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**Using Appropriate Technology in Designing Climate Responsible Architecture: A study
in hot-dry climate of Aurangabad.**

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ABSTRACT:

One of the prime determinants of how comfortable an occupant feels inside a building is the indoor thermal comfort, which in turn depends on the outer climatic conditions, and the architectural interventions carried out in the building design as well as the materials and methods of construction used. To evaluate various strategies for passive building design and suggest best design techniques to achieve maximum indoor thermal comfort, *appropriate technology* in the form of using a *building bio-climatic analysis* is essential. One of the commonly used tools for building bioclimatic analysis is the *Climate Consultant 6 software* developed by a team of University of California, LA Energy Design Tools Group for the main purpose of interpreting outdoor climatic conditions to *indoor occupant comfort*. Using a characteristic analysis, Climate Consultant proposes various *appropriate design strategies* for a specific climate. The same has been done in this study, wherein the benefit of using selected passive cooling approaches to achieve thermal comfort and reduce energy consumption in residential dwellings, is assessed for Aurangabad in Maharashtra, India which is located in the *hot - dry climatic zone of India*. The optimum mix of passive design strategies which can keep the occupants comfortable for maximum number of hours in naturally ventilated conditions is worked out. The software results are analysed using an EPW (Energy plus Weather) file. The study being for naturally ventilated conditions, ASHRAE Standard 55-2004 using Predicted Mean Vote Model is used to determine the suitable design strategies for Aurangabad.

KEY-WORDS: appropriate design strategies, building bio-climatic analysis, indoor occupant comfort.

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