




ORGANIZATION OF THE INDIVIDUAL YARD LANDSCAPE IN ARCHITECTURE OF KHIVA CITY (UZBEKISTAN)

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ABSTRACT

This article is dedicated to the analysis and recommendations for the solution of a number of landscape problems related to architecture in Khiva city. In particular, the advice is given on the use of methods such as "Chor-minor", "Chor-bag", which had existed in the Middle Ages.

KEYWORDS- traditional houses, green areas, gardens, landscape, protection, waterways.

I. INTRODUCTION

Khorezm is one of the ancient regions with a very rich history. In the past, the territory of Khorezm was much larger than today, covering a certain part of the territory of Turkmenistan and the Republic of Karakalpakstan. Khorezm is bordered by the Aral Sea to the north, the Kyzyl-Kum Desert to the east, the Karakum Desert to the south and southwest, and the desolate Ustyurt Desert to the northwest. The largest river in Central Asia, the Amudarya, flows along the south-eastern and north-western sides of the Khorezm region. Thus, Khorezm differed from other regions of Central Asia in that it was surrounded on three sides by deserts. Such a geographical location influenced the lifestyle and culture of the Khorezm population. Rural houses are the complete architecture of residential buildings and the unique environment of the living environment cannot be ensured without taking into account the territorial natural-climatic aspects. At the current stage of architectural development, the urgency of this problem is increasing day by day in connection with the protection of the environment and the growing aesthetic demands in society. Khorezm oasis is characterized by its dry and hot climate, temperature, winds, humidity, radiation, insulation, ventilation, lighting and landscaping are important

factors in the climate of this region. Compared to other regions of Uzbekistan, the climate of the Khorezm oasis is much (sharply changing). The Khorezm oasis ranks second in global warming after Termez.

II. VENTILATION IN TRADITIONAL HOUSES

The Khorezm oasis belongs to the first zone, which in turn requires the organization of housing on the principle of "three-dimensional spatial structure" and the protection of the living environment. This principle is reflected in the organization of the inner courtyard; such an enclosed courtyard serves as a means of collecting cool air in the summer. The main advantage of an indoor courtyard is, of course, that the flat building is protected from the scorching heat in the summer. The microclimate function of an indoor courtyard can be understood in two ways. First, the constant cool weather of the indoor yard creates good conditions for all members of the family to do housework and relax during the hot summer season. Second, this spacious indoor facility directs cool air to all the rooms around the courtyard and allows you to maintain a constant microclimate inside.



FIGURE 1. TRADITIONAL "TARS AYVONLAR" (INVERTED AWNINGS) IN ANCIENT KHOREZMIAN ARCHITECTURE

The speed of air flow in this oasis depends on the nature of the polygonal surface plane. The speed of air flow around (around) the country is higher than at its centre. At the same time, the wind is weak in the central part of the country, but its vibration amplitude is relatively low. Based on the research, the width, height and length of the building, the slope of the roof, the orientation of the building and the number of windows in it, the canopies and awnings affect the speed of air flow. The Khorezm oasis is one of such elements of traditional houses - the installation of umbrellas on the high places of the porches [1].

These umbrellas create good conditions to hold the wind and allow the wind to pass directly to the bottom of the yard (Figure 1). Natural ventilation, air exchange, ventilation of living rooms of residential buildings

depends on the temperature difference inside and outside the building, as well as the thickening and thinning of the air under the influence of wind. In order for the temperature difference to create a constant air flow, the window spaces between the air outlet and the inlet must be located at different levels of the building.

Khorezm houses require geometric cooling of the air at some hours in the evening and ventilation of the rooms at other hours of the day. The lighting of the rooms is subject to the rules of ventilation and radiation of the interior, if the installation of protective devices for windows is observed. It is important to position the windows relative to the sun (Figure 2).



FIGURE 2. KHIVA STYLE COURTYARD VIEW

South-facing walls conduct less heat in summer than east-facing walls. The best direction for summer rooms is to the north, the best direction for winter zones that require maximum heat is to the east, so that the western and southern sides do not lose their importance in this regard. The high energy efficiency

of solar radiation in the Khorezm oasis creates a purposeful direction in accordance with generally accepted rules. But in addition to heat transfer through sunlight, builders also have to reckon with the lighting mode (Figure 3).

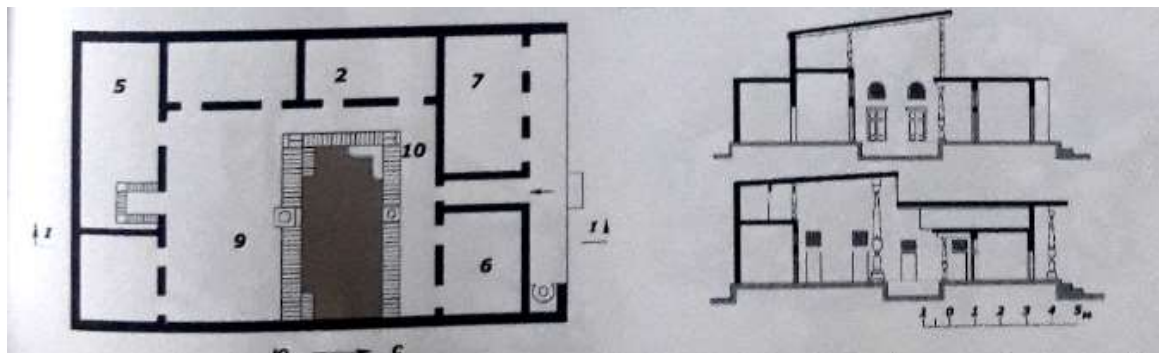


FIGURE 3. 1ST TENT-KASHGARCHA; 2 UTILITY ROOMS; 3 KITCHENS; 4-SOFA; 5 SUMMER ROOMS; 6 WINTER ROOMS; 7 HOTELS; 8 SUMMER KITCHEN; 9 RIGHT AWNING; 10 INVERTED AWNINGS; STABLE 11 (ACCORDING TO V.L. VORONINA)

Although the summer rooms are mainly oriented to the north, they provide enough light for all conditions, as in summer the length of day and the intensity of light in this area is much higher. For winter rooms, you need to choose a direction that will eventually achieve maximum heat and light. In winter, more south-facing walls are illuminated by sunlight, while restored walls facing east and west receive the most heat. Khorezm masters in their construction practice reckon more with the long scattering of sunlight. Thus, the sides of building types are exposed to heat, which is significantly different from each other. Such diversity of thermal effects indicates that there is a constant relationship between the amount and direction of sunlight received along the sides of the building where the sunlight falls. In a climate where the main components are rain and snow, the two-sided (sloping) roof of the roof not only justifies itself, but also actively participates in the creation of the architectural and artistic image of residential buildings in the village. Therefore, the low number of fires in the hot and dry climate of Central Asia, especially in the Khorezm oasis, the roofs on both sides do not justify themselves functionally and aesthetically. Due to low rainfall in Khorezm, it is necessary to cover the roof on a small slope. One of the ways to connect the house with the outside environment in desert conditions is to use a wall-mounted fencing form with high thermal protection properties, as such a shape insulates the house well from various harmful effects of nature. In modern rural houses of Khorezm, it is common to cover verandas with windows that are poorly directed to the sun. Glass-covered loggias or verandas can be oriented in a northerly direction, protected from returning heat rays (streams). Typically, the residential courtyard on the north side of the house receives light from the direct rays of the rising sun, facing the setting sun.

The historically formed rural settlements of the Khorezm oasis are distinguished by a certain contrast of natural and mastered landscape with their own characteristics. The main focus in this oasis is on the priceless traditions of the garden in front of the camp. The gardens of the settlements of this region are distinguished by the fact that the specific natural and climatic conditions of Khorezm rural houses are made of the material that forms the basis of the surrounding landscape, which requires consideration of the following measures:

- creation of a living environment on the principle of "space within volume", in contrast to the principle of "volume in space";
- Protect the architectural environment from overheating under the influence of sunlight and increase the ventilation of this environment by directing it to the north or northeast or at least east.
- Many gardens that existed in the Central Asian region in the Middle Ages. None of the garden structures and other types of gardens have survived to the present day [2].

III. CONCLUSIONS

1) Conflicting situations in the Khiva urban landscape have been assessed and on this basis it is necessary to develop measures to solve the problems.

2) The application of new innovative technologies in the landscape, in particular, new aspects of modern "Light Architecture" to further enhance the decorative features of the light green environment (e.g. self-lighting fences, wreaths, light umbrellas, self-reflecting tiles on landscape architecture floors, plastics through use) we can give a new tone to the quality of the landscape architecture of our city;

3) Given the hot and dry climate of our city and the long summer, it is advisable to use the opportunity to beautify urban areas and achieve the effect of "wind" in the art of gardening.



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