

BEYOND
SMART CITIES



VOTE



wel come 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
22

Energy and Materials Use and Management

KRISHNAJI PAWAR - CEO & FOUNDER

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

WWW.BEYONDSMARTCITIES.IN



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

Energy and materials are fundamental elements of modern society, enabling various activities and processes. Their use and management are crucial for sustainable development, environmental protection, and economic efficiency.

Learning Objectives +

- Benchmarking with Performance Metrics
- Water Conservation
- Commissioning in Sustainable Construction
- **Energy and Materials Use and Management**
- Summary and Resources
- HBDP Practice Test V.4.1_Test Your Knowledge!



ENERGY AND MATERIALS MANAGEMENT OVERVIEW

- Energy and materials are essential for sustainable development, environmental protection, and economic efficiency.
- Energy can be renewable or non-renewable, with renewable energy replenishable over short time frames.
- Energy consumption patterns vary across sectors, with the industrial sector being the largest consumer.
- Effective energy management strategies include energy audits, energy efficiency technologies, demand-side management, and renewable energy integration.
- Germany's "Energiewende" initiative emphasizes the shift from non-renewable to sustainable energy sources.
- Key materials management strategies include Life Cycle Assessment, Sustainable Sourcing, Recycling and Reuse, and Eco-Design.
- The interrelationship between energy and materials is crucial, with inefficiencies in one affecting the other.



ENCOURAGING THE OWNER TO HIRE AN ENERGY MANAGER

Role of an Energy Manager

- Conducts energy audits to identify inefficiencies and recommend improvements.
- Analyzes energy data to track consumption patterns and forecast future usage.
- Ensures adherence to local, national, and international energy regulations and standards.
- Develops budgets for energy-related expenditures and forecasts future energy needs.
- Educates employees about energy conservation techniques to foster a culture of sustainability.



BENEFITS OF HIRING AN ENERGY MANAGER +

- **Cost Savings:** Potential for significant cost savings of between 10% to 30% on energy bills.
- **Enhanced Sustainability:** Develops a comprehensive sustainability plan aligned with corporate social responsibility (CSR) goals.
- **Improved Operational Efficiency:** Streamlines processes by identifying energy waste and inefficiencies.
- **Regulatory Compliance and Risk Management:** Navigates stringent energy regulations to ensure compliance with environmental standards.
- **Employee Engagement and Culture of Conservation:** Leads initiatives that promote energy conservation among employees.



IDENTIFYING COMPETENCIES OF BUILDING SERVICE STAFF

Understanding Competencies

- Competencies are a blend of knowledge, skills, abilities, and behaviors necessary for employees to perform their job roles effectively.
- In the realm of building services, these competencies can be categorized into three primary domains: technical competencies, interpersonal competencies, and organizational competencies.

Technical Competencies

- Technical competencies include understanding of HVAC systems, electrical systems, and plumbing systems.
- Examples include diagnosing and repairing HVAC malfunctions, understanding electrical codes, safety regulations, and troubleshooting techniques.

Interpersonal Competencies

- Interpersonal competencies involve the ability to communicate, collaborate, and interact effectively with others.



ORGANIZATIONAL COMPETENCIES +

Organizational Competencies

- Organizational competencies refer to the abilities necessary for functioning effectively within the organization's framework.
- Examples include project management, safety and compliance, and sustainability practices.

Assessing Competencies

- Methods to identify necessary competencies include job analysis, competency frameworks, and continuous professional development.



IMPLEMENTING A MAINTENANCE PLAN



- A maintenance plan is a systematic approach to ensure optimal condition of an organization's assets and operations.
- Objectives of a maintenance plan include minimizing downtime, extending asset lifespan, ensuring safety and compliance, and optimizing performance.

Types of Maintenance Strategies

- Preventive Maintenance (PM): Scheduled maintenance activities aimed at preventing equipment failure.
- Predictive Maintenance (PdM): Utilizes advanced technologies to monitor equipment and predict potential failures.
- Corrective Maintenance (Corrective Maintenance): Involves immediate repairs after a failure.
- Total Productive Maintenance (TPM): Engages all employees in the maintenance process to improve overall equipment effectiveness.

DEVELOPING A MAINTENANCE PLAN

- Asset Inventory and Assessment: Cataloguing all assets and assessing their condition, performance history, and criticality to operations.
- Establishing Maintenance Goals: Define clear, measurable goals for the maintenance plan.
- Selecting Maintenance Strategies: Identifying the best maintenance strategies based on the asset assessment.
- Developing a Schedule: Outlining the frequency and timing of maintenance activities.
- Allocate Resources: Identifying the human, financial, and material resources required for effective implementation.
- Documentation and Record Keeping: Establishing a system for documenting maintenance activities.
- Training and Communication: Ensure all personnel involved in maintenance are appropriately trained and understand their roles within the plan.

Implementation and Monitoring

- Execution of Maintenance Activities: Carrying out scheduled maintenance activities as planned.
- Performance Monitoring: Using KPIs to measure the effectiveness of the maintenance plan.
- Continuous Improvement: Regularly reviewing the maintenance plan and its performance outcomes.



SUSTAINABLE PRACTICES IN HOUSEKEEPING AND RENOVATION PROJECTS

Resource Conservation

- Implementing practices like low-flow fixtures, dual-flush toilets, and rainwater harvesting systems can significantly reduce water consumption.
- Energy management is crucial in sustainable housekeeping, with energy-efficient appliances, LED lighting, and occupancy sensors reducing energy consumption.

Waste Management

- Implementing robust recycling and composting programs, such as establishing designated bins for recyclable materials in guest areas and staff spaces.
- Transitioning to environmentally friendly cleaning products to reduce harmful chemical exposure.



SUSTAINABLE PRACTICES IN HOUSEKEEPING AND RENOVATION PROJECTS +

Sustainable Procurement

- Opting for suppliers who prioritize sustainable practices, such as using recycled materials or fair-trade products.
- Supporting local economies and reducing carbon footprints associated with transportation.

Staff Training and Engagement

- Regular workshops and ongoing education about sustainability can empower employees to make informed decisions in their daily tasks.

Sustainable Practices for Renovation Projects

- Implementing adaptive reuse and biophilic design in renovation projects.
- Selecting recycled and locally sourced materials, such as reclaimed wood or recycled metal, to lower the environmental impact of new construction.
- Selecting low-VOC and non-toxic materials to enhance indoor air quality.

Energy Efficiency Upgrades

- Prioritizing upgrades to insulation and HVAC systems.
- Integrating renewable energy sources into renovation designs to offset energy usage.



SUSTAINABLE WASTE MANAGEMENT DURING RENOVATION ++



- Employing deconstruction techniques for the salvage and reuse of materials.
- Implementing waste diversion strategies, such as separating construction debris into recyclable and non-recyclable materials.
- Sustainable practices in housekeeping and site management, as well as renovation projects, are essential in mitigating the environmental impact of buildings.



CONTACT US



+91 6363032722



info@beyondsmartcities.in



learn.beyondsmartcities.in



#55,HMR Layout ,Bengaluru ,India



THANK YOU

