

GREEN BUILDING STANDARDS AND SUSTAINABLE INFRASTRUCTURE DESIGN

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INTRODUCTION

Green building standards and sustainable infrastructure design are focused on reducing the environmental impact of construction activities through energy-efficient, resource-saving, and environmentally responsible techniques.



GREEN BUILDING STANDARDS

Green building standards are certification systems that evaluate a building's environmental performance.

- LEED (Leadership in Energy and Environmental Design).
- IGBC (Indian Green Building Council).
- GRIHA (Green Rating for Integrated Habitat Assessment).
- WELL (Well Building Standard).
- Passive House Standard.



KEY COMPONENTS OF GREEN BUILDING

- **Energy Efficiency:** Using energy-efficient systems and renewable energy sources.
- **Water Conservation:** Reducing water consumption through efficient fixtures and systems.
- **Material Sustainability:** Using sustainable materials and reducing waste.
- **Indoor Air Quality:** Maintaining healthy indoor air quality through ventilation and air filtration.
- **Natural Ventilation:** Using natural ventilation to reduce mechanical cooling.
- **Waste Management:** Reducing, reusing, and recycling waste.



FEATURES AND BENEFITS OF GREEN BUILDING

Green buildings incorporate various features, including:

- Green Roofs:** Plant-covered roofs for insulation and stormwater management.
- **Solar Panels:** Renewable energy systems for electricity generation.
- Rainwater Harvesting:** Collecting and reusing rainwater.

Green building provides numerous benefits, including:

- Reduced Carbon Footprint:** Minimizing greenhouse gas emissions.
- Improved Air and Water Quality:** Enhancing indoor and outdoor air and water quality.
- **Enhanced Human Health and Productivity:** Promoting occupant health and productivity.



SUSTAINABLE INFRASTRUCTURE DESIGN PRINCIPLES

Sustainable infrastructure design principles focus on creating resilient, adaptable, and integrated systems.

- **Resilience and Adaptability:** Designing infrastructure to withstand climate change and natural disasters.

- **Integrated Design:** Considering multiple factors, including energy, water, and transportation.

- **Material Efficiency:** Using sustainable materials and reducing waste.



Examples of Sustainable Infrastructure Design

Green Buildings: Energy-efficient, eco-friendly materials (e.g., LEED-certified).

Sustainable Urban Drainage Systems (SUDS): Manage runoff with green roofs, wetlands.

Eco-Highways: Include wildlife corridors, solar panels, and sustainable materials.

Renewable Energy: Wind farms, solar parks, and hydropower plants.

Smart Grids: Digital technology for efficient electricity delivery.

Public Transport Systems :Electric buses, bike-sharing, efficient metro systems.

Water Reuse Systems: Recycle wastewater for industrial or agricultural use.



CONCLUSION

- Green building standards and sustainable infrastructure design are crucial for a sustainable future.
- Importance of adopting sustainable practices in building design and construction.
- Call to action: Encourage sustainable building practices in your community.



REFERENCES

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THANK YOU