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OPTIMAL FORM FOR DRY-HOT MODERATE CONDITIONS

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Abstract. The article proposes the principles and model of creating a volumetric and internal spatial microclimate solution that allows the study of traditional national forms in the design of buildings for desert zones and while selecting should be paid attention to their resistance to external environmental influences.

The future city appealed to social ideas, followed their natural-climatic, volume-spatial factors, and (time) was considered on the examples of multi-story cylindrical complexes on the basis of centuries-old world practical experience. At the same time, we look through the optimal forms preserved for a long time.

Keywords: hot climate, ecology, external influences, temperature, shape.

Introduction. Given that the climate of the desert zone is very severe, summers are hot and winters are very harsh, it is necessary to choose the exact optimal forms for countries with such climates. In the scorching heat, hot air enters the building with the wind, causing inconvenience and heating the indoor air unbearably. This interferes with people's ability to live, relax, and reduce performance.

Considering the question of improving the climate in the hottest conditions of the room, it is necessary to take into account the human body temperature. Average thermoregulation is carried out at a body temperature of 36.50 C -37.50C. On hot summer days, when the normal temperature is around 33C, warmth of the environment is delivered to human through the skin. When the air is hot and there is a lot of dryness, a person's skin thickens, thus complicating the body's thermoregulation. [1, p. 88]

It is recommended to follow the next principles of the above-mentioned problems:

- selection of the optimal form to create an indoor microclimate
- creation of a moderate air reserve in the internal spatial solution relative to the external extreme environment;
-have a temperate climate through shape.

Based on the proposed principles, it is recommended to bring the following model to the spatial solution:

- Solutions to create a spatially moderate air supply: heat retention through the form in the building

-creation of a moderate atmosphere in the building and the possibility of air exchange through the created internal environment;

- based on our traditional values, choose a form that allows you to maintain the same cool or warm air, regardless of the function it performs.

At the same time, the properly chosen shape serves to create favorable conditions for people to live (rest, work) and allows you to save on extra costs through the form, i.e. to keep the indoor heat or cool air in the summer heat.

The main part. The tandoor, causeway dam, yurt and old towns inherited from our ancestors are still used in people's lives. We know that the shape of the oven is circular, the shape of the cylinder is slightly elongated, the reason for this is that the oven is heated to bake bread and retains heat for a long time, if desired, it is possible to cool it down immediately.

At the bottom of the oven, there are holes on all four sides, and when the oven is heated, the windows are covered with bricks so that the internal heat does not escape.

For cooling, these windows are opened and cooled quickly. That is, the hot air inside enters the building through the windows and leaves the open space at the top.

Yurts are an ancient settlement of the ancient Turkic and Mongol peoples, and it has left its mark on the history of these peoples with its comfortable settlement.

It was inhabited by humans and is still used by some nomadic peoples. The shape of the нгкe is round and has a window at the top. Inside, there is an oven in the center, through which smoke and odors of prepared food are emitted through the window.

The doors of the fireplace were at a very low altitude, the reason being that if a large door had been built, the moderate air inside would have been blown out. Therefore, the aim is to prevent the ingress of cold air from outside in winter and the ingress of hot air in summer. Because in the winter, if the cold air that came in through the door cool the now-heated yurt, they would have to reheat it, which shows that the height of the doors is also very important.

The material of the yurt is wrapped in felt on the outside, and on the inside it is made of a folding structure made of straw. If you notice, there are no windows in the yurt. In the summer, in the scorching heat, a curtain woven from the interior straw is collected and the underside is opened and provided with natural ventilation.

Causeway dams known to us. From the 16th century onwards, caravan routes were so well-maintained that on all three stops (24 km) there was a causeway dam courtyard, which was always on duty to accompany the caravans and provide trade security.

Travelers on long journeys from Balkh, even Peshawar to Bukhara or Khiva, did not even take a day's worth of food with them, as they received large quantities of food from the stations where they stopped to rest. Thus, the camels were free from overload. [2]

Sardobas, or reservoirs, are shaped like a tandoor and have a circular shape like yurt. The purpose of choosing this shape is to keep the water stored inside cool, i.e. if the tank is 500 C hot, the inside can be about 250 C. The dams also have holes in the bottom, like a tandoor. The circular shape was chosen by our ancestors to maintain the temperate climate of the interior.

Coliseum. The Coliseum is situated in the capital city of Italy in Rome and has the shape of an ellipse, reaching a length of 188 m and a diameter of 156 m. The height of the walls was almost 50 m. On the outside, the Coliseum is surrounded by three-story arcades, with holes in the arcades decorating the statues.

The amphitheater became the largest circus in the empire, with a capacity of 70,000 people. There were served 80 first-class arches for spectator entry according to the number of sectors. Through them, spectators enter the amphitheater, from where they ascend to their seats via stairs. This system of dividing the stadium into sectors is still in use today. The crowd in the first-floor galleries disperses in their circles and make their way up the stairs.

Under the Coliseum arena there are many ancillary buildings - the remains of complex engineering structures, mechanical lifting structures of the landscape are still preserved. [3]

There was a culvert that could flood the arena and turn it into a pool. The basement rooms also had animal cages, gladiator rooms and a weapons store. The Coliseum was undoubtedly an architectural and engineering marvel of those times.

The Coliseum is a large-scale structure located in the center of the city, its shape is chosen from the urban point of view, the circular shape was chosen because the flow of people in the city center is very large. Because through this form, convenience is created for the flow of moving people. That is, the form is considered very optimal from the point of view of urban planning, in addition to external environmental influences.

Koy-Kirilgan-Qala. These are the old structures of Khorezm, located northeast of the city of Turtkul in the Ellikkala district of the Republic of Karakalpakstan in Uzbekistan. Thousands of castle ruins are scattered in the vast expanses of the Khorezm steppe, but the ruins of the dead sheep castle-Koy-Kirilgan-Qala are truly unique. The castle was accidentally discovered in 1938 by archeologists of the Khorezm expedition. Archaeologists were first and foremost amazed by the unprecedented shape of the

ancient building in Khorezm: the mighty fortress, with the remains of a defensive wall, turned out to be round rather than rectangular or square as before. It had a castle in the center, and the fortifications on the outside had the shape of a straight circle, surrounded by an outer tower wall. The space between the central building and the wall - the 'circle', as it is conventionally called - turned out to be fully built.

The soil structure was huge: the diameter of the central building was 42 m, the height of the best preserved part was about 8 m, and the diameter of the whole building was about -90 m. [4]

Koy-Kirilgan-Qala was a strong, fortified fortress with several defensive walls, which were destroyed over time, and they could only be observed in a small area. Such fortification is typical of all monuments of antiquity and the early Middle Ages of Khorezm.

The diameter of the cylindrical building is 44.4 m. At a distance of 15 m from it you can see the remains of ancient walls with a thickness of 7 m. In ancient times, in the space between the building and the walls there were residential buildings. The fact that the castle has survived to this day is thanks to, firstly, its circular shape, and secondly, its high position compared to other buildings. The shape is resistant to strong winds, does not contain sand and dust, and acts as a barrier.

Ponte City. The 55-story round-shaped skyscraper, the tallest apartment building in Africa, was built in 1975. The skyscraper had six penthouses with saunas where rich people could live. The height of the 55-storey building is 173 meters.

Because the building is round in shape, daylight falls on the building from the inside as well. The building has 8 elevators. Middle class people are living here now. The building shape is an optimal option for the hot climate of Africa. That is, if this form is used for multi-storey buildings, it would be appropriate. [5]

A round-shaped multi-storey residential building built in Moscow. In order to create the dominance of the city, 5 dwellings of this type were to be built, but since there were two small lakes and a railway station in the area chosen for the construction of the building, only one was built and the other one was built in 3.2 km away. The diameter of each dwelling was 155 m. The purpose of choosing the shape of the circle was to make changes in urban planning because rectangular and one-type projects look boring . On the first floor of the building there are community buildings, such as a pharmacy, a post office, a clerk's office and many other public facilities. The construction is prefabricated, so the building was more expensive.

There is a sports zone and a car park in the yard of the residential building. At the bottom of the building there are arches for parking. On the one hand, they allow natural

wind to enter the building. The apartment building was built in the 1970s, the balconies were designed in an open form, and later the residents themselves covered it with windows. Despite the passage of half a century, the form has not lost its status and is considered to be a unique building of that period. [6]

The trees in the courtyard of the apartment building have maintained their green appearance without drying out despite Russia's cold climate. Of course, the shape had an effect on this i.e. it protected the trees and the yard from the cold outside.

The final part. The shape of these studied structures has its own characteristics and is resistant to various climate changes. That is, the outer shape of everything is circular, closed and semi-closed. Buildings of this shape also act as a shield in addition to the external climatic influences, and if such a form is used for housing, it is protected from the outdoor environment, comfortable to live and saves money on heating or cooling. In short, for both hot and cold countries, this form is showing its essence, and it is safe to say that this form is justified.

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