

REVIEW OF BUILT ENVIRONMENT IMPACTS ON CLIMATE CHANGE, DESIGN STRATEGIES FOR REDUCTION

NAGARAJU KAJA

Assistant Professor of Architecture,
School of Planning and Architecture: Vijayawada, India

ABSTRACT

As stated by United Nations Human Settlements Programme (UN-Habitat) in its “Global report on Human Settlements 2011”, humanity is facing a very dangerous threat when the world enters the second decade in the new millennium. Fuelled by two powerful human-induced forces that have been unleashed by development and manipulation of the environment in the industrial age, the effects of urbanization and climate change are converging in dangerous ways which threaten to have unprecedented negative impacts upon quality of life, and economic and social stability. This statement clearly indicates the seriousness of the issue which was created by the excessive use of fossil fuels with dangerous consequences starting from rising of Sea levels to melting of glaciers causing disturbing effects on the human kind globally. Urban centers are the drivers of this situation emitting major part of Greenhouse Gases (GHG). In India, Construction industry has a very important role in its economy contributing on an average 6.5% of the GDP and it has direct impact on the environment with its consumption of energy both directly and embodied energy in the materials that it uses. Large amounts of energy is used for the production of the building materials in the construction phase and also to create the comfort conditions inside the buildings during the life cycle. The average annual electricity consumption for space conditioning and lighting in India is around 80 KWh/m² and 160 KWh/m² for residential and commercial buildings respectively. Buildings which are naturally ventilated by using passive design strategies, traditional building technologies/elements make a sound investments than those depending on the use of energy consumption to create human comfort.

KEY WORDS: Built Environment, Climate Change, Thermal Comfort