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MODERN ARCHITECTURE'S RELATIONSHIP WITH FOLK ARCHITECTURE

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Abstract

This article focuses on the role and importance of folk architecture in modern architecture. The application of traditional architectural form and decorative elements in modern architecture, their functional, cultural and aesthetic harmonization are studied. This process develops on the principle of continuity and serves to transmit to future generations the knowledge and skills that have been formed through historical stages.

Keywords: Folk architecture, traditionality, engineering, geometry, mathematics, arch, dome, ornaments, local building materials, composition, modern architecture, sustainable development.

Introduction:

Cultural heritage is an important component of human development, reflecting the formation and development of society's culture from ancient times to the present. In particular, the achievements and experiences embodied in architectural heritage serve as a solid foundation for the development of modern architecture. This process develops on the principle of continuity and serves to convey to future generations the knowledge and skills that have been formed through historical stages.

Cultural heritage has also revealed our culture to some extent from ancient times to the present. These cultural and architectural achievements and experiences serve as the basis of our modern architecture. Going through complex periods, it gradually presents modern steps to future periods. Of course, the role of the

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scientific approach and architectural personnel is great in this. Especially, the growth and development that arises on the basis of folk architecture creates improvements. The general direction creates laws and rules, gives new perspectives in architecture (new volumetric structures), new solutions in urban planning, regional climatic conditions, landscape architecture. It encompasses new ideas and presents them in a formal way. This direction is formed on the basis of new concepts.

The city is seen as an organism, and skilled master-architects and creators demonstrate their creativity. Folk architecture grows and develops side by side with parallel artistic architecture (monumental architecture). Their union becomes the reason for the birth of modern architecture of its time.

World architecture also exerts its influence. Theoretical research in the field increases together with practice. Solutions found to problems that arise during the development period give rise to innovations.

Increasing attention to traditional materials (mainly technology) and improving them on the basis of new technologies without changing their natural properties remains one of the urgent problems facing science.

Basing modern architecture on folk architecture is an important factor in forming a stable, functional and aesthetic environment. By deeply studying the national architectural heritage and reinterpreting it based on modern requirements, it is possible to achieve a harmony of originality and innovation in architecture. The conducted analysis shows that folk architecture is an important theoretical and practical source for modern architecture. The principles formed in it are of great importance in ensuring environmental sustainability, energy efficiency and cultural identity.

Main part:

The existence of historical heritage is a solid foundation for future development. It is important to study, analyze and continue the creative heritage of master

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architects who worked in the past based on modern requirements. On this basis, the development of modern architecture can be achieved by forming a national architectural style and popularizing it widely. The following factors are of great importance in the formation of modern architecture: the creation of new and high-quality building materials, sufficient financial resources, the establishment of a high level of professional cooperation and exchange of ideas between architects, increased demand in the field, emphasis on compactness, comfort, aesthetics and artistry in buildings, the use of innovative and constructive solutions, taking into account the functional characteristics of buildings when placing them, effective use of the territory, and taking into account long-term prospects (50-100 years, foresight), and other factors.

The role of a scientific approach and highly qualified architectural personnel in the development of modern architecture is incomparable. In particular, the development processes that arise based on the traditions of folk architecture provide a new qualitative stage in architecture. This, in turn, forms general theoretical and practical laws, creating new volumetric and planning solutions in architecture, innovative approaches in urban planning, models adapted to regional climatic conditions, and modern forms in landscape architecture.

The field of architecture, which has passed through various socio-economic and cultural stages in the process of historical development, is currently developing on the basis of a scientific approach, a combination of theory and practice. At the same time, new ideas and concepts are being formed in the field of architecture, through which effective methods of organizing space are being developed. The city is considered as a holistic organism, in which skilled master architects demonstrate their creative potential. The harmonious development of folk architecture and monumental architecture determines the appearance of modern architecture of each era.

It is necessary to develop international cooperation, organize regular meetings with leading foreign architects and establish an exchange of advanced

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experiences. The conclusion of mutually beneficial agreements with reputable foreign architectural institutions and their continuous implementation will have a positive impact on the development of national architecture. Folk architecture was formed on the basis of centuries-old experience of mankind, and it developed inextricably linked with natural and climatic conditions, social lifestyle and cultural values. As emphasized in scientific literature, folk architecture is manifested as a form of architecture most adapted to the local environment.



Figure 1. The traditional courtyard concept is transformed into an atrium-shaped space in modern residential buildings.

In the traditional residential architecture formed in the territory of Central Asia, elements such as an inner courtyard, veranda, thick walls and the use of natural materials were widely used. These solutions had not only aesthetic, but also functional significance, allowing adaptation to climatic conditions. From this point of view, folk architecture is considered a system that ensures a balance between nature and man. The traditional courtyard concept is being used in modern residential buildings in the form of an atrium. This serves to improve natural light and ventilation in buildings.

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The elements of the atrium are being processed in the facade composition with modern materials, enriching them aesthetically and functionally. One of the important features of folk architecture is the effective use of local materials. Materials such as paxsa, raw brick and wood are natural and environmentally safe, ensuring energy efficiency.

In modern architecture, high efficiency has been achieved by combining these materials with new technologies. For example, by combining traditional brick construction with modern insulation materials, the energy efficiency of buildings is being increased.

The Ichan-Kala complex in Khiva is a vivid example of Central Asian folk architecture. The buildings in this area are distinguished by their features such as internal courtyard layouts, narrow streets, and the use of local materials. The thick walls and internal courtyard system used in Ichan-Kala served as an effective solution for adapting to climatic conditions. These solutions can be considered in harmony with the principles of "passive design" in modern architecture. Also, the composition of the buildings in the complex maintains human scale and spatial proportion, which is also relevant in modern architecture.



2-rasm. Ichan-qal'ada qo'llanilgan qalin devorlar va ichki hovli tizimi



3-rasm. Issiq iqlimda soya va mikroiklim yaratuvchi tor ko'chalar majmuasi

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The first image shows the thick-walled buildings made of mud and baked bricks and their inner courtyard structure. These walls do not allow heat to enter during the day (act as thermal mass), while the inner courtyard provides cool air circulation, making it an ideal example of modern passive design (climate control without energy consumption). The narrow streets between the high walls in the second image limit the direct sunlight and create permanent shadow areas throughout the day. Also, the height of the buildings and the width of the streets are designed to be very human-sized and comfortable (on a human scale).

During the reconstruction of the Hazrati Imam complex in Tashkent, traditional architectural elements were combined with modern technologies. The complex used modern building materials and engineering solutions while preserving traditional elements such as domes, roofs and porches. This served to expand its functional capabilities while preserving the national character of the architecture.

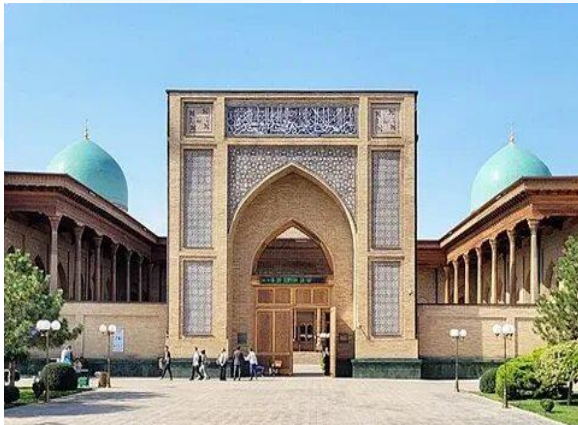


Figure 4. Spatial-functional harmony of traditional national roofs and domes



Figure 5. Nationality and its implementation in modern construction technologies

The image shows the main symbol of the complex, the huge porch (entrance) and the blue dome. Here, the art of tiling (complex geometric patterns) inherited from our ancestors has been preserved, but today's durable structural materials and engineering calculations were used in their construction. The second image clearly shows the large area of the complex and its double symmetrical domes.

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During the modern reconstruction, the internal and external engineering systems of the buildings (lighting, climate control, earthquake resistance and the ability to accommodate a large audience) were completely updated, and modern "infrastructure" was placed inside the traditional form. Although traditional wood carving was used on the porches and columns here, the load-distributing systems of their foundation and upper part are based on completely modern engineering solutions.

The Louvre Abu Dhabi Museum is a vivid example of the international application of the principles of folk architecture in modern architecture. In this object, the principle of "play of shadow and light" inherent in traditional Arab architecture is implemented through a modern construction. Light filtered through a metal dome creates a natural microclimate in the interior. This solution is considered a modern interpretation of the principle of casting shadows through palm leaves in traditional architecture. In this regard, this object is an example of innovative processing of folk architectural ideas.



Image 6. Inspired by the famous palm tree shadows under the dome

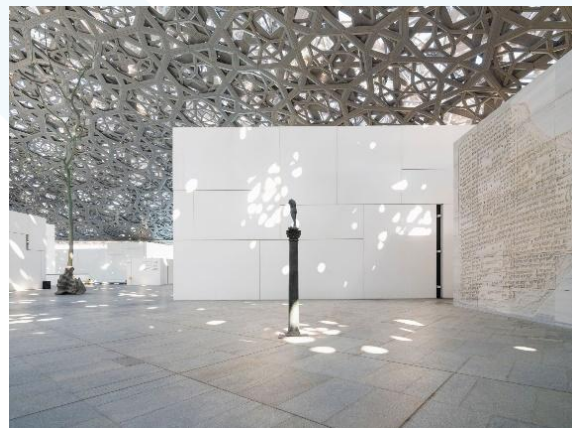


Figure 7. Traditional Arab villages and a huge dome with a "Rain of Light" effect

The "play of light and shadow" allows you to see the sunlight filtering through the geometric shapes inside. This is reminiscent of the natural shadow and light chain that leaks through the palm leaves that cover the roof of ancient Arab markets (souks). This effect is officially called "Rain of Light" in the museum.

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Passive microclimate and innovative dome This huge dome covering the museum and weighing 7,500 tons consists of a complex star-shaped metal pattern consisting of 8 different layers (four outer and four inner layers). It protects the interior of the building from overheating in the hot Arabian desert climate. It is clearly visible that the building is surrounded by seawater. The shadow created by the metal dome and the evaporation of water from the open basins act as natural air conditioning inside the building and create a cool microclimate.

The branch of the Pompidou Center in France in the city of Metz is another example of inspiration from national traditions in modern architecture. The roof of the building is designed in a way inspired by local textile traditions. The organic shape and lattice structure of the roof structure are an expression of traditional craft elements in modern architecture. This shows the possibility of reflecting the national cultural heritage in an innovative way.

Designed by Japanese architect Shigeru Ban and French architect Jean de Gastin, the Centre Pompidou-Metz in Metz is a great example of how elements of folk craftsmanship merge with modern engineering. The wooden structure of the roof is clearly visible in the interior. Architect Shigeru Ban was inspired by traditional Chinese and Asian woven hats and the local art of basket weaving to create this intricate fiber structure.



Figure 8. A special waterproof white membrane covering with fiberglass and Teflon coating on a large wooden frame.

Here, the wooden beams that cross each other are intertwined like the fibers of a cloth. The following images give a general view of the roof of the building. The

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roof combines the shapes of squares, hexagons, and circles when viewed from above, and then undulates towards the ground.

This huge wooden frame is covered with a special waterproof white membrane with fiberglass and Teflon coating, which gives the building both modernity and lightness. 95% of the roof structure is made of renewable and environmentally friendly material - spruce wood (glulam). This is the highest technological expression of the principle of using natural materials in folk architecture.

Conclusion:

As long as we have a history, the future will be the same. How many master architects have created before us. We need to study the work of these architects and, having concluded, ensure continuity in the style characteristic of the time. It is necessary to study and apply the styles of famous architects. That is, it requires sorting out and studying (analyzing, synthesizing) the styles of Uzbekistan, Asia, Europe and other countries with developed architecture in the East.

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