Abstract

Effect of Day lighting Strategies on Thermal Performance in Historical Buildings. The city of Cairo in Egypt, as it was inscribed on the world heritage list in 1997 under the title of “Islamic Cairo” recognizing its absolutely unquestionable historical, archaeological and urbanistic importance. On the recommendation of the International Council for Monuments and Sites (ICOMOS), Historical Cairo proved over time to be one of the distinctive cities that contains a group of spatial relations, environmental and climatic solutions that made its urban fabric and architectural compositions able to interact efficiently with climate and local environment. The aim of this paper is to evaluate the day lighting design strategies that made “Islamic Cairo” a distinctive sustainable environmental city, these day lighting strategies shall be evaluated simultaneously in terms of indoor thermal comfort; to reach to the design criteria used by architects that time. These historical building will be virtually evaluated, using computer simulation. This research process could lead to a rediscovery of the indigenous responses to climate and local environment through the testing of regional performance of climate-responsive buildings which could lead also more regional design guidelines.

Keywords: Historical Building, Day Lighting, Energy Efficiency, Islamic Cairo.

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