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INFLUENCE OF CLIMATE ON BUILDING DESIGN

Toshmatov Ulugbek Kodirjon ugli
Student of Fergana Polytechnic Institute

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Abstract. *This article provides basic information about climatic features that should be taken into account in the design of buildings and structures and their role in the field of construction.*

Keywords: *climate, wind direction, temperature, regions, desert, plains, highlands.*

ИҚЛИМНИНГ БИНО ТУЗИЛИШИГА ТАЪСИРИ

Аннотация. *Ушбу мақолада бино ва иншоотларни лойиҳалашда ҳисобга олиниши керак бўлган иқлим хусусиятлари ва уларнинг қурилиш соҳасидаги ўрни ҳақида асосий маълумотлар келтирилган.*

Калит сўзлари: *иқлим, шамол йўналиши, ҳарорат, минтақалар, чўл, текисликлар, баландликлар.*

ВЛИЯНИЕ КЛИМАТА НА КОНСТРУКЦИЮ ЗДАНИЯ

Аннотация. *В этой статье представлена основная информация о климатических особенностях, которые следует учитывать при проектировании зданий и сооружений, и их роли в области строительства.*

Ключевые слова: *климат, направление ветра, температура, регионы, пустыня, равнины, высокогорья.*

INTRODUCTION

Uzbekistan is located in the northern hemisphere, in the central part of Central Asia. The climate of Uzbekistan is influenced not only by its geographical location, but also by the height of its territory above the ocean level and the shape of the relief. [1]

A quarter of the country's territory is mountains, the rest is located at an altitude of 100-200 m above sea level. in priority. The plain merges with the hills from west to southeast, and the hills merge with the mountains.

MATERIALS AND METHODS

The territory of the Republic of Uzbekistan is 447.4 thousand km2, and its borders are more than 5300 km, mainly located between the Amu Darya and the Syr Darya. The area of plains (deserts) is 75% of the country. Deserts are located at an altitude of 300-400 m above sea level. It is located at an altitude, and the climate is sharply continental.

The average temperature in July is 30-31°C, in January -2-3°C. The annual rainfall is about 100-300 mm. [2-5]

Part of the country's territory, located at an altitude of 400-1200 meters above sea level, is a hilly area. The hilly climate is more temperate than the desert climate. More rain falls in these areas (300-450 mm) than in the desert, and the summer season lasts a long time.A strong wind blows over most of the territory of Uzbekistan, especially on the plains.

When designing buildings and their external enclosing structures, it is first necessary to create a temperate climate for people to live and work. For human life, a moderate temperature should be 18-24 ° C. [5-10]

If the indoor temperature is below +8°C, it is considered cool if it is cold from +8°C to +15°C, warm if it is +16°C +28°C, and hot if it is above +28°C . Heating of buildings in winter and protection from solar radiation in summer depend on the weather of the climatic region.

For example: the average July temperature in Fergana is +26.9°C, the amplitude of air temperature fluctuations is 15.4°C. The influence of the outdoor air climate on the external dimensions and planning decisions of buildings is great. The width of residential buildings heated in the 9th month of the year is greater than the width of buildings designed in a temperate climate in order to save the amount of heat consumed. Bay windows, loggias and balconies are not included in the design of public and residential buildings in regions with a very cold climate. In industrial buildings, the height of the spans is the same, and lanterns that give light are rarely used.

The duration of the hot climate in Uzbekistan is more than 3-4 months. Therefore, in these buildings, the method of natural ventilation is used, and the air temperature in the room is kept from overheating.

RESULTS

In addition, barriers (blind screens) are designed to protect the walls and windows of high-rise buildings from solar radiation, and natural ventilation measures are taken in single-mansard roofs.

In areas of Central Asia, where the climate is sharply continental, natural ventilation of buildings through windows at night and protection from high temperatures by closing windows during the day are very effective. In other flat, desert areas, a moderate indoor climate is created with the help of artificial cooling air conditioners. In addition, the height of the room in Central Asia is 2.7 m. It should not be less.

At present, many one- and two-story single-family houses are being built in villages and cities. The convenience of this is that the upper part of the two-story houses is protected from solar radiation by natural ventilation, and the high temperature in the lower part does not fall to the ground.[11-16]

DISCUSSION

A more effective method of protection against solar radiation is to plant ornamental and fruit trees around the building, providing shade and cool air.

In places where strong wind and precipitation are simultaneously observed, the outer surface of the structures is protected with a moisture-proof ceramic-ceramic layer and a moisture-proof layer. In places where precipitation is not expected, the surface of the walls of buildings is plastered with a cement-sand mixture 2-4 cm thick. It is known that the thermal conductivity and moderate humidity of the external enclosing structures depend on the climate of the area and the internal environment.

In the design and construction of buildings, residential buildings and cities, the built-up area, frequency and speed of the wind blow are of great importance. Especially in the design of industrial and agricultural buildings, environmental protection and residential areas, wind blowing is taken into account.

CONCLUSIONS

The frequency and speed of the wind blowing from the geographic polar sides in the regions are recorded at weather stations. Wind frequency and speed indicators are plotted on an arbitrary scale. This drawing is called "The Star of the Wind". An annual, seasonal and monthly star is drawn based on daily and annual observations of wind frequency and speed. [17-19]

Building codes and rules for determining the frequency and speed of wind blowing from the geographical poles and sides of QMQ.

The wind star is drawn according to 2.01.01-94 "Climatic and physical-geological data for design".

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