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A Study on Traditional Houses with Domical Vault Roofs in Herat, Afghanistan- Their Typology and Construction

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Abstract

In the desert areas from the eastern Iran to western Afghanistan, traditional houses have curved roofs. As modernization progresses, such traditional houses are gradually disappearing from the region. However, in Herat, an old city in Western Afghanistan, traditional houses with domical vault are still left in their original form within the urban area. This study as the first step examines the distribution of traditional houses with domical vault roofs in Iran and Afghanistan to determine its boundary as well as the factors that impact their distribution. High-resolution satellite images, old photographs and literature of Iran and satellite images and data from field surveys in Afghanistan were used to determine their distribution. The findings of the study include maps showing the distribution of traditional houses with domical vault roofs and suggest that climatic and cultural factors are significant in determining house roof types.

As the second step, the study examines features of traditional houses with domical vault roofs in Herat through interviews of traditional builders and case studies of three houses including field surveys and interviews conducted with residents. Through this research, it finds that the structures of walls and domical vaults vary depending on the time of construction, number of stories and size of rooms inside the houses. The study also finds that the materials used for walls and roofs differ according to the economic conditions of the families.

As the final step, this study examines the historical development of the Bagh-e Dasht area with a focus on Dalans, where traditional houses with domical vault roofs have been well-preserved until today. The roof types of houses in the area are investigated through examining high resolution satellite images. The boundary of each building and space is determined by both a field survey and aerial photographs of the study area. A comprehensive field survey was then conducted to examine each space and building in the area. In addition, a questionnaire was distributed to the residents of the Dalan houses and interviews were conducted with the Wakil (Chief) of the area, a local historian, residents and traditional builders. The study found a distribution pattern where the Dalans and domical vault roof houses are located. The oldest part of Bagh-e Dasht area, the south, contains both Dalans and domical vault roof houses. The next oldest part, which is the north, only has domical vault roof houses. The rest of the area only has houses with modernized flat roofs. This observation provides an insight into the process of historical development in the Bagh-e Dasht area.

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