

# Green Buildings

Buildings have a profound effect on the environment. In the US, buildings account for 39 per cent of the total energy use, 12 per cent of the total water consumption, 68 per cent of the total electricity consumption and 38 per cent of the total carbon dioxide emissions.

## What are Green Buildings?

It is a practice of increasing the efficiency with which buildings use resources like energy, water and materials. It aims at reducing building impacts on human health and the environment by improving the building life cycle — siting, design, construction, operation, maintenance and removal. Sustainable design, green architecture and natural building are similar concepts.

Green buildings are more than just a random collection of environmental technologies. They require systemic attention to the full life cycle impacts of the resources embodied in the building and to the resource consumption and pollution emissions over the building's complete life cycle.

Green building practices have been adopted in Australia, Canada, Germany, India, Israel, Malaysia, New Zealand, the United Kingdom and the United States.

## Impact of Green Building Practices

Effective green buildings can lead to

- 1) reduced operating costs by increasing productivity and using less water and energy,
- 2) improved public and occupant health due to improved indoor air quality and,
- 3) reduced environmental impacts by, for example, lessening storm water runoff and the heat island effect.

Practitioner of green building often seek to achieve not only ecological but aesthetic harmony between a structure and its surrounding natural and built environment, although the appearance and style of sustainable buildings are not necessarily distinguishable from their less sustainable counterparts.

## Rating

The U.S. Green Building Council (USGBC) has developed America's only common standard of measurement for a "green" building and is recognised as the leading accrediting body for the industry. It certifies buildings under its Leadership in Energy and Environmental Design (LEED) rating system. The rating system encourages and accelerates global adoption of sustainable green building and accepted tools and performance criteria. LEED rates the buildings in platinum, gold and silver.

## Certification

Different LEED versions have varied scoring systems based on a set of required "prerequisites" and a variety of "credits" based on many green designs and construction features that positively impact future tenants. Illustratively some benefits that are considered include :

- 1) More open space
- 2) More natural light
- 3) Improved indoor air quality
- 4) Increased energy conservation
- 5) Water conservation achieved by methods like rainwater harvest for reuse in cooling the building
- 6) Waste reduction through diversion of construction waste and use of recycled content material.

## The Energy Conservation Building Code (ECBC), 2007

This code has been developed by India's Bureau of Energy Efficiency (BEE) and is mandated by the Energy Conservation Act, 2001. Simulation exercises indicate that ECBC-complaint buildings use 40 to 60 per cent less energy than similar baseline buildings.

## Green Building Congress

In September 2007, the Confederation of Indian Industry (CII) organised the Green Building Congress at Chennai that commenced with an international exhibition on green buildings. The objective of the congress '07 was to create awareness, bring together stakeholders and to provide a platform for sharing of knowledge and best practices.

## Green Buildings in India

The Tata Energy Research Institute (TERI) has listed out the 44 energy efficient buildings in India according to six climatic zones — cold and cloudy, cold and sunny, composite, hot and dry, moderate, warm and humid — in which they are situated. TERI has developed the first national rating system for green buildings called Green Rating for Integrated Habitat Assessment (**GRIHA**) to suit Indian conditions and non-airconditioned building unlike the LEED rating that is designed for airconditioned buildings only. GRIHA has 32 criteria for rating buildings with a total of 100 points. A building needs to score minimum 50 to apply for certification.

*So, next time before you buy a house, verify whether it is 'green' and help save the environment.*

*Ref. : en.wikipedia.org*

