

A Comparative Analysis about the Effects of a Courtyard in Indoor Thermal Environment of a Room with and without Transitional Space Adjacent to Courtyard of a House in Old Dhaka, Bangladesh

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Abstract : Attaining appropriate comfort conditions in a place where the climate is hot and humid can be perplexing. Especially, when it is resided at a congested place like old Dhaka Bangladesh, the provision of giving cross ventilation and building with proper orientation is quite difficult. Courtyards are the part of buildings which are used as space for outdoor household activities, social gathering and it is also proved to have indoor thermal comfort as an effect of courtyard. This paper aims to investigate the effect of courtyard in indoor thermal environment of a room adjacent to the courtyard and a room next to transitional space after a courtyard through field measurements of a case study house. The field measurement was conducted in a two-storey house. Among different aspects of thermal environment, the study of this paper is based on the analysis of temperature in both situations. Ventilation or air movement was considered to have no impact because of the rooms' layout and location. Other aspects and their variables were considered as constant (especially material) for accuracy and avoidance of confusion. This study focuses on the outcome that can ultimately contribute to the configuration of courtyards and in its relation to indoor space while achieving thermal comfort.

Keywords : courtyard, old Dhaka, temperature, thermal comfort, transitional space

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