

Comfort Needs and Energy Practices in Low-Income, Tropical Housing from a Socio-Technical Perspective

Authors : Tania Sharmin

Abstract : Energy use, overheating and thermal discomfort in low-income tropical housing remains an under-researched area. This research attempts to explore these aspects in the Loving Community, a housing colony created for former leprosy patients and their families in Ahmedabad in India. The living conditions in these households and working practices of the inhabitants in terms of how the building and its internal and external spaces are used, will be explored through interviews and monitoring which will be based on a household survey and a focus group discussion (FGD). The findings from the study will provide a unique and in-depth account of how the relocation of the affected households to the new, flood-resistant and architecturally-designed buildings may have affected the dwellers' household routines (health and well-being, comfort, satisfaction and working practices) and overall living conditions compared to those living in poorly-designed, existing low-income housings. The new houses were built under an innovative building project supported by De Montfort University Leicester (DMU)'s Square Mile India project. A comparison of newly-built and existing building typologies will reveal how building design can affect people's use of space and energy use. The findings will be helpful to design healthier, energy efficient and socially acceptable low-income housing in future, thus addressing United Nation's sustainable development goals on three aspects: 3 (health and well-being), 7 (energy) and 11 (safe, resilient and sustainable human settlements). This will further facilitate knowledge exchange between policy makers, developers, designers and occupants focused on strategies to increase stakeholders' participation in the design process.

Keywords : thermal comfort, energy use, low-income housing, tropical climate

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