Nexus : Journal of Innovative Studies of Engineering Science (JISES)
Volume: 02 Issue: 10 | 2023 ISSN: 2751-7578
http://innosci.org/

Research Results Conducted in the Subject of Researching the Architecture of the City of Samarkand Years of Independence and Determining Its Prospective Development Ways (In The Example of Medium and Multi-Story Residential Buildings)

O.B. Khaitov
deputy mayor of Samarkand, doctoral student of the "Architectural Design" department of Samarkand State University of Architecture and Construction
Khaitov012@gmail.com

Annotation: *The article describes the results of the research conducted on the topic of researching the architecture of the city of Samarkand during the years of independence and determining the ways of its future development (in the example of medium-sized and multi-storey residential buildings).*

Key words: *the city of Samarkand, the architecture of the years of independence, medium and high-rise residential buildings, the future development paths of the architecture of the city of Samarkand.*

Introduction

Researching the architecture of the independence years of Samarkand, which has a unique position among the historical cities of the world, on the example of medium and high-rise residential buildings, and determining the future development paths of urban architecture is becoming one of the urgent tasks of modern architecture and urban planning of Uzbekistan. Today, we all know that the future of Samarkand city cannot be imagined without medium-sized and high-rise residential buildings, while fulfilling the task of our government to turn the city of Samarkand into a tourist center and to increase the number of the city's population to one million. It is for this reason that the topic of this article is taken as an example of medium and high-rise buildings.

The main part. Looking at the architecture of the city of Samarkand during the years of independence, we can see that in a relatively short period of time, 30 years, significant positive works have been done. There is no doubt that this is only a prelude to the great creative works that will take place in the future. Therefore, today's generation is not limited to preserving the great heritage left by our grandfathers, being proud of its highness and pricelessness. Beside these architectural masterpieces, they are adding worthy new masterpieces. They are enriching the treasure of our architectural and spiritual heritage, and these works are developing with intensity and passion, so that in the near future they will bear fruit.

The following conclusions were reached as a result of the dissertation work on the topic "Research of the architecture of the city of Samarkand during the years of independence and determination of its future development paths (in the example of medium-sized and multi-storey residential buildings)":

1. In order to create a microclimate in residential areas in the natural climate (hot and dry climate) of Samarkand, it is necessary to implement architectural design and urban planning measures that provide natural ventilation and air exchange. In the dissertation, the architectural-volumetric structure of Samarkand residences was determined, and the ratio of the area of the winter rooms and the summer open room (porch) of the apartment houses was determined. It was determined that this ratio is 1:0.25 (0.2) in medium-sized and high-rise residential areas of Samarkand, and 1:0.7 in suburban and rural residential areas. Special attention is paid to the criteria for creating comfortable hygienic, landscape and psychological parameters in residential areas in hot and dry conditions.

2. In the city of Samarkand, it is possible to create a comfortable micro-climate on all four sides of the building, using the zoning and on the basis of the correct location of the dwellings. In the project solutions, based on the conditions of each region, the main factor that shapes the microclimate is the convenient location of the dwellings relative to the horizon and the effective use of the positive features of the region by placing the walls and windows of the building. For example, the heat of the sun falling from the south-facing windows of high-rise residential buildings allows to reduce the energy used for heating the building by 15-30%.

In the dissertation, it is emphasized that the role of solar energy in the design of energy-efficient multi-story buildings depends on the orientation of the building. A building facing East and West with its long axes in the direction of geographic latitude is the most optimal solution, as it is provided with a large number of windows facing South. In terms of winter and summer use of buildings, the most unfavorable orientation is the north and south orientation with their long meridional axes. Residences built taking into account the characteristics of each region are efficient in terms of energy consumption and are considered favorable from a microclimatic point of view.

3. The modern principles of the formation of medium and high-rise residential buildings are closely related to their placement based on urban planning requirements. First of all, it is necessary to take into account the natural conditions in the placement of residences, and secondly, it is necessary to take into account the local situation in a certain area of the city and the location of the buildings around the residence to be built. From the architectural point of view, in the formation of medium-sized and multi-story residential buildings, the main issues are to determine the concept in accordance with the main goals, to determine the level of compactness of the buildings, and to find a general compositional solution. Structurally, to ensure the energy efficiency of buildings, the external structure of the walls of the dwellings, the glass-enclosed surface of the external walls and the structural solution of the roof are of great importance.

Based on these issues, the dissertation recommended the use of penoplex, a structure that acts as a barrier to energy resources, effective protection in cold and heat.

4. Application of research results to design and construction operations will serve to improve the quality and energy efficiency indicators of housing in the city of Samarkand. In the project solutions developed on the basis of our recommendations, the measures necessary to create a comfortable microclimate in residential areas have been determined. In addition, it is recommended to develop a nomenclature of households in accordance with the existing social and demographic composition of families in regions, cities and villages.

5. As in other big cities of our country, a number of big problems have accumulated in the use of housing in the city of Samarkand. These include the reduction of land resources in the city and the limitation of regional development, the lack of technical support and energy sources, the high level of

energy loss in city networks, and their frequent malfunctions and the need for repair as a result of their operation at network limit indicators. In addition, it can be noted that the energy efficiency of currently used dwellings is two to three times lower than that of developed countries.

6. In the next 20-30 years, energy shortages and a sharp increase in its cost are predicted due to the depletion of conventional energy resources and insufficient development of energy resources. In this case, the need for design and technological solutions that ensure the energy efficiency of residences increases. The energy efficiency of medium and high-rise buildings depends on the construction materials and constructions used in them, effective technical and technological support, as well as innovative design solutions.

7. In the dissertation, a project proposal of medium and multi-storey modern houses was developed based on the step-like volume-spatial composition suitable for the architecture of traditional settlements of the city of Samarkand. The types of apartments in these houses are designed taking into account the increase in the demographic weight of young families in the future and the composition and ratio of summer and winter rooms required for each apartment in the climate of Samarkand.

8. In this study, the planning scheme of the urban planning of the modern neighborhood composition made up of residences is proposed. The architectural-spatial structure and architecture of this modern neighborhood is different from the matchbox-like dwellings that became traditional during the former Soviet Union, and the spatial structure of this neighborhood has a dynamic character, and it is planned that each household will have a summer room and its own green area.

9. It was recommended to determine the future development paths of the architecture of the city of Samarkand in the following directions:

a) on the architecture of city residences

- in the architectural planning solutions of medium-sized and high-rise residential buildings to be built in the future, in addition to measures ensuring their energy efficiency, local climate conditions, building materials, the needs of the population for summer and winter rooms, courtyard landscape - greenness, national traditions in lifestyle (hospitality, family qualities) to consider;

- in the architecture of residential and public buildings, the main compositional elements of the building, the seat, the floor, the style of the building and the architectural and artistic plastic solutions of the national traditions are reflected;

- in addition to expressing the general aesthetics and silhouette of the city's architecture, the multi-storey buildings and residences under construction should also fulfill the function of orientation and dominance in the background of the city's buildings;

- to include in the house projects that there should be at least two-story parking spaces for the cars of the residents of the house in the basement of each multi-story residential building.

b) on urban planning

- Turning the city of Samarkand into a city with a million inhabitants in the future;

- development of tourism infrastructure in this area in accordance with international standards by modern reconstruction and regeneration of vacant buildings in the center by moving the administration of the Samarkand region located in the city center to Gulabad massif in the city step by step;

- Formation of a multi-storey modern housing massif instead of the old low-rise yards located in the area behind the station of the city of Samarkand and a new residential urban complex in the existing "Shirin" massif of the city of Samarkand;

- Formation of a new urban development residential complex similar to it in the Karasuv massif of Samarkand city and establishment of the recreation zone of the Karadarya coast in this area;

- To complete the construction of the "Samarkand City" tourist center, which is currently being formed near the international highway M-37 and the Grebnoy canal, passing through the eastern side of the city of Samarkand, and to connect it with the city of Samarkand;

- organization of pedestrian crossings from main streets underground;

- installation of "smart traffic lights" instead of traditional traffic lights at intersections in order to reduce traffic congestion in the city in the future.

c) On restoring the historicity of ancient Samarkand

- cleaning the historical city area of modern buildings and elements that are foreign to it according to its architecture (in particular, buildings around Registan Square and the beginning of Dahbet Street) or their regeneration;

- Restoration of the main gate connecting it with the historic Registan square and a part of the ancient defensive walls in the area of the arch-castle of Amir Temur, which has not been preserved to us, and the mausoleum of Nuriddin Basr, which was built in this area, but has not been preserved to us, and in this way, the city restore the historicity of this part and turn it into a historical tourist environment;

- To continue the restoration of the ancient city wall along the part of the ancient city of Samarkand facing the medieval city of Samarkand;

- Improvement of the currently started conservation works in the architectural monument "Ishratkhana" and its surroundings and development of a project for its repair in the future;

- to recommend the use of tower-like buildings ("Business City" offices, banks, hotels) in shaping the architecture of new areas around Samarkand in the future, because such buildings not only play the role of dominants, but also the city's territory and infrastructure it also prevents expansion;

- Such steep modern tower-like buildings remind the architecture of our national towers, give the city architecture a lively and dynamic character. They are filled with green avenues, promenades, water and landscape design elements;

- Development of the art of creating an architectural series from the buildings characteristic of our national urban planning in Samarkand architecture in the future - ensemble construction.

We hope that the above suggestions and recommendations have been agreed with the authorities of Samarkand and their implementation will lay the foundation for the future development of Samarkand's architecture.

References:

1. Khaitov O.B., Hidirov M.M. Ph.D,// Climate Sensitivity of Traditional Uzbek Architecture. 3rd World summit on climate change and global warming. February 27-28, 2019/ Prague, Czech Republic
2. Khidirov M.M., Khaitov O.B. The main problems in the formation of settlements in the conditions of the city of Samarkand and the region //Urgent problems of the development of urban planning, landscape architecture and design in Uzbekistan. - Samarkand, 2018, May 14-15. - B.82-83.