

Types of domes of architectural monuments of Uzbekistan

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Abstract

The article analyzes the shape of the domes in Central Asia, the rich contribution of the ancient Turks to the architectural creativity in this area, the types of single, domed and muqarnas used in the ancient historical and cultural monuments, unique art and architecture of the Uzbek people.

Keywords

Dome building, madrasa, mausoleum, monument, muqarnas, roof, arch.

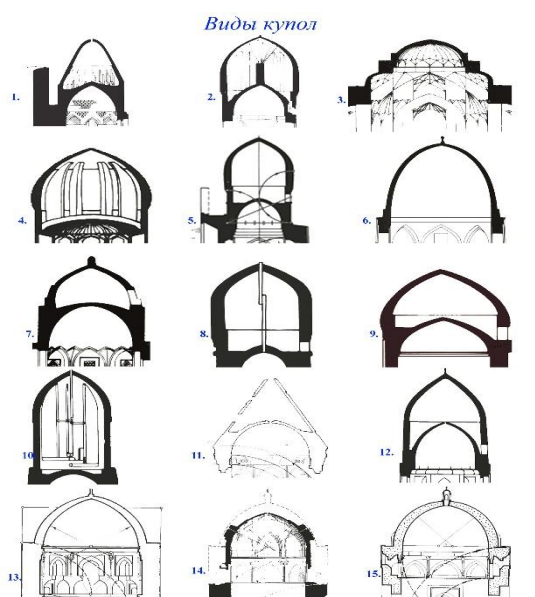
INTRODUCTION

One of the main tasks to raise our national spirituality and values is to study the factors and criteria that do not affect the architectural monuments of today, and to better understand their role in this regard.

In some cases it is impossible to imagine the history, spirituality, customs, traditions, life values of any people or nation. In this regard, of course, the spiritual heritage, cultural riches, ancient historical monuments serve as one of the most important factors.

This fact is confirmed by the fact that more than four thousand material and spiritual monuments in the territory of our country are included in the UNESCO list as a unique example of world heritage[1]. We know that the Uzbek people are world famous for their ancient historical and cultural monuments, unique art and their architecture. Cities such as Samarkand, Bukhara, Khiva, Shakhrisabz, Tashkent testify to the fact that the history of culture and architecture of Uzbekistan began long ago.

Types of mounds, domes and muqarnas. Measuring mounds and arches We understand a number of architectural terms by describing three types of cylindrical (column) wall size - falaka, hoop and daf. Then we can see the difference between the odd and the arched forms.



1. Дехангир в Шахрисабз 2. Гур-Эмир в Самарканд (XIV-XV вв); 3. Мечеть в Ташкенте; 4. Ал-Сарай в Самарканде; 5. Мавзолей Тухта-ата в Самарканде; 6. Мавзолей Рузбей в Самарканде; 7. Мавзолей Ахмед Яссавий в Ташкенте; 8. Туман-ата в Самарканде; 9. Ширин-бег-ата в Самарканде; 10. Чупан-ата в Самарканде; 11. Мавзолей Музаффар в Ташкенте; 12. Казы-аде Руш в Самарканде; 13. Мавзолей Араб-Ата в Ташкенте; 14. Мавзолей султана Саидхана; 15. Мавзолей Саманидов в Бухаре (IX-X вв).

THEORITICAL BACKGROUND

The difference between an arc and an arch is that the thickness of the arc is less than the width (ard) (vus) and the thickness of the arch is greater than the width (arc). The thickness of the ridge (ard) is called the length of the ridge in the arch. Cauchy brings out five different ways of making the arch of varying complexity.

Giyosiddin Kashi also gave a table for determining the size of facades of hills and arches by multiplying them by their thickness, and explained the calculation procedure and rules. He even showed a way to find dimensions related to the length of curved arcs using trigonometric functions (sine, cosine).

The order of measurement of domes: Giyosiddin Kashi divides the dome into four types:

1. Kurra - a hollow semicircle (sphere);
2. Qata - in the form of a segment of a sphere;

3. Mahrut - the basis of a polygonal pyramid;

4. Single - a spheroconic dome formed by the rotation of a curved line around an axis.

The third and fourth types of domes are especially common in Central Asian architecture. Cauchy shows the ways to calculate the surface, surface, and volume of domes[2].

About the measurement of the surface of the muqarnas The muqarnas are an overlapping decorative ornament consisting of a system of individual bowls on the inside of the arches and arches. Muqarnas is made on the basis of a very complex drawing project.

Kashi calls the muqarnas cup a byte, each row on top of it a layer, and the largest basic modulus of the cup is called the scale.

There are four types of muqarnas.

1. Minbar - a simple muqarnas;
2. At-tiyn - pottery muqarnas;
3. Al-Qaws - a muqarnas in the form of a bow;

4. Ash-Shirozi - Shirazi muqarnas.

Kashi also showed the order of making the repeating element of the muqarnas cup. The builders took the base of the rectangle equal to the muqarnas scale (modulus) and set the height twice as long.

Kashi's knowledge of the use of modular-scale units in the construction of muqarnas is of particular interest and of fundamental importance for the history of architecture.

The dome is a spherical sphere with a spatial dimension, a history circle, a rectangle, a continuous polygon. Also on top of the walls of polygonal buildings and large structures, sometimes a circular device that combines columns, the surface of the round raw brick, baked brick, stone concrete and other building materials on the base is in the form of smooth, edged, ribbed slabs[2].

The need for the appearance of the dome arose for 3 reasons:

1. natural conditions, necessities of life;
2. availability of available building materials; especially in areas where wood was scarce, architects attached more domed roofs;
3. The high artistic effect of the form, the architectural image is a masterpiece.

The first appearances of the dome were found in primitive human settlements, natural caves, and later in basements, huts made of wood and straw, reeds, animal skins, and felt-covered grass, and their shape became more complex during social development. In the architecture of the peoples of the world there are simple types of domes, round, round, truss (sail, trump) and other types. The dome adorns the building both externally and internally[5].

Observing and analyzing the shape of the domes in Central Asia, one can feel that the ancient Turks made a rich contribution to the architectural creativity in this direction[6]. At the beginning of the domes, the image of grass (land) created by human thought, that is, through wooden, reed devices, cotton, brick doppi (semi-spherical) kulokhi (spheroconic) in size, and over time developed on the basis of new possibilities, became a high artistic sculpture[7].



Figure 2. Bibikhanum architectural ensemble

The earliest appearances of the dome In Greek and Roman architecture, the hemispherical (hemispherical) dome types were widely used in large public and religious buildings to cover the surface of chorsi, round rooms.

DISCUSSIONS

The large round building of the Pantheon in Rome (125 AD) is mounted on a rotunda[8]. The oldest dome is a hemispherical dome. The Italian term for the dome "kupala" (sirola - barrel) is included in the dictionary of world architecture.

CONCLUSION

The huge dome of the famous Hagia Sophia in Istanbul joins the ranks of the most ancient domed buildings.

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CONFLICT OF INTEREST STATEMENT:

The author declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.