

Parametric Investigation of Brick Extrusion Patterns using Thermal Simulation.

Asmaa Hassan ,Khaled Tarabieh, Sherif Abdelmohsen, Rana Bahaa El-Dabaa.

Abstract

Bricks have historically been heavily utilized as an exterior wall material in buildings for their structural and aesthetic role. Numerous studies have attempted to explain the relative importance and impact of thermal mass and shading on energy performance, where difference in thermal mass could be achieved by means of the extrusion of some bricks with different extrusion values. However, the role of brick bond types, projections and ornamentation is not yet fully explored in the literature on exterior walls. This paper is part of an ongoing research that investigates the relationship between brick bond types, shape, and extrusion values, and their impact on energy performance in hot arid climates. Previous work examined the relationship between brick extrusions and energy efficiency. This paper aims to provide a parametric investigation of the impact of different brick distribution and extrusion patterns on overall energy performance.

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