

# GREEN BUILDING

A person with long hair and a backpack is seen from behind, looking towards a row of modern, glass-clad skyscrapers. In the foreground, there is a green wall with plants and a small waterfall. The scene is set in an urban environment with a mix of nature and architecture.

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# WHAT IS GREEN BUILDING

- ▶ *A Green Building is one which uses less water, optimizes energy efficiency, conserves natural resources, generates less waste and provides healthier space for occupants as compared to conventional buildings.*

# OBJECTIVES OF GREEN BUILDING

- *Green Buildings are designed to reduce the overall impact on human health and the natural environment by the following ways:*
  - *Using energy, water and other resources efficiently.*
  - *By reducing waste, pollution, and environmental degradation.*



# FUNDAMENTAL PRINCIPLES

- ▶ • Structure design efficiency
- Energy efficiency
- Water efficiency
- Materials efficiency
- Waste and toxic reduction







# 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

1. The layout of the construction can be strategies so that natural light pours for additional warmth.
2. 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.





# Materials Used In Green Constructions

- ▶ WOOL BRICK
  - Obtained by adding wool and a natural polymer found in seaweed to the clay of the brick.
  - 37% More strength than burnt bricks.



# Sustainable Concrete

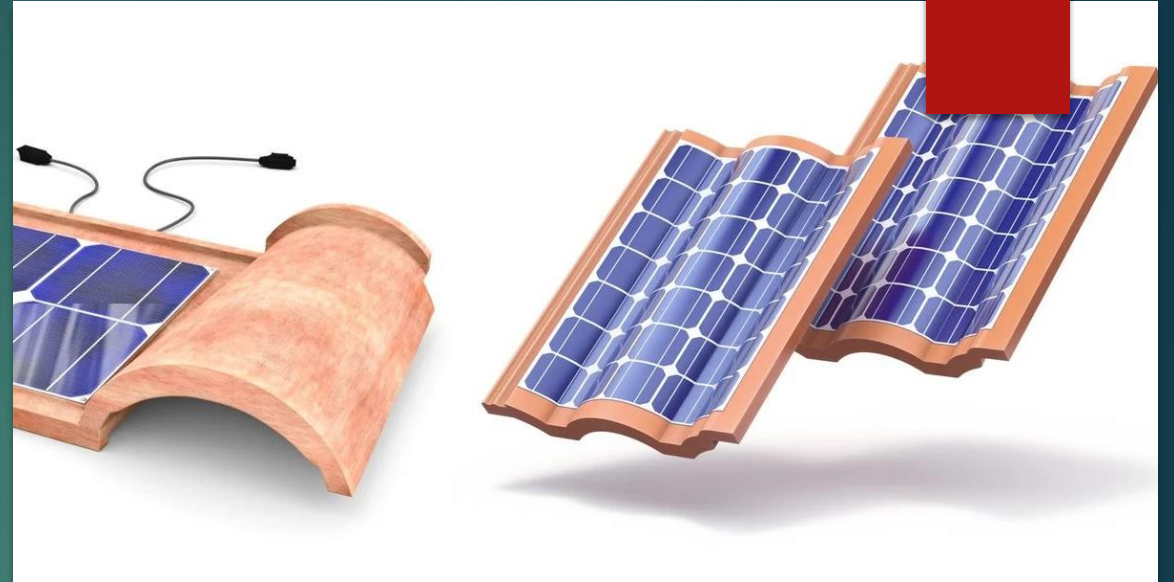
- ▶ 1. Crushed glass
- 2. Wood chips or slag - a by-products of steel manufacturing.
- 3. Reduces the emission of CO<sub>2</sub>





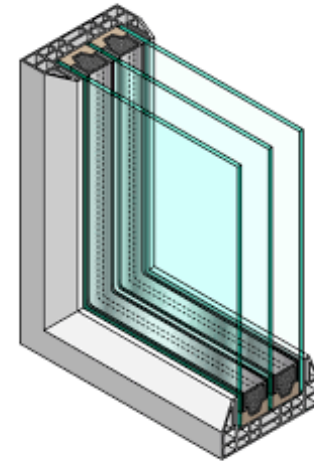
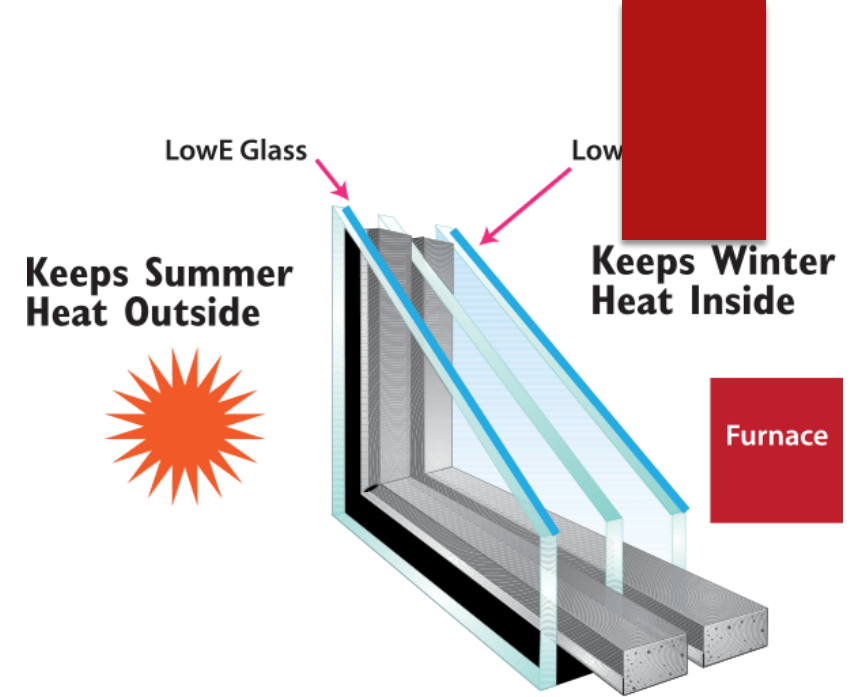
# Solar Tiles

1. Exist to simply protect a building .
2. They spend a large portion of the day absorbing energy from the sun



# Triple-Glazed Windows

- ▶ Super-efficient windows.
- ▶ Stops heat to enter the building & from direct sunlight.





# 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.



**Indian Green Building Council**  
*Greening India since 2001*

# IGBC RATING SYSTEM

- IGBC has developed green building rating programmes to cover commercial, residential, factory buildings, etc.
- Each rating system divided into different levels of certification are as follows:
- "Certified" to recognise best practices.
- "Silver" to recognize outstanding performance.
- "Gold" to recognize national excellence.
- "Platinum" to recognize global leadership.



# GREEN BUILDINGS PROJECT IN INDIA

- ▶ 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
- ▶ ABN Amro Bank, Chennai
- ▶ Palais Royale at Worli, Mumbai
- ▶ Punjab Forest Complex ,Mohali

# RAJIV GANDHI INTERNATIONAL AIRPORT HYDERABAD

- India's first Greenfield airport is among the top 10 green buildings in India.
- First airport in Asia to be certified with "SILVER" rating.





# NOKIA-GURGAON

- ▶ Its smart lighting, heat recovery wheel and high efficiency chillers makes this office stand out from the rest.

**Nokia – Gurgaon  
LEED ‘Gold’ Rating**



# DIFFERENT FROM OTHER BUILDINGS

- ▶ • Green Building is different from the other buildings because it use a minimum amount of nonrenewable energy, produce minimal pollution, increases the comfort, health and safety of the people who work in them.
- ▶ It also minimize the waste in construction by recovering materials and reusing or recycling them.



# BENEFITS OF GREEN BUILDING

- ▶ Buildings have a large effect on the environment ,human health and the economy.
- ▶ The successful adoption of GREEN BUILDING development can maximize both the economic and environmental performance of the buildings.



# ENVIRONMENTAL BENEFITS

- ▶ Protect biodiversity and ecosystems
  - Improve air and water quality
  - Reduce waste streams
  - Conserve natural resources





# DEMERITS OF GREEN BUILDING:

- INITIAL COST IS HIGH
- AVAILABILITY OF MATERIALS
- NEED MORE TIME TO CONSTRUCT
- NEED SKILED WORKER

# CONCLUSION

- 1.Non-renewable energy is expensive and unsafe but through green building we can save a lot of energy.
- 2.Before that, let's define first the meaning of green building ( also known as green construction is the practice of creating structures and using processes that are environmentally responsible and resource efficient throughout a building's life-cycle: from siting to design, construction, operation, maintenance, renovation, and deconstruction.

A photograph of a city skyline with solar panels in the foreground. The foreground is filled with rows of blue solar panels. Behind them is a dense line of green trees. In the background, several tall skyscrapers are visible against a clear blue sky. A large, curved, modern building is partially visible on the left. A solid red vertical rectangle is positioned in the upper right corner of the image.

# THANK YOU