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ESTABLISHMENT OF TEMPERATURE AND HUMIDITY IN APARTMENTS AND HOUSES WITH THE HELP OF ARTIFICIAL PHASE ARTIFICIAL REGULATORY SYSTEMS

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Abstract
The article describes the creation of an artificial environment that provides an improvement in the microclimate on the middle and upper floors of residential buildings.

Keywords: microsystem, temperature, houses, research, engineering, air.

INTRODUCTION

The experience of designing in the climate of Uzbekistan shows that the methods of assessing and developing my microclimate, the definition of comfort in many ways depends on the location of the premises.

The climate of the construction site is considered a top priority in the implementation of projects for buildings and structures. The word "climate" comes from the Greek word "climate" - "slopes", means the fall of the sun's rays with a slope above ground level. Thus, the air temperature at ground level depends on the position of the sun above ground level. If the sun's rays are perpendicular to the surface of the earth, then the air temperature at the earth's surface will be high. In addition, the air temperature is influenced by the geographical location of the place, the topography and the height from the ocean level.

The dependence of residential zoning and climate in Uzbekistan changes with the development of social conditions in society.

Each period of development reveals new requirements for buildings, while from the point of view of new technical capabilities, a reassessment of the climatic environment is required, while maintaining the centuries-old principles and traditional ideas about climate accounting in the construction of residential buildings.

Currently, due to the growing demand of the population for buildings and the growth of modern architecture in cities and villages, the problem of "climate-building" is becoming increasingly important. Projects of houses designed for use in typical, large climatic zones, as well as with gross violations of the comfortable microclimate, remain a problem for designers.

In practice, the thermal adaptation of the human body depends on three elements of the building's microclimate: air temperature, humidity and movement.

That is why, on the one hand, we need to focus on the three factors of the external climate and the thermal adaptation of the human body to the microclimate of the building, on the other

hand, we need to focus on linking the microclimate of buildings with the geographical environment and the building microclimate in human life.

One of the main climatic factors is wind, which has a significant impact on the formation of the internal and external environment.

Wind has a significant impact on the state of air pollution in the city. Along with this, the wind affects the microclimate of structures and buildings through the surface of walls, roofs, walkways, which leads to heat removal from the active surface of the building.

In Central Asia, the hottest time of the year is the source of continental formation of tropical air. The regions of Central Asia are characterized by signs of high temperatures and minimal rainfall in desert areas. Virtually all republics - Uzbekistan, Tajikistan, Turkmenistan, Kyrgyzstan and southern Kazakhstan - are exposed to very high solar radiation along with high summer temperatures, a high probability of high sun exposure, low traffic and low air humidity. These conditions often lead to overheating of construction sites and living quarters, that is, the effect of a very high heat load on the human body, a decrease in working capacity by 30% or more.

Climate analysis of the territories of Europe, Asia, Africa and America shows that in these regions there are also cities characterized by hot and cold climatic conditions.

Analysis of climatic factors based on long-term meteorological data of cities in the southern regions revealed the presence of a hot desert climate in summer, 40-70% of the weather in many cities of Central Asia and South Kazakhstan. Transcaucasian republics.

Construction sites have certain aerodynamic properties that depend on landscape and planning factors. Some interruption and deformation of the wind flow occurs when air is circulated through construction sites and densely planted oak trees. On windy days, in developed areas of construction sites, the wind speed is reduced by 50-70%. In this case, the dry climatic conditions of large cities at the construction site are up to 2 m / s. Such winds allow us to develop a weak airflow caused by heating. According to the speed of such convective flows, on average 1 m / s, A. Clattzer's point is 0.7-4.8 m / s, A. According to Giyasov - 2 m / s and, in some cases, in some cases 10 m / s. and higher.

On hotter construction sites, hot and relatively light air rises upward, creating a kind of pressure drop, with the result that relatively colder air surrounds the more rarefied areas of the air. Similar phenomena arise from the contrast between the irradiated walls of the building and the shadows.

It is known that there are various forms of air circulation / aeration / heat generation in living quarters, but, unfortunately, they are poorly understood. The available data on this issue are mainly theoretical views, the experimental studies carried out are of a different nature.

It follows that due to the large number of hot and quiet days, the issue of natural aeration plays an important role in the planning of cities in Central Asia.

In hot and humid weather, i.e. at a temperature of 22-320C, a person perceives the effect of the wind as a pleasant cooling, antipyretic agent.

In the last two decades, in the CIS countries and abroad, studies have been carried out to determine the characteristics of heat transfer in the human body during the hot season and taking into account the climate of the local population.

In the 1960s, the construction of medium and multi-storey buildings with an improved microclimate began, the first houses were taken as an experiment, but the construction of this type of building is still not widespread, since such houses, due to sudden temperature changes, do not meet the hygienic requirements. to residential buildings. This is due to the fact that the issues of the periodicity of the influence of solar heat on the Earth's surface and the influence of the rotation of the sun to different weather conditions have not been properly studied in terms of their effect on changes in room temperature.

Method

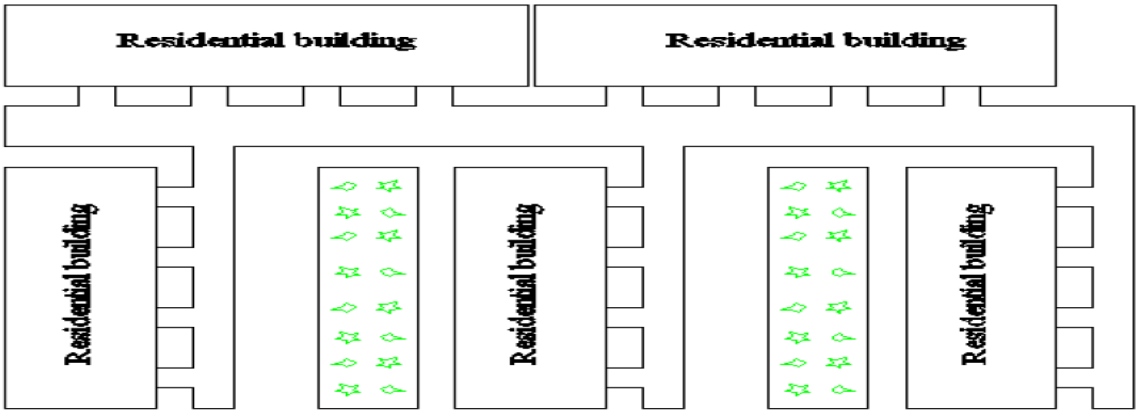
The experiments are mainly carried out in residential buildings in the city of Fergana, mainly in residential buildings in operation. Buildings are studied depending on their location in different contours.

Given the lack of adequate scientific research, in the field of thermal processes occurring in buildings where the annual temperature exceeds normal, taking into account the periodic incidence of sunlight on the earth's surface, it is necessary to develop a method of mathematical modeling to calculate heat fluxes. For this, it is necessary to conduct a study, taking into account the ability to conserve thermal energy of building structures of buildings and structures (mainly in summer).

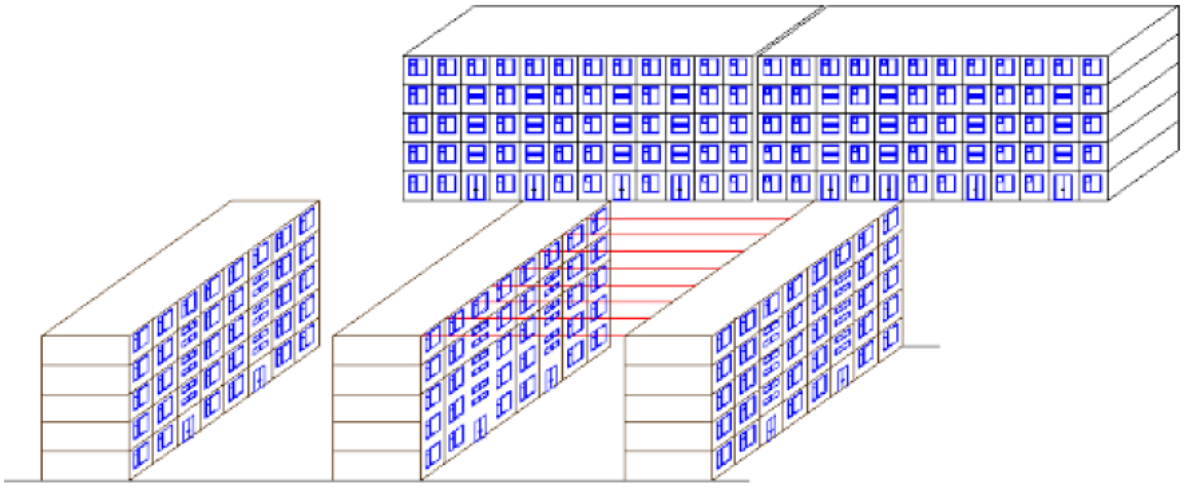
In addition, the difference between theoretical and experimental data should be taken into account, work has been carried out to improve the architectural and planning solutions of low-rise and multi-storey buildings, thermal inertia, as well as the interpretation of thermal fluctuations.

The results of the study show that when designing buildings exposed to sunlight, the microclimate of medium and high-rise buildings must be maintained in the indoor microclimate during the day to ensure the desired indoor temperature, taking into account the periodic variability of solar heat on sunny and cloudy days. This will require the development of a mathematical model representing the dependence of periodic changes in solar temperature on the indoor microclimate under various weather conditions and the creation of an artificial environment that provides the required microclimate in the building.

Experimental results show that the climatic arrangement of buildings and the layout of the wind path and solar radiation cause the climate between buildings to warm and reduce humidity in dry, hot climates.



1-drawing: Plan of the to be researched.



2- drawing: Schematic representation of the experiment.

Using the artificial regulation systems we used, the influence of the external and internal environment of the premises on the external climate and the external climate on the microclimate of the house was studied, and positive conclusions were drawn

Based on these results, it was found that the distance between them, the landscaping factor, roads and sidewalks play an important role in the design of buildings.

1- tablis: 4-day experiment results

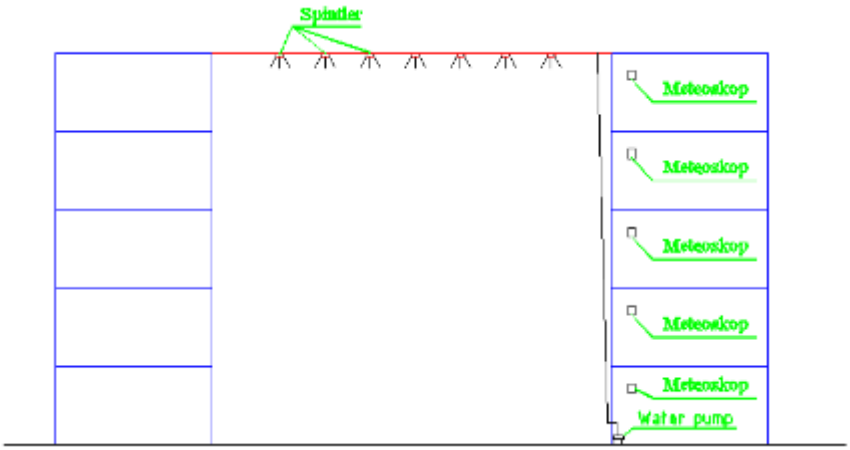
№	date	Climatic readings of the building shell				Climatic readings in the room (when the unit is off)				Climatic readings in the room (when the unit is off)				note
		time	Temperature°C	Wind speed m / s	humidity %	time	Temperature°C	Wind speed m / s	humidity %	time	Temperature°C	Wind speed m / s	humidity %	
1	01.06.2021	8:45	26	0,8	26	12:00	35.9	0.8	24	13:00	33.2	0.8	26	
		11:45	33	0,4	22					14.00	31.2	0.7	32	
		15:13	35,9	1,7	14					16.00	29.2	0.7	36	
		20:26	30	2,4	21					18:00	28.0	0.8	40	
2	02.06.2021	8:45	25	0,9	27	12:00	37.0	0.8	24	13:00	36	0,9	28	
		11:45	32	0.8	26					14.00	34	0.8	29	
		15:13	36	0.8	24					16.00	28	0.7	32	
		20:26	28	0.7	26					18:00	26	0.6	36	
3	03.06.2021	8:45	26	0.7	25.3	12:00	35.0	0.6	23.0	13:00	34.0	0.7	27	
		11:45	32	0.6	23.2					14.00	32.0	0.6	28	
		15:13	35.3	0.6	23.0					16.00	30.0	0.6	32	
		20:26	27	0.4	24.0					18:00	26.0	0.4	38	
4	03.06.2021	8:45	28	0,7	26	12:00	32	0,7	25	13:00	32	0,7	24	
		11:45	30	0,7	24					14.00	32	0,6	26	
		15:13	37,5	0,6	22					16.00	28	0,6	30	
		20:26	29	0,7	25					18:00	26	0,4	36	

Conclusions

It was confirmed that greening around buildings should pay more attention to the heat-absorbing landscape and, conversely, reduce the amount of asphalt pavements that return heat to the atmosphere.

The results of experiments and observations have revealed the economic advantages of some artificial regulators, that is, air conditioners. We can say that the prevention of diseases that are carried by colds that are dangerous to human health (in summer) is by far the best effective way to create a natural habitat.

Architectural cut of the building



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