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# HIGH-PERFORMANCE BUILDING DESIGN PROFESSIONAL - HBDP EXAM REFRESHER

ONLINE PROFESSIONAL COURSES LED BY THE  
WORLD'S TOP SPECIALISTS

ONLINE TRAINING BY KRISHNAJI PAWAR

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MODULE  
**4.A**

## Sustainable Development: Definitions and Applications

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# **HIGH-PERFORMANCE BUILDING DESIGN PROFESSIONAL - HBDP EXAM REFRESHER**

Sustainable development is a growing trend that is transforming our perspectives on the environment and affecting our cities and regions. It is a socially preferable approach to almost everything, and while global solutions are possible, acting locally is a proven means of effecting change.

# Learning Objectives

- Introduction to High Performance Buildings
- Sustainability Concepts
- What is sustainable development?
- **Sustainable Development: Definitions and Applications**
- Sustainable Buildings
- Sustainable Transportation
- Alternative Energy & Carbon Reduction
- Environmental Improvement Programs and Rating Systems
- HVAC Processes



# INTRODUCTION

## Understanding Sustainable Development

- Sustainability is evolving and changing our thinking, agendas, and design of infrastructure.
- It is transforming our perspectives on the environment.
- It is affecting corporations, governments, and institutions, changing cities and regions.

## Urban Sustainability

- Sustainable development is applied at the urban scale to address concerns about urban expansion, development patterns, and environmental challenges.
- It supports long-term habitation on Earth by humans and other indigenous species.

# ALTERNATIVE ENERGY, ENERGY CONSERVATION AND ENERGY EFFICIENCY

- Sustainability involves meeting present needs without compromising future generations' ability to meet their own needs.
- Cities are crucial due to their high concentration of people and resources, leading to significant global energy consumption, greenhouse gas emissions, and waste generation.
- Energy efficiency is key in urban sustainability, reducing carbon footprint and lowering energy costs through retrofitting buildings with energy-efficient systems.
- Renewable energy sources like solar panels, wind turbines, and hydropower plants can generate clean energy without depleting finite resources or contributing to climate change.



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# ENERGY'S CRITICAL ROLE IN SUSTAINABILITY



- Energy conservation focuses on incremental improvements by increasing consumption of specific fuels at strategic times.
- Energy efficiency involves replacing less efficient equipment with more efficient ones, improving existing equipment efficiency, or satisfying energy requirements in an alternative manner.
- Energy is essential for modern society and maintaining a high standard of living.
- Energy is pervasive across all sectors of society, impacting the environment, economy, and social well-being.
- Transitioning to renewable energy sources like solar, wind, and hydropower can reduce carbon emissions and mitigate global warming effects.
- Economic sustainability is closely linked to energy use, with access to affordable and reliable energy essential for economic growth and development.
- Social sustainability is influenced by energy access and affordability, as reliable energy sources are crucial for providing basic services and improving quality of life.
- Transitioning to cleaner and more efficient energy solutions can reduce indoor air pollution and improve public health outcomes.

# IMPLEMENTING SUSTAINABLE DEVELOPMENT POLICIES

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# SUSTAINABLE DEVELOPMENT IS A NEW SOCIAL CONCEPT!



## Sustainability in Energy Use

- It involves providing environmentally neutral energy, not overly consumptive energy use, providing renewable energy options, reducing the need for non-renewable energy sources, and equitably distributing energy resources.



## Energy and Sustainability

- Energy is defined as the ability to perform tasks and overcome obstacles.
- Conservation refers to the act or practice of conserving, protection from loss, waste, preservation, and protection of natural resources.

# IMPLEMENTING SUSTAINABLE DEVELOPMENT POLICIES

- Sustainable development aims to meet present needs without compromising future generations' ability to meet their own needs.
- It involves balancing economic, social, and environmental factors for a harmonious society.
- Adoption of renewable energy sources like solar, wind, and hydroelectric power reduces greenhouse gas emissions and mitigates climate change effects.
- Conservation of natural resources through practices like sustainable forestry, responsible water management, and recycling programs.
- Policies promote social equity and inclusivity, ensuring access to education, healthcare, and employment opportunities for all.
- Successful implementation requires collaboration between governments, businesses, and individuals, setting clear targets, implementing regulations, and fostering collaboration.



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# THANK YOU

