

ABSTRACT

Thermal comfort simulations have been carried out in tropical buildings by identifying temperatures in buildings, to determine the optimum thermal mass value and phase change material (PCM) on brick and concrete materials. The simulation is done using EnergyPlus software. From the simulation results, the optimum thermal mass of brick and concrete materials is 480.0 kJ and 386.3 kJ. The PCM value in brick and concrete material is 2 kg and 1.6 kg. The results of the study showed that the greater the optimum thermal mass value and PCM, the lower the temperature in the building.

Keywords: *Tropical Buildings, Thermal Comfort, Optimum Thermal Mass, Phase Change Material (PCM).*