RESEARCH ARTICLE

Bahri Mamluk muqarnas portals in Egypt: Survey and analysis

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Abstract

Muqarnas (stalactite vault) is a distinctive structural and configurational feature of Islamic architecture. It is used to provide a transition from a square plan to a circular perimeter, thus allowing a domical or semi-domical space to be erected above a square or rectangular layout. It is similar to the Roman pendentive in its structural logic but quite different in form and architectonic detail. The use of muqarnas has become ubiquitous in Islamic architecture and was applied structurally and decoratively above major spaces in mosques and mausoleums, wall niches, facades, arches, friezes, and entrance portals. This paper provides a historical, typological, and stylistic analysis of Bahri Mamluk muqarnas portals developed in Cairo, Egypt during the 13th and 14th centuries. Due to the complexity and breadth of this undertaking, the current study focuses on the earliest 10 monuments that exemplify the type and examines the origin, meaning, and development of muqarnas portals in Egypt. Local and foreign influences are analyzed with an eye on identifying similarities and variations in terms of constructability, geometry, and complexity of muqarnas configurations. The paper concludes with a discussion of the primary innovative features of Bahri Mamluk Muqarnas and their effect on subsequent muqarnas development in Egypt.

1. Introduction

Various studies have tackled the muqarnas dome and its origin, development, geometrical derivatives, and meaning (Creswell, 1978; Tabbaa, 1985; Bloom, 1988; Koliji, 2012). The 13th century plate found by the German excavation team at Takht-i Sulayman in Iran provided impetus for several studies that proposed different interpretations of the geometry and erection methods of muqarnas (Dold-Samplonius and Harmsen, 2005; Mohammad Ali Jalal, 2011). Most studies focus on developing a historical lineage, general typology, and a common geometrical analytic of the muqarnas.
This study, however, takes the position that muqarnas units across the Islamic world provided rich and multifaceted architectonic and structural vocabulary that defies formulaic or unitary understanding. The Muqarnas was employed freely and abundantly in different materials used in domes, mihrabs, portals, minarets, and facades of buildings in vast, disparate regions extending from Samarqand and Isfahan in the east, passing by Egypt and Syria, and stretching all the way to Spain and the western frontiers of the medieval Islamic world. Stone, brick, wood, stucco, terrazzo, and other muqarnas construction materials and erection techniques provided distinctive architectural expressions that warrant further locally bound studies. Grounded within and inspired by previous studies, this study examines the stone muqarnas of Bahri Mamluk portals developed in Cairo, Egypt during the 13th and 14th centuries. Local and foreign influences are analyzed with an eye on identifying similarities and variations in terms of constructability, geometry, and complexity of muqarnas configurations. The paper concludes with a discussion of the primary innovative features of Bahri Mamluk Muqarnas and their effect on subsequent muqarnas development in Egypt and other parts of the world.

Creswell (1956, p. 146) suggests that the muqarnas portal originated in the palace of the ruler at Samarra, where a deep entrance bay was surmounted by a semi-dome on a pair of squinches. This argument may be corroborated by another surviving muqarnas dome located near Samarra and known today as the shrine of Imam Al-Dawr (built circa 1090). The square layout of the building is topped by multiple tiers of octagonal drums with pronounced squinch units visible from inside and outside the building; in addition, two medieval miniature paintings of the city of Baghdad show stalactite configurations and hint to the Iraqi origin of the muqarnas dome (Tabbaa, 1985). Muqarnas configurations appeared in Cairo around the same period as in the minaret of Badr Al-Jamali, commonly known as Al-Juyushi (1085), the north wall of the city, and the façade niche hood and chamfered corner of Al-Aqmar mosque (1125). However, the multi-tiered muqarnas portal was...
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