Abstract

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Daylight Optimization: A Parametric Study of Urban Façades Design within Hybrid Settlements in Hot-Desert Climate

Unprecedented growth of hybrid settlements causes deterioration to the indoor environmental quality. Due to their narrow street-networks and fully packed urban fabric, lower floors are subjected to severe overshadow condition, which has adverse effects on the health of the inhabitants. This paper aims to investigate techniques to mitigate the under-lit indoor environment for a group of buildings with variable heights and orientations, with regard to the urban façades parameters. It reflects an intervention in an existing hybrid settlement, within hot-desert climate, to alter façades configurations for daylight optimization, and ultimately recover the lost indoor quality of users in such contexts.