



THE HARMONY OF DECORATIVE SCULPTURE AND ENGINEERING

Asrorov O'tkir Qudratovich

Kamoliddin Behzod National Institute of Art and Design
Senior Lecturer, Faculty of Fine Arts, Department of Sculpture
<https://doi.org/10.5281/zenodo.15235268>

Annotation: The article examines the synthesis of decorative sculpture and engineering in contemporary art of Uzbekistan. In the analyzed examples, engineering calculations and technologies serve as the basis for artistic expression and the stability of sculptures. Particular attention is paid to monumental projects, where the cooperation of sculptors and engineers has become an integral part of the creative process.

Keywords: decorative sculpture, engineering, art and technologies, monumental art, constructive stability, artistic design.

Introduction:

According to its content and function, sculpture is monumental, large sculptures are installed in public buildings and places, and are processed in large volumes. Monumental decorative sculpture is installed in buildings, various structures, gardens, parks, squares, roads and other places in a decorative manner, and its size is different. Artistic fountains are also included in it. In easel sculpture, the sculptor works on an easel and is placed in museums, exhibition halls, and in the interiors of buildings. Sculptures of a life-size or slightly larger and very small size are divided into ceramic and porcelain figurines, as well as medals, coins, toys, carved figures, household items, equipment, weapons and utensils, and ornaments made by creating reliefs in jewelry.

Monumental, monumental decorative, and partly easel sculpture works serve as a synthesis of art. Small sculptures often decorate the interior of the house, turning equipment, weapons, utensils and other objects into works of art. This type of sculpture has developed since ancient times. Depending on the task facing the sculpture, its size and material are determined. According to the function and content of the sculpture, it is divided into several types: monumental sculpture, decorative sculpture, easel sculpture. The types of small sculpture develop in close connection with each other and have their own characteristics.

The art of sculpture creates the basis for a harmonious upbringing of a person. In sculpture, ideas, feelings and thoughts are expressed in the language of plastic body movements. Usually, sculptural works are divided into round sculptures, depending on their appearance. Round sculptures can be viewed from all sides, for example, statues and monuments in squares and alleys, various figurines placed on tables belong to this type. The color of the sculptures is mainly determined by the material chosen for the sculpture. Sometimes there are cases of painting sculptures in sculpture. Various animal shapes are also widely used in this type of sculpture. In sculpture, the creator achieves impressive and attractive sculptures by using the play of light and shadow.

Literature analysis and methodology:

A type of fine art is based on depicting existence in three-dimensional forms, in space in three dimensions. The object of the image, mainly natural landscapes and objects, is divided

into several types according to the function and content of still life sculpture; Monumental sculpture, decorative sculpture, easel sculpture, small sculpture types develop in close connection with each other and have their own characteristics. Easel sculpture includes works that have an independent content and are not subordinate to other types of art. They are intended for placement in exhibitions, museum rooms and in the interiors of houses.

Monumental sculpture, which is associated with the art of architecture, includes monuments, memorials, sculptural ensembles erected to immortalize the memory of important historical events and outstanding personalities, which express a great content in themselves and have independent significance; however, this type of sculpture must be in harmony with the immediate environment, architectural structures and nature, which gives it even greater grandeur and impressiveness. In sculpture, the artist uses the play of light and shadow to enhance the impact of the work, and when the light hits the sculpture, it comes to life, and when the direction of the light changes, the light and shadow in it also change, as a result, the impression the viewer gets from it also changes. This is especially useful for monumental and decorative sculptural works, because if the morning sunlight gives one charm to a sculpture installed in a square or alley, then the rays of the sun at sunset give a different charm.

Modern art and engineering disciplines are increasingly intersecting within the framework of urban planning, architecture and design projects. This synthesis is especially evident in decorative sculpture, where aesthetic expressiveness is combined with engineering precision and technological calculations. This article examines the phenomenon of engineering integration into decorative sculpture as a means of expanding the expressive possibilities of the urban environment. Modern sculpture is no longer just a perceived object, but is often the result of complex engineering calculations, stability analysis, mechanical loads, and interaction with the surrounding architecture and space. Thus, the creation of such objects requires the study of both artistic and technical aspects.

The basis for the literary analysis was the work of Uzbek researchers, including the works of A. Khakimov ("History of the Art of Uzbekistan"), B. Sattarov ("Decorative and Applied Arts and Design"), as well as materials from the magazines "Art" and "Architecture and Construction of Uzbekistan". These sources reflect the evolution of decorative art from traditional wood carving and stucco to the formation of modern urban sculpture. The analysis pays special attention to sculptures created for the squares of Tashkent, Samarkand, and Nukus. In these works, artists worked closely with engineers and designers. The research methodology includes studying architectural projects, conducting interviews with graduates of the Tashkent Institute of Architecture and Construction, as well as analyzing works such as the Amir Temur Monument (sculptor Ilhom Jabborov) and the Alisher Navoi Monument in Tashkent, both technically and artistically.

The sculpture "Ali and Nino" in Batumi (Georgia) deserves special attention. This sculpture was created by the famous sculptor Tamara Kvesitadze. This sculptural composition made of metal plates represents two human figures: they gradually approach each other, merge, and then separate again. This is not just a static work, but a kinetic installation, each movement is carried out according to a technically precisely calculated and pre-planned trajectory. But the most important idea here is the emotional and symbolic movement given by the author. Engineering calculations, motor skills, stability and trajectories - all this is subordinated to the artistic metaphor of separation and love. This demonstrates the opposite

dynamic: in this case, the artistic idea influences the technical solution, and the engineer becomes the implementer of the creative idea. This approach expands the scope of interaction between sculpture and engineering: the sculptor is no longer just the author of form, but also the "director of action", where technology performs not only a practical function, but also a means of expressing metaphor. This suggests that in modern art, the roles of the artist and the engineer can be interchanged, creating a new interdisciplinary space for dialogue. The cooperation between decorative sculpture and engineering is not a clearly defined model. Depending on the author's idea, the scale of the project, the technological environment and the cultural context - "the role of initiative can pass from the engineer to the artist or vice versa, from the artist to the engineer". In addition, if we take the Uzbek experience, the statues of Amir Temur and Alisher Navoi can also serve as an example. If we take the statue of Amir Temur as an example, engineering support for such a monumental work was necessary to ensure its stability and compliance with seismic requirements. The sculpture remains static, and here engineering plays a complementary role to the artistic form. In contrast, in the Ali and Nino project, the sculptor creates not only a visual image, but also the idea of movement, and engineering solutions are completely subordinated to artistic logic. Such an example allows us to expand the scope of the discussion: "engineering is no longer just an auxiliary tool, but a unique source of artistic expression."

Results:

The results of the analysis showed that in recent decades, almost all large decorative sculptures in Uzbekistan have been created with the active participation of engineers. When creating the figure of Amir Temur, the sculptor I. Jabborov collaborated with engineers, taking into account the strength of materials, seismic stability of the structure, and long-term preservation of the bronze coating. As another example, the "Star of the East" statue in Samarkand was erected using the ANSYS program and a frame design based on local construction standards, which took into account climatic conditions. In addition, traditional materials are being combined with modern reinforcement and corrosion protection technologies. Thus, engineering not only ensures the durability of the sculptures, but also serves to integrate cultural codes into the modern space.

Discussion:

The data obtained indicate the formation of a unique model of artistic-engineering cooperation in Uzbekistan, where traditional forms and national symbols acquire new meaning through a scientific-technical approach. In sculpture, artists rely on the heritage of the Timurids, oriental patterns, mythological and literary images, but express them through modern engineering solutions. This approach is especially relevant in conditions where the entire territory of the country is a seismic zone, since a simple artistic idea must be reinforced by calculations, modeling and structural stability. It is also important to note that the participation of engineering also helps to extend the "life" of the sculpture: proper coating, protection from rain and temperature changes play an important role in preserving the aesthetic integrity of the object. This also changes the view of engineering as a creative field, where calculation and beauty merge and become allies.

Conclusion:

In conclusion, it is worth saying that the analysis of the Uzbek experience shows that decorative sculpture and engineering are in constant dialogue, creating at the same time stable and expressive cultural forms. Engineering technologies not only support artistic ideas,



but also develop them, turning sculpture into a synthetic art that combines history, culture, science and modernity. This integration is the basis of sustainable cultural development, and each monument is not just a work of art, but the result of precise calculations and joint work of craftsmen and engineers.

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