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HISTORIOGRAPHY OF ARCHITECTURAL ANALYSIS OF MUHAMMAD TARAGAI ULUGBEK'S SUPREME MADRASAH

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A B S T R A C T

A lot has been said and written about the Mirzo Ulugbek madrasa in Samarkand Registan. Among them, when was this madrasa built (1417-1420), how was the educational process organized, what subjects were taught in the madrasa, how many rooms were there (54), How many students studied (100-110), what scholars worked (Kazizada Rumi, Mirza Ulugbek, Shamsiddin Muhammad Khafavi, Giyasiddin Jamshid Koshi, Alauddin Ali Kushchi and etc.), the patterns on the madrasa facade, the parameters of the madrasa, and similar evidentiary opinions were expressed and debated. done However, until now, only a few scholars G.A. Pugachenkova, P.Sh. Zohidov, K.S. Kryukov and others have paid attention to the analysis of this madrasa-university from an architectural point of view. This article presents valuable information about the historiography of the architectural analysis of Mirzo Ulugbek Supreme Madrasah.

K E Y W O R D S

Madrasah, hujra, dome, classroom, monk, reading room, imam, muezzin, mudarris, architectural style, Kazizada Rumi, Mirza Ulugbek, Shamsiddin Muhammad Khafavi, Giyasiddin Jamshid Koshi, Alauddin Ali Kushchi..

Introduction

Let's pay attention to the main style of the madrasa. In the middle, the entrance to the building is exaggerated by a huge gable and an archway. Firstly, so that the building has a healthy and attractive appearance, and secondly, so that people do not search for the entrance to the building. That is, the threshold of the building is clearly shown. First, the madrasah design is rectangular, symmetrical on the longitudinal axis, and has a traditional wide inner courtyard. Such a plan is universal not only for the architecture of Central Asia, but also for other public buildings (community mosques, caravan-palaces, rabots, houses, hospitals) in the Islamic countries of the Near and Middle East.

Secondly, environmental noises, external natural conditions are removed. Thirdly, regardless of how the building is oriented in relation to the horizon, comfortable functional and pleasant climatic conditions are created in its internal environment. This is due to the movement of the shade in the courtyard from morning to evening due to sunlight, creating a comfortable and cool shade environment inside the courtyard. This is very convenient for the conditions of Islamic countries with a hot climate, especially a hot dry climate. For this reason, the courtyard plan is universal in these countries. If the building is not one-story, but two-story, its capacity and shadow effect in the yard will be more effective. That is why every madrasa-university building was built with a courtyard and two floors.

MAIN PART

If we pass a vertical plane along the longitudinal axis from the center of the roof, we will see that the right and left sides of the building are formed in an axisymmetric manner with respect to this plane. Even the corners of the building are decorated and exaggerated with tower-bouquets. Why? Because symmetry is a means of achieving beauty on earth since time immemorial. Allah himself was the first to use such a means of beauty, or rather, he himself created it. Let's take a look at ourselves. Allah, the lover of beauty, used this method the law of reverse symmetry, to create man and other creatures. We architects have learned this method from nature created by God. So, the madrasa building was created in a symmetrical structure with its main style. As for its beauty, in addition to the law of symmetry, we can also see a number of beauty tools in the composition of the building style, such as the proportion of architectural forms, the subordination of all parts to the main facade, the architectural integrity of the structure of the building volume, and the decoration of the style surface with glazed colored tiles.

Symmetry is lost if any form that architecturally shapes the main facade of the madrasa is removed or destroyed. This, in turn, destroys the architectural integrity of the structure of the main facade of the madrasa. And, finally, it leads to the loss of the artistic aesthetic status of the madrasa building, which is a work of architectural art. Mirzo Ulugbek, a famous architect from Hirot, who built the building, could not allow this. Now let's dwell on the issue of why the entrance to the madrasa yard is not directly from the main gate, but through the entrance on the right side. Firstly, the movement of people entering and leaving the madrasah is separated from each other so that they do not interfere with each other. Secondly, with the help of this method, the environment of the inner courtyard of the madrasah is separated from the external environment. The originality and special function of the internal environment, that is, that the madrasa is a place of higher education, is indicated by this solution.

It was believed that an outsider could glimpse the mysterious interior only through a beautiful architectural fence. Now let's pay attention to the dimensions of the main facade of the madrasa. The width of the gable arch on the facade, the gable columns, the size of the walls attached to the gable on both sides, and the size of the towers-flowerbeds. The architect who worked on the madrasa project used the architectural concept of "module, i.e. scale" to harmonize these dimensions and applied it to the architect's building design. The module is actually derived from the Latin word "modules", which was used in order to coordinate parts of buildings and structures. As a module, in the Middle Ages, "gas", "half-gas", the length of the main brick used in construction, the width of the outer wall of the building, and half of the width of the gable were accepted. The module acted as a separate constant for each building.

There was a multiple, that is, a proportional relationship between the length unit and the module adopted for the building. Therefore, the main thing that connects and unites all the proportions used in architecture is the modular system that helps to solve the problem of the architectural project and implement it on the construction site. The modular system "is a system that determines the proportions necessary for a building or structure, determines the dimensions of the object being designed, connects the length measure with the building module, determines the scale of the building, and converts the geometric and mathematical expressions of proportions into simple numerical ratios," writes Doctor of Architecture K.S. Kryukov. Therefore, the modular system has been the most reliable and widely used creative method of architects in the past.

In the modular style, the building design is drawn on square cells on paper, that is, on the modular scale grid, and various dimensions: wall thickness, door and window positions, archway and gable

width, etc. The sides of the square cell corresponded to the length measurements of that time (gaz, cubits, cubits, steps, etc.). As a result, with the help of these grids, the architect achieved mutual proportionality of building parts in the design and was able to calculate in advance the amount of construction materials. Half of the gable of the gable was adopted in the form of a modular unit in the integration of all major parts of the main facade of the Mirzo Ulugbek madrasa-oliya (gable, gable, gable column, sides, tower-bouquets). This dimension ensured the harmonious connection of the parts of the building facade and the proportional appearance of the building forms.

As for the Islamic concepts of beauty and harmony, it is stated in the Holy Qur'an that "Allah is beautiful and He loves beauty." So, from an aesthetic point of view, Islam is familiar with beauty. It is said in the hadiths that Muslims built beautiful cities, and it was allowed to decorate your mosques during the Caliph Uthman's time. According to Islamic concepts, the beauty of cities and buildings is not in the appearance and number of statues of idols and figures, living creatures, but in the geometric harmony of the architectural forms of the buildings, the harmony of colors and shapes, open and closed courtyards and rooms, verandas. in its comfortable and organic connection, in the proportion of geometrical and Islamic complex patterns, and finally, in the neat architectural environment decorated with written patterns and beautiful hearts and virtuous people in them, where the great wisdom from the Holy Qur'an and hadiths, which call people to good behavior, are written.

Although the madrasah is rectangular in shape, its courtyard is square in shape. The reason is that the internal courtyard, which is limited on four sides, reflects the perfect internal heavenly world of the madrasa, and an attempt was made to bring this environment into a unified state. For this, the sides representing the symbols of the basic elements of the perfect universe, such as fire, water, earth, and air, were taken in a square shape. Dormitories (rooms), classrooms, a mosque, a library and other auxiliary rooms are provided for students to live and study in madrasahs. There are three spacious porches in the courtyard of the madrasa. They served as summer classrooms. The wide and long hall at the end of the madrasa is the mosque. The small halls on both sides of it may have served as a library. The madrasa's cells (student dormitories) are improved compared to those of other madrasas, with a small utility room on the outer wall, and windows that open to the outside in the cells on the second floor.

The rooms are heated with the help of sandal on cool days. As for the motifs in the Ulugbek madrasa, we can see the symbolic map of the movement of planets and stars in the sky-universe world, which was originally painted on the wings of the main pediment. Researcher S. B. Bulatov writes that these patterns "represent the system of infinite gravitational systems connected by the force of interlacing of galaxies, that is, the map of the universe is reflected." If we take into account the knowledge of Mirzo Ulugbek and his comrades in the fields of astrology, astronomy, astrology, mathematics, we believe that we should agree with the above opinion. The eight-pointed star in the pattern of the madrasa is a reflection of the eight-pointed star in Muslim architectural monuments and other examples of art. According to experts, this octogram represents the eight angels holding the throne. The pattern depicts an eight-pointed star and a light radiating inside it. This figure may also refer to one of the eight heavens and its eight gates.

After the establishment of Islam, this pattern began to symbolize the sun, moon and stars in the sky. In addition, to the geometric and Islamic decorations on the walls of the madrasa, one can also find many epigraphic-writing decorations. They contain knowledge, enlightenment and wisdom to glorify Allah. For example, "knowledge brings honor in this world and honor in the hereafter" and etc. The

architectural methods and procedures used in the design and construction of the madrasa mainly consisted of the following:

- Law of symmetry;
- Basing on the modular system in the formation of building parts;
- Exaggerating the threshold of the building and subordinating other forms to it;
- Adjusting the size of the building to its seat;
- Proportion and harmony of architectural forms;
- Integrity of the architectural composition;
- Scale of shapes and patterns;
- Semantics and content of patterns;
- Principles and requirements such as creating an architectural ecological and psychophysiological environment suitable for the purpose of the building have been followed.

CONCLUSION

To sum up, we should note that Ulugbek not only wanted to give this architectural object the status of a madrasa-university of his time, that is, a higher education institution-university, but also to give the architectural solutions and patterns of its construction the highest architectural styles and procedures of his time. and managed to do it. The famous architect of his time Qavomiddin Shirozi from Herat was invited to the construction of the madrasa. And Qavamiddin invited the master builders he knew, tried and tested master builders of his time.

Thus, there was no separation of students according to the year of study in the Ulugbek Madrasah. So, according to the Ulugbek reform, the duration of study is set to 8 years. Those who did not finish their studies during this period had their scholarships stopped, and then they continued their studies at their own expense. As we have seen, the Ulugbek madrasa educated the representatives of science and art of its time. Undoubtedly, the achievements in educating mature people who made a significant mark in various fields of science were the result of new educational methods introduced by Ulugbek.

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