

Heritage Buildings an Inspiration for Energy Conservation under Solar Control - a Case Study of Hadoti Region of India.

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Abstract : With rapid urbanization and growth of population, more buildings are required to be constructed to meet the increasing demand of the shelter. 80 % of the world population is living in developing countries, but the adequate energy supplied is only 30% of it. In India, the situation gets little more difficult as majority of the villages of India are still deprived of energy. 1/3 of the Indian household does not have energy supply. So there is a big gap between energy demand and supply. Moreover, India is producing around 65 % of the energy from Non - Renewable sources and 25 % of the Energy is imported in the form of oil and gas and only 10% of the total, is generated from other sources like solar power, wind power etc. Present modern structures are big energy consumers as they are consuming 40 % of the total energy in providing comfort conditions to the users, in terms of heating and cooling, 5 % in Building Construction, 20 % in transportation and 20 % in industrial process and 10 % in other processes. If we minimize this Heating and Cooling and lighting load of the building we can conserve a huge amount of energy for the future. In history, buildings do not have artificial systems of cooling or heating. These buildings, especially in Hadoti Region which have Semi Arid Climatic conditions, are provided with Solar Passive Design Techniques that is the reason of comfort inside the buildings. So if we use some appropriate elements of these heritage structures, in our present age building design we can find some certain solution to energy crises. Present paper describes Various Solar Passive design techniques used in past, and the same could be used in present to reduce the consumption of energy.

Keywords : energy conservation, Hadoti region, solar passive design techniques , semi - arid climatic condition

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