



A study of transparency behaviour of domes in Islamic mosque with emphasis on the notion of the spiritual lighting

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Abstract

This research studies the concept of transparency behaviour of domes in Islamic mosque, with emphasis on the notion of the spiritual lighting. The topic of this study is important not only because it allows for a better understanding of the different types and purposes of these domes, but also because through calculating the veiling and revealing factor of each type, one can regenerate the use of dome in the architecture. In the analysis of quantitative factors, the quality of light in space and how to show the influence of Iranian architecture, structural elements play a prominent role. In other words: Phrases related architectural lighting control within architecture elements that define spatial quality, are to identify and understand the value and meaning of the concept of light, began to attention to the importance of light in architecture. The research method was used for which it is the consecutive combination explanation. Here, in the first stage, the quantitative data collected and analyzed, then in the second stage qualitative data collected and analyzed. Finally, both qualitative and quantitative analyzes are interpreted together.

The present study uses field measurements that the instrument used to collect the data, cameras and imaging and to take accurate of brightness quantitative information, and the digital photometer and simple devices were used, and its information has been gathered from documents and fieldwork. In this way the fieldwork for photometry to factors of physical and quantitative impact on the quality of light were studied and after identifying the physical factors affecting the quality of lighting the domes, the defining quality components transparency in relation to the characteristics of quality discussed and with quality components explaining to evaluate the degree of transparency of the domes of mosques reviewed, were studied. After examining different examples, seven residential mosque (Taj al-Mulk dome Isfahan Jame Mosque, Sheikh Lotfollah Mosque of Isfahan, Blue Mosque of Tabriz, Barsian mosque, Imam



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Mosque in Isfahan, Jame Mosque of Yazd, Jame Mosque Ardestān) were chosen in the Iranian Islamic architecture.

The tools used to gather the data were cameras for photography and videorecording and a photometer for measuring light levels. The analysis of the information gathered indicates that the different characteristics of domes all in their own way affect the level of spirituality and purity and transparency that the dome provides. By examining the physical properties of a dome, transparency evokes components include: Unity (Unity means the harmony of the whole composition. The parts of a composition made to work together as a total visual theme. Unity is the relationship among the elements of a visual that helps all the elements function together. Unity gives a sense of oneness to a visual image. In other words, the words and the images work together to create meaning.), spatial continuity of light (a way to show how one type of space is directly linked to another by the light elements), the relationship between inside and outside (Physical or sensual links between inside and outside must be defined in some way that can characterize unique identity of each space and also establish proper interaction in whole architectural space. This proper interaction can create sense of consistency and integrity between these two spatial realms and furthermore express a link and boundary that if it is developed causes to create another space that it is not inside or outside but it poses some character of each kind; this ambiguous moment of spatial experience, with focus as a connection between inside and outside, can be named "in-between"), lightness and dematerialization, resilience and adaptability, utility and readability (reading space is a process of using spatial knowledge appropriately after acquiring it and processing it in the mind), expansion spatial and light balance in space, was determined, each of which is associated with the physical properties of the atmosphere of a traditional mosque dome were examined, that indicated the highest degree of transparency in the dome of Sheikh Lotfollah Mosque with 95%, and lowest degree of transparency is in the dome of Ardestān Mosque with 50%. The data analysis shows, all different characteristic domes with our way affect on the spirituality and the skylights creates transparency, and show that expression of spiritual clarity on the architecture of mosques in their bilateral relations with cover and illumination. By better understanding the effects of these characteristics, it is possible to design modern domes and skylight that are better suited to contemporary tasks.

Keywords: The mosque, the performance of skylights, transparency, transparency, spiritual lighting

