

The Use of Geometry in Traditional Iranian Architecture: Evidences from Sheikh Lotfollah Mosque in Isfahan

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Abstract

Geometric patterns have been widely used in Iranian architecture. In this descriptive study, our purpose is to evaluate the use of geometry in Persian architecture by examining some geometric structures (*Karbandi*, *Muqarnas*, and motifs) which exist in Monuments of Isfahan, Iran including Sheikh Lotfollah Mosque which is one of the architectural masterpieces of Safavid Iranian architecture. By giving some examples of the use of geometry in Iran, it can be found out *Karbandi*, *Muqarnas*, and *motifs* were used widely in all parts of Iran due to its unique functions. Persian architecture has composed a set of intersecting vaults with specific arches in three- dimensional spaces. By examining how form and space are ordered in Sheikh Lotfollah Mosque, we concluded that geometry had a fundamental and decisive role in traditional Iranian architecture; specifying the dimensions and proportions of the building components and adjusting the relationship between them is possible with appropriate use of geometry.

Keywords: Geometry, Iranian Traditional architecture, Karbandi, Muqarnas, MotifsT Sheikh Lotfollah Mosque