessary for the construction of the right domes-Ghumbaz over the Hause. Hauz was plunged into the ground so that there was a natural way to flow and defended fresh water. [2]

Hauz overlapped round in terms of Gumbaz dome, usually had the form of the right hemisphere. Then Sardoba combined the functions of the warehouse of water and caravan shed. On the gallery it was possible in the shadow of Ghumbaz to hide from the scorching heat in the afternoon or lie down for the night. However, in different historical epochs and in various localities Ghumbaz also had engineering and architectural different relations, apparently, satisfying the tastes of the customer or the design of the architect and builder.

Dome-Ghumbaz Karaulbazar-Sardoba near Bukhara in the steppe Urtachul was separated from the inside of the tiles, for which the Sardoba was called the "Palace". The Sardoba was given one or more inlets. Sometimes the main entrance was represented by a monumental solemn portal. In the upper part of the dome, there was usually a small round hole that served for ventilation of internal volume and natural lighting. Some dome had made in the form of small brick turrets. [3]

Often, the sardobas were constructed on the land trading paths as well as caravan-houses to meet the need for water for humans and animals. Sardoba was filled with rain and thawed waters, sometimes waters from canals or streams, often they were constructed on the way of following the underground channels.

The Great Silk Road in some of its sections is obliged to existence exclusively to Sardoba. Sardoba was already known in the X century. ad. In dry steppes, semi-desert and desert areas of Central Asia, very often Sardoba was the only source of water. In some places, trading caravanways without a system of SARDOBA, located along the path, could not exist at all. In view of this, sardobas were regularly repaired, the pools were cleaned, and if necessary, they were guarded by armed detachments. According to the uncommittable custom, water from Sardoba has always been used for drinking only after boiling.

Architecture and construction of the Sardoba.

Sardoba had a very complex design both in engineering and architectural structure. Rich and diverse technology was applied for its construction developed and proven for centuries in practice. The construction of the Sardoba was an expensive structure and a place for its construction was chosen very carefully. Sardoba was usually placed in the lowland, where the natural clay surface was flocked by melting and rainwater. Often, without disturbing the waterproof layer, the extended shallow channels were dug, the network of which was discharged all the collected precious water in Hauz under the dome of the Sardoba. Sardoba - Hauz is usually a semicontulus-shaped capacity, in-depth to the ground up to 3-5 meters. In the plan - this is a circle with a diameter of 12 - 15 meters. The thickness of the wall was - up to 1.5 meters.

In the daytime the dome with the turret was an excellent landmark in the desert. At night, the lights could be lit in the turret - the lights - the oil lamp as a beacon for moving at night caravans and trails. The gallery of the pool with water lined up the gallery. They rested on the gallery, ate food, spent the night, have worried about the day heat. The whole structure was covered with a hemispherical dome, which protected the water from evaporation and gave a saving shadow during the daytime, because the desert traveled most often at night, when a merciless scorching sun went beyond the horizon.

For the construction of the Hauz, the gallery and domes, the material was specifically and thoroughly selected from special clay, weathered and burned brick on fire. The formulation of clay and its components, the technology of dressing was often a secret of professional masters. (Pic. 1) The construction of the Sardoba lasted 5 - 7 years under the supervision of the master. Master was both an architect, and engineer, and builder, and a technical leader of construction.

The water tank (Hauz) is a hemispheric shape container with a 3-5 m. Its walls were lined with a special waterproof brick with high thermal insulation properties. One building required 400 to 600 thousand bricks. A special clay for them was mined in the lower reaches of Amudarya, ancient times, and appreciated its heat-resistant, waterproof, thermal insulating properties. Its composition was dependent on local geographical and climatic conditions and included in certain proportions of sand, lime, egg protein, clay, goat wool and ash. The thickness of Sardoba walls could reach 2 meters. Immediately, mixture for molding was not allowed, it was kept for a long time. The molded brick was "fried" up to the year in the sun. And if the finished brick was not cracked and did not change the form, it was sent to the fire. After the firing again bricks were sorted out strictly according to their sound, form and other qualities. Only carefully selected brick was recognized as suitable and was filed for construction. The masonry solution was kneaded on water with the addition of sheep milk on camel wool. Thus, the bottom and walls of the Hauz, the circular gallery and the dome were steady and extremely durable. Just a few people worked over it. It was not advisable to hurry on such objects, realizing that hasty is the enemy of quality. But it was about the life of the city, which depended on the reliability of the storage of water.

People did not have direct access to the minimization water pollution. In terms of ventilation Hauz is completely closed in relation to the external environment. To maintain hygiene, the walls were deceived by a special salt solution, which forms an insulating layer on the aqueous surface.

Water has never dug from the surface, but only from the depth of the tank. Surdoba's condition was regularly controlled. In addition, it was cleaned every year.

The ventilation system was an important element of the sardoba. It helped to avoid stagnation of air, helping to keep water clean, transparent and cold. In the arid areas of Iran, the Sardoba was often equipped with wind towers. For example, such salts in large quantities are found in Yazd.

Sardoba generally was the only source of drinking water of travelers and passing caravans. For the winter and spring, the sardobas could collect more than 20 thousand cubic meters of water in the desert. According to historical data, there were 44 sardobas in Maverannah. Of these, in the Karshi steppe - 29, in the steppes of Mirzochul - from 3 to 6, in the vicinity of Fergana and Tashkent - 3 and in Karmana - one sardoba. The sardobas in Bukhara, Karaulbazar and other cities and villages are preserved, one of which is located in the Navoi Oasis, on the Great Silk Road, which goes through Rabati Malik to the city of Karmana.



Picture 2. Semi-underground Sardoba has a caravanserai.

Sardoba offered a traveler to drink water from a unique reservoir near the city in which wonderful masters lived, able to accumulate water where it seems to be almost impossible to do it. In Navoi region, 339 historical monuments were registered, of which 38 are protected by the state. Sardoba is one of them.

Sardoba - a hydraulic architectural structure of domestic purpose in some areas of Turkey, Iran and Central Asia; dug to the ground and covered with a stone arch pool - for the collection, storage and use of fresh drinking water. The arch or ghumbaz above the pool prevented a significant evaporation of water, to a certain extent, protected from dust and sandy storms, created a permanent shadow. Water in such storages remained cold in the most sophisticated period of the year. If the gallery was located around the Hauz, then the sardoba served as a place of rest and sleep in the shadow under the vaults of the dome. In the cities and villages sardobas were located on large squares and in the Palaces of rulers.

For a long time Abdullah from the Sheibanid dynasty ruled the country on behalf of the Father - Khan Iskanderkhan (1560-1583). After his death, Shabanid Abdullah was officially proclaimed

Khan and became known in Uzbek history as Sheibanid Abdullakhan II (1583-1598). The widespread construction of the SARDOBAS were carried out during his reign.

The boundaries of the state significantly expanded, the economy stabilized, the conditions were created for the development of agriculture, crafts, internal and foreign trade. The construction of numerous caravanserais and sardobas throughout the territory are connected with his name.

A wide trade with Russia has developed, primarily cotton fabrics. The developed road network of the Bukhara Khanate is described by Russian military engineers. [4] The network of commercial roads, taking the most remote areas of the country, joined the cities subject to him with the shopping centers of Afghanistan, India and Iran in the south, rich cities in the Valley of Syrdarya in the north, nomads of Kazakh steppes and Siberia. These were both permanent trading roads and many of their seasonal branches.

Great work was carried out under Abdullakhan II on the improvement of commercial roads. The state guaranteed the safety of the caravan movement throughout the country. Trade caravans belonging to the feudal tip usually consisted of several hundred camels. A lot of foreign merchants - Persians, Arabs and Turks went to Samarkand and Bukhara. In Bukhara, there was a special quarter of the money-changers and Hindu-merchants. The markets of Bukhara and Samarkand were also visited by Europeans. [5]

Trade routes could not exist without sardoba - permanent storage facilities for fresh drinking water. A. Burns, during a trip in the middle of the XIX century, recorded a folk legend that Abdullakhan, having performed the Hajj to Mecca, returned from there with the conviction that he was not pleasing to Allah. Hoping to earn his favor, he began building caravanserais and sardobas in all parts of his domains. According to one document, during his reign, 400 sardobas were rebuilt and restored, according to another - 1000. [6] Usually, sardobas were built on the places of halts, and rabats or caravanserais - on the places of overnight stays. Some rabats had their own sardoba.

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