

Evaluation of Heating/Cooling Potential of a Passive Building

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Abstract : In this paper, the heating/cooling potential of a passive building (mosque) of Prof. K. A. Nizami center for Quranic studies at AMU Aligarh, has been evaluated on the basis of energy balance under quasi-steady state condition by incorporating the effect of ventilation. The study has been carried out for composite climate of Aligarh. The performance of the above mentioned building has been presented in this study. It is observed that the premises of the mosque are cooler than the outside ambient temperature by an average of 2°C and 4°C during the month of March and April respectively. Provision of excellent ventilation, high amount of thermal mass, high ceilings and circulation of cool natural air helps in maintaining an optimal thermal comfort temperature in the passive building.

Keywords : heating/cooling potential, passive building, ambient temperatures

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