

Typology of Opening Arrays in the Historical city of Masouleh (A Case study of Masjedbar Neighborhood)

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Introduction

Decorations, as important components, have long been one of and the most stable characteristics of Islamic architecture and art. One type of these decorations is openings. In addition to practical aspects, openings have presented diversity and enclosing beauty in Iranian architecture. The surface of the openings has mostly been decorated with geometric and vegetal patterns. The city of Masouleh has various geometric openings that have been embedded in this city for many centuries. Masouleh is located near (55 km away from) Rasht in Gilan province and in the southwest of Foman in a mountainous area with a height of 1050 meters above the sea level. This city is registered in the list of national monuments under number 1090. In the present research, an attempt has been made to analyze the types of decorations in the openings, the abundance of decorations in each of the openings, the concepts of decorations, and the drawing of arrays in Masjedbar openings.

Research Method

The current research aims to answer these questions: how many levels do the openings of Masjedbar neighborhood include? What concepts have been effective in the formation of arrays of openings in Masjedbar? In this research, an attempt has been made to analyze the decorations of the openings of 26 buildings in Masjedbar neighborhood, which are older than other residential buildings in this neighborhood. The method is descriptive-analytical and comparative. In the first step, the pictures of openings were prepared based on field surveys. In the next step, they were drawn by AutoCAD 2023 software. Also, to understand the proper amount of lighting, the dimensions of the openings, and the influence of the arrays on the lighting, optical simulation software "VELUX Daylight Visualizer 3" was used. In the last step, the results of the types of decorations in the openings, the abundance of decorations in each, the concepts of decorations, and the drawing method of the arrays in Masjedbar openings were presented.

Research Findings

The architecture of Masouleh has attracted the attention of many domestic and foreign tourists and researchers due to the use of authentic Iranian Islamic arts and its great compatibility with the nature and culture of society. The openings of the historical city of Masouleh, especially Masjedbar neighborhood, are one of the oldest and most beautiful arts where one can see the originality and artistic creativity of the artists of Masouleh and the province. Masjedbar neighborhood in Masouleh is considered one of the centers of the early formation of Masouleh; because of the presence of the mausoleum of Awn ibn Ali, it has earned special sanctity among the habitat of Masouleh. To meet the needs of its users, Masouleh's buildings have various types of integrated openings, Sarbariahs with inscriptions (single), Sarbariahs without border design (single), openings without Sarbariah, and Orosies. The openings often consist of Girih-tiling and Ghavarebori decorations. Masouleh integrated openings have a two-part structure Sarbariah and bariah. These types of openings are the most common types of windows in Masjedbar neighborhood. The upper opening of the window, which is called Sarbariah, is fixed, and the bariah part consists of two parts that can be separated from each other. Sarbariahs are inscribed (single), have minimal decorations, and possess a minimum amount of space for light and ventilation. In the opening part of the bariah, a door without decorations is used, and the Sarbariah has two parts of girih-tiling decorations on the border and the middle inscription. Sarbariahs do not have a border design (single), have a similar structural and function similar to the windows of inscribed Sarbariahs (single) of Masjedbar neighborhood. Openings without Sarbariah in Masjedbar neighborhood have a surface with full light absorption capability in the bariah section and do not have Sarbariah or upper opening. The Orosies or rising windows of Masjedbar neighborhood have a structure with many Girih-tiling and Ghavarebori decorations. From the point of view of receiving light and natural ventilation of the interior, the Orosies are of a higher level than all other Masjedbar openings and have been used in the residential buildings and mosques of this neighborhood. The Orosies of residential houses have more decorations compared to the Orosies of mosques in Masjedbar neighborhood.

Conclusion

The research results show that Masjedbar openings are classified into five levels of integrated windows, openings without Sarbariah, Sarbariahs without inscriptions, Sarbariahs with inscriptions and Orosies. The present research results show that 19 geometric arrays of Girih-tiling and Ghavarebori were used in the structure of openings in Masjedbar. Ghavarebori arrays with checkered design, an eight-square shamseh knot, and a four-square knot are the most frequent patterns in the openings of Masjedbar neighborhood. The results of natural light reception analysis show that integrated openings, without Sarbariah and Orosies have a good performance in receiving light; Sarbariahs with inscriptions (single) and Sarbariahs without border design (single) have poor performance in absorbing natural light in Masjedbar neighborhood. The results of investigating the shapes of the geometric arrays of Masjedbar openings show that the plant shapes in the arrays of the openings are often taken from the designs and patterns of flowers and historical and mythological plants of Iran, which were very common in Iran's pre-Islamic buildings. Cypress tree, paisley, and lotus motifs are included in this category. Religious and cultural motifs and symbols are other effective factors in the formation of arrays of Masjedbar openings. Ghavarebori, chalipah, and chaharqol are more widely used in the openings of Masjedbar's religious buildings. The rhombus square knot is one of the few patterns native to Gilan in the arrays of Masjedbar openings. This pattern is often used in the openings of residential buildings and is a symbol of mat weaving in the plains of Gilan. The combination of numbers and basic geometric shapes is another effective concept on the formation of arrays of Masjedbar openings. These shapes, involving a combination of number eight, four and circular, rectangular and square motifs, are among the most used patterns in Masjedbar's opening arrays.

Keywords: array, opening, Girih-tiling, Masouleh, Masjedbar.