

RESTRICTED

ABSTRACT

"Design is about meeting real human needs and not just creating attractive or dramatic surroundings."

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In present context, the retrofitting of existing buildings for energy sustainability has developed the field of research and studies in architectural design. In order to maintain internal thermal comfort in indoor buildings, a significant amount of energy is used due to poor thermal performance. Domestic buildings in developing countries can benefit greatly from low-cost passive strategies to reduce energy consumption. Passive architectural elements of the building can be considered important design variables that act as external climate modifiers in favourable internal climatic conditions in all types of buildings. Passive elements in the building include orientation, microclimate, form and envelope of the building. The prevailing thermal effects of these elements in existing buildings can improve the conditions for thermal comfort in domestic buildings. This study consists of a critical case study showing heat performance and climatic reactions to illustrate problems in residential buildings in the SLAF Katunayake. Changing the internal and internal interior comfort was analysed using the measurement of air temperature and air humidity. The results concluded that the poor thermal effects of the building were caused by poor climate response of the building. The study estimates the potential of these variables in maintaining the internal thermal comfort. The results of this research will be useful for designers who will be tracked as they are projected into the warmer area of the swamp of Sri Lanka in terms of achieving low energy thermal comfort.

Key Words: Warm humid Climate, Thermal Comfort, Low Energy, Passive architectural elements