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Color and texture of urban canyon as variables for outdoor thermal comfort in the tropics

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Architecture, through time has been an important factor that facilitates life styles and environmental comfort. The challenge for architects is to create psychologically and physically comfortable indoor and outdoor spaces. The outdoor public spaces have become the heart of the civic life of the city where people carry out their activities, and one that binds a community. Among public spaces “streets” are most significant. Urban Streets become urban canyons due to the rapid?? development of the cities. This study presents the results of a comparative study aiming to investigate the suitability of colours and textures used in urban canyons to contribute to lower ambient temperatures and to fight the urban heat island effect.

The impact of colour and surface textures has been analysed in an empirical manner and by simulations using ENVI-met software. The surface temperatures, air temperatures and THI values in selected streets are mainly analysed in an empirical manner. Also, ENVI-met simulations were used to observe the behaviour of colour and texture in different situations such as in “high albedo”, “low albedo”, “rough, matt surface”, “shiny, gloss surface” etc, in urban canyons. The study will contribute to selection of more appropriate colours and textures for outdoor urban application and thus assist to in fighting the heat island effect and improving outdoor thermal comfort conditions.

Key words: Thermal comfort, urban streets, urban canyon, color and texture, Albedo

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