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Principles of Architectural Form Harmony in The Process of Restoration and Conservation of Architectural Monuments

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Abstract: ***In the article, the history of the construction of monuments in Uzbekistan, their architectural formation, their initial function, the architectural and functional changes that took place before they came to us, the historical value of the monument, from the material, structural, artistic and architectural aspects. principles such as the level of preservation, determining the extent to which monuments need conservation and restoration, as well as the architects of the past, before constructing buildings and structures that have been preserved in the form of monuments to us, drew their drawings, that is, their design, style, views of devices, decorations, patterns he worked on the layouts, fragments, drafts and projects, and in some cases, the model or layout of the future building, the proportions of architectural forms, paigor in the drawing, all proportions used in architecture, the law of proportionality and harmony in architecture, architectural decorations the principles of how it is designed in accordance with the building forms are described.***

Keywords: Historical cities, architectural monuments, cultural and natural cultural heritage, architecture and urban planning, principles, forms, construction, restoration, conservation.

I. INTRODUCTION

As we all know, research is conducted before the development of a restoration or conservation project of an architectural monument. They were informed about the history of the monument's construction, architectural formation, initial function, architectural and functional changes that took place before it reached us, the historical value of the monument, the level of preservation from material, structural, artistic and architectural aspects. issues such as determining how much the monument needs repair. Based on these comprehensive studies, the amount of work to be performed on the monument and the method of its repair are determined. For example, the need for a method such as partial repair, full repair or conservation is determined. If a complete restoration method is chosen for the monument, before the restoration project, the method used in the initial design of the monument, architectural harmony and proportion of forms it is necessary to determine the law. Only then can the parameters (height, width, length) of the collapsed parts of the monument be correctly determined. After that, the project of repairing the monument will be started.

The fact is that before the construction of buildings and structures that have survived to us in the form of monuments, the architects of the past drew their drawings, that is, designs, styles, views of devices, decorations, patterns, fragments, drafts and projects, in some cases and they also worked on the model or model of the future building. Examples of this include drawings found in the archives of the 16th century Bukhara architect, 15th century miniatures of Sharafuddin Ali Yazdi's Zafarnoma, personal drawings of the famous master architect Yusufali Musayev, who lived and created in the early 20th century. Among these drawings, Bukhara The architect's developments are particularly noteworthy. These drawings show the layouts of structures such as houses, caravanserais, cisterns, and architectural decoration. When working on these drawings, the architect used the modular system, which was compared to the unit of measurement of that time - "gas", or widely used the type of scaled square grids. The architectural parts of the buildings and structures built by this method are integrated into a harmonious and proportionally integrated system. used in a symmetrical composition, harmonious with each other, rational, in the language of mathematics, simple proportions and dimensions done at This allowed the building to be artistically mature, harmonious in form, and beautiful. So, the architect from Bukhara used the modular system, i.e., the scale type method, as a means of achieving harmony in architecture, in the form of the law of proportionality of forms, in the design of the building.

He conducted scientific research on the theory of architectural heritage. modern scientists (M.S. Bulatov, Lol. Rempel, G.A. Pugachenkova, P.Sh. Zohidov, K.S. Kryukov, A.S. Uralov, M.K, Akhmedov) have used many other proportionality and geometric proportionality tools over the centuries. used by the architects of the past.

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1) defined the laws of architectural harmony, which are basically the following.
2) consists of: Square to achieve the proportions of architectural forms, Egypt.
3) triangle (sides in the ratio 3:4:5), equilateral triangle.
4) and it is necessary to apply simple ratios of integers based on them. The ratio of a half-square from a square or a double square with a diagonal of S5 is also important in maintaining the beauty of forms.
5) The so-called "golden ratio" (1:0.618) ratio and its derivatives are one of the important factors for achieving the harmony of architectural forms. This ratio is obtained by geometrical construction based on the sides and diagonal of the half square, so that the half square itself is a derivative of the square;
6) Paigor on the drawing, simple pile on the construction site, and the circular shape obtained on the plan is also a procedure that has been used many times to ensure the beauty of architectural structures;
7) The effect of using the type of squares obtained on the basis of square diagonals, circles drawn inside and outside the square created the law of "dynamic squares" in architecture. This is from the law. it has also been widely used as an important tool in achieving the harmony of architectural forms;
8) The modular system is the main order that connects and integrates all the proportions used in architecture (simple integer proportions, irrational proportions obtained by geometrical construction). It facilitates the work of the architectural project and helps to implement it on the construction site, that is, it determines the appropriate proportions for the building or structure, connects the accepted length measure that determines the dimensions of the object with the building module, determines the scale of the building, proportions geometrical and mathematical expressions with simple numbers is a creative method that transforms into proportions. It is a tool that unites all the beauties and peculiarities of arithmetic, geometric and harmonic proportions into a single architectural system;
9) In architecture, in the form of the law of proportion and harmony, the human figure and its specific proportions, and in terms of the unit of measurement, the heel (foot), which is 1/6 of the human figure, and the elbow, or "gas", which is 1/4 of the human figure. the part of the human hand from the tip of the fist to the shoulder (60-62 cm) is accepted. Architects generally used relatively small dimensions: half of the heel or gas (30-31 cm) in construction, so that it was easy for them to adapt the building material to the brick.
10) In addition to the above-mentioned proportions, the symmetrical relationship, compositional integrity, repetition of form elements, priority of the main form (volume), paying attention to the decision of the building's course, threshold and finished parts, as well as the principles of building decoration, are the architectural object being designed. included in the means of ensuring beauty and harmony of forms- Architectural decorations are designed in accordance with building forms: the harmony of architectural forms in the composition is of primary importance, and decorations are of secondary importance. The decorative composition is made up of the main and auxiliary (supplementary) patterns. The main patterns are intended to be seen from a distance, and the assistants are intended to be seen up close, acting as a background. Harmony of patterns is based on rapport-distribution, rhythm scale type, symmetry and color contrast. Decorations are divided into mural paintings, gishtkorly, tilework, ganchkorly, girix, Islamic script, engraving, mukamas and kundal types. All patterns have modular scale and geometric construction styles and unique color gloss.

Modern architects and repair builders, before working on the repair projects of the architectural monument, based on the architectural-archeological measurements they have carried out on the monument themselves and the architectural-archeological measurements that were carried out before them, the law of harmony of forms and architectural proportion in it. , that is, the first monumentit is desirable to study, research and define the style of architectural design and construction.

Determining which of the above-mentioned laws of architectural harmony and proportionality of forms have been applied to the monument under repair increases the level of error-free repair of the monument, and creates opportunities for efficiency in the repair. Therefore, in order to carry out the renovation project of the monument, the architects should determine the laws of architectural harmony and . it will be possible to achieve the correctness and correctness of the repair work.

The correct determination of the law of architectural harmony regarding the monument is a reliable guarantee for the repair of the monument.

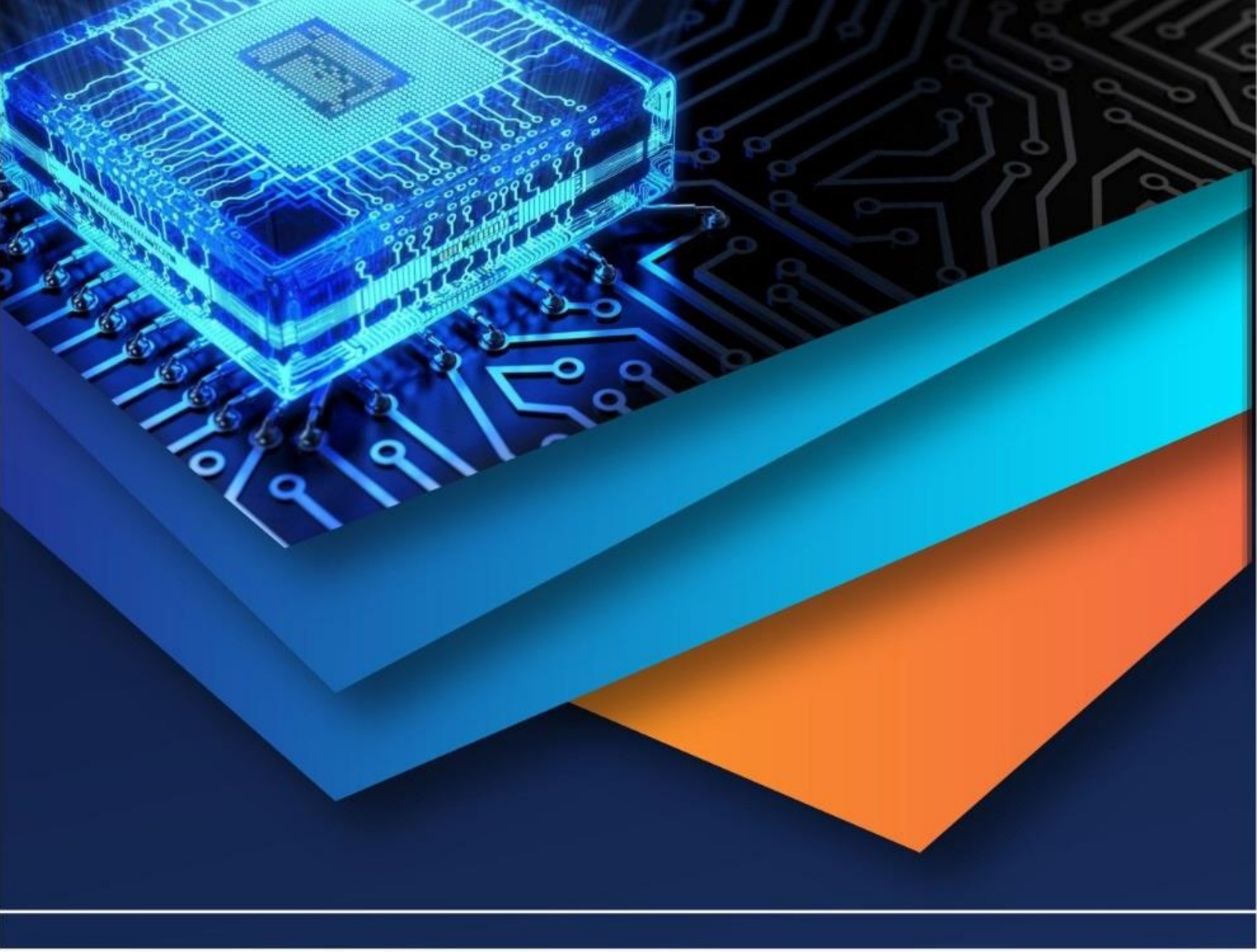
This method can be used not only for monuments that are undergoing full renovation, but also for graphic renovation. This method may also create opportunities for computerization of repair projects in the future.

So, the laws of harmony, which were used by architects in the sixties and served as a reliable program for thousands of years, that is, as a method of architectural design, serve as a theoretical "bridge" connecting the present with the past. can be sure that it will.

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