

BEYOND
SMART CITIES



welcome to
BEYOND SMART CITIES

BEYOND

SMART CITIES



HIGH-PERFORMANCE BUILDING DESIGN PROFESSIONAL - HBDP EXAM REFRESHER

ONLINE PROFESSIONAL COURSES LED BY THE
WORLD'S TOP SPECIALISTS

ONLINE TRAINING BY KRISHNAJI PAWAR

LEED AP(BD+C), GSAS CGP, GCP, ISO 14001

LEARN.BEYONDSMARTCITIES.IN

BEYOND

SMART CITIES

MODULE

6

Sustainable Transportation

KRISHNAJI PAWAR - CEO & FOUNDER

LEED AP(BD+C),GSAS CGP,GCP,ISO 14001

WWW.BEYONDSMARTCITIES.IN





BEYOND
SMART CITIES

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

Transportation is a fundamental human activity, affecting daily routines and urban design. It provides benefits but also poses environmental and societal issues. Motorized modes consume significant energy and resources, primarily non-renewable, leading to greenhouse gas emissions and climate 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

- Measurement and Verification (M&V) is crucial in energy efficiency and renewable energy projects.
- M&V helps quantify and verify energy savings and performance improvements, ensuring the success and credibility of energy projects.
- Transportation is a fundamental human activity, linked to daily routines, land-use planning, and urban design.
- Most motorized modes consume significant amounts of energy and resources, largely unrenewable.
- Sustainable transportation aims to preserve the advantages of transportation while mitigating its social and environmental impacts.

SUSTAINABLE TRANSPORTATION GOALS AND TRANSFORMATION +

- Sustainable transportation aims to reduce the social and environmental impacts of current mobility practices by reducing resource inputs, waste outputs, and public impacts.
- It focuses on making important everyday destinations closer and more accessible, promoting healthier modes of transportation within communities, and reducing traffic and its associated pollution and safety hazards.
- Sustainable transportation involves considering multiple dimensions of transportation, land-use planning, and urban design, and public visioning processes.



SUSTAINABLE TRANSPORTATION GOALS AND TRANSFORMATION +

- It involves the deployment of technological advancements like autonomous vehicles and electric cars, and envisioning their integration into urban life.
- It aims to lower financial costs by reducing dependence on automobiles as the main mode of individual mobility.
- The current phase of a paradigm shift in transportation conception, planning, financing, and implementation is underway, shifting from automobile-oriented planning to a focus on appropriate modes, infrastructure, and technologies.



WHAT IS SUSTAINABLE TRANSPORTATION ABOUT?

- Sustainable transportation (ST) is a transport system that doesn't harm public health or ecosystems and meets access needs.
- It emerged from concerns about transportation's burdens and the counter-productivity of conventional highway-oriented planning.
- Benefits of reducing traffic include 'traffic evaporation', decreased traffic-related injuries, and increased pedestrian and bicycling use.
- The Brundtland Commission's 1987 report defined sustainable development as meeting current generations' needs without compromising future generations' ability to meet their own needs.



WHAT IS SUSTAINABLE TRANSPORTATION ABOUT? +

- Key works include the Millennium Development Goals, the new Sustainable Development Goals, and the New Urban Agenda.
- Global efforts are being made to integrate sustainability into transportation policy and planning, especially in relation to climate change.
- Citizen participation and increased NGO activity have advanced sustainability awareness and action on climate change issues.
- Common threads in ST include meeting basic access and mobility needs without degrading the environment, serving economic and environmental objectives, maximizing resource utilization efficiency, improving access to employment, goods, and services, and improving livability and human qualities of urban regions.



URBAN DESIGN FOR SUSTAINABLE AND ACTIVE TRANSPORTATION



- Urban design promotes sustainable and active transportation, reducing greenhouse gas emissions and improving air quality.
- Mixed land use in neighborhoods integrates residential areas with commercial, recreational, and educational facilities.
- Pedestrian-friendly streetscapes, including wide sidewalks, crosswalks, and street furniture, encourage walking and cycling.
- Green spaces in parks and community gardens provide opportunities for physical activity, social interaction, and relaxation.
- Urban design promotes social equity and inclusivity, ensuring equal access to transportation options and amenities for all residents.
- Universal design principles in public spaces, such as ramps and elevators for wheelchair users, ensure everyone can participate in community life.

TRANSPORTATION POLICY: FROM MOBILITY PROMOTION TO MANAGEMENT AND SUSTAINABILITY

- Transportation policy is a public domain, with Sustainable Transportation (ST) policy emerging from dissatisfaction with Business as Usual (BAU).
- ST policy involves environmental, economic, city spatial form, and personal behavior.
- NGOs are pushing governments to develop better ST policies.
- Prior to the 20th century, technological developments and innovations shaped most transportation planning and policy-making.
- Policy-making focused on specific projects, with some focusing on 'grand visions' like the Erie Canal or France's road network.
- Most policies focused on smaller projects, rarely linked to a national plan or policy.



GLOBAL TRANSPORT EMISSIONS AND STRATEGIES

- Transport emissions are greenhouse gases and pollutants from transportation activities.
- The transportation sector contributes to approximately 14% of global emissions.
- Burning fossil fuels in internal combustion engines is the primary source of emissions.
- The increasing demand for mobility and reliance on fossil fuels for transportation are major challenges.
- Countries are implementing strategies to combat transport emissions, including promoting electric vehicles, improving fuel efficiency, investing in public transportation infrastructure, and implementing emissions trading schemes.



GLOBAL TRANSPORT EMISSIONS AND STRATEGIES +

- Countries like Norway and the Netherlands have set ambitious targets to phase out internal combustion engine vehicles and promote electric vehicles.
- International cooperation and agreements like the Paris Agreement are crucial for setting targets and guidelines for reducing emissions.
- Adoption of cleaner technologies and sustainable transport policies can help reduce transport emissions and mitigate climate change impacts.



ENERGY EFFICIENCY AND BUSINESS BENEFITS



- Reducing energy use reduces vehicle stress, resulting in longer life and lower servicing costs.
- Carbon taxes are a permanent issue, with reduced fuel use reducing the amount paid.
- Young people, particularly those under 30, prefer companies that prioritize sustainability.
- Businesses must demonstrate environmental action to attract talent, varying by company, country, and culture.
- Air quality is a leading cause of death worldwide, often due to domestic burning or road transport.
- The circular economy increases demand for goods to be returned for reuse and recycling, reducing raw material costs and improving profitability.
- Energy audits can improve communication and justify business travel, promoting more frequent, shorter, online meetings over face-to-face meetings.

ENERGY EFFICIENCY IN TRANSPORT AND CLIMATE ACTION

- Transport offers quick wins in energy efficiency and measurable CO2 reductions.
- Significant changes in transport patterns have been observed during the pandemic.
- The first European land war has increased the price of road fuels and biofuel feedstocks, accelerating electrification.
- Oil-producing countries need to maintain the highest possible price to sweat their oil assets.
- Energy auditors help operators identify energy saving, conservation, and performance opportunities.
- Energy efficiency should be prioritized, with focus on opportunities beyond fuel.
- The avoid, shift, and improve model should be used in thinking, approach, and communications.



B E Y O N D
S M A R T C I T I E S

CONTACT US



+91 6363032722



info@beyon-smartcities.in



learn.beyon-smartcities.in



#55,HMR Layout ,Bengaluru ,India



THANK YOU

