

Chapter-9

Green Building and Smart Cities

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Introduction

- A green building is an environmentally sustainable building, designed, constructed and operated to minimize the total environmental impacts.



Objectives

- To minimize the use of energy
- To reduce waste, pollution and environmental degradation
- To provide mechanical ventilation system to increase air flow.
- To select proper building material that has low toxicity
- To enhance interior lighting to reduce energy demand and to increase visual comfort.

Fundamental principles

- Sustainable site design:
- Energy Efficiency
- Water efficiency
- Material efficiency

- **STRUCTURE EFFICIENCY:**

- It is the concept of sustainable building and has largest impact on cost and performance.
- It aims to minimize the environment impact associated with all life-cycles.



- **ENERGY EFFICIENCY:**

- The layout of the construction can be strategised so that natural light pours for additional warmth.
- Shading the roof with trees offers an eco-friendly alternative to air conditioning.

- **WATER EFFICIENCY:**

- To minimize water consumption one should aim to use the water which has been collected, used, purified and reused.



- **MATERIAL EFFICIENCY:**

- Materials should be use that can be recycled and can generate surplus amount of energy.
- An example of this are solar power panels,not only they provide lightening but they are also a useful energy source.



- **WASTE AND REDUCTION:**

- It is probable to reuse resources.
- What may be waste to us may have another benefit to something else.

INDIAN GREEN BUILDING COUNCIL

- The Indian Green Building Council (IGBC) was formed in the year 2001 by Confederation of Indian Industry (CII).
- The aim of the council is to bring green building movement in India and facilitate India to become one of the global leaders in green buildings by 2015.



GREEN BUILDINGS PROJECT IN INDIA

- Suzlon Energy Limited-Pune
- Biodiversity Conservation India-Bangalore
- Olympia Technology Park-Chennai
- ITC Green Centre-Gurgaon
- The Druk White Lotus School-Ladakh
- Doon School-Dehradun
- Raintree Hotels-Chennai
- Nokia-Gurgaon
- Rajiv Gandhi International Airport-Hyderabad
- Hiranandini-BG House, Powai
- ABN Amro Bank, Chennai
- Palais Royale at Worli, Mumbai
- Punjab Forest Complex, Mohali

