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SUSTAINABLE CLASSROOM SPECIALIST SCS CERTIFICATE

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ONLINE TRAINING BY KRISHNAJI PAWAR

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

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MODULE
21

Emerging Design and Technology

KRISHNAJI PAWAR - CEO & FOUNDER

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

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In recent years, school buildings have undergone significant changes due to emerging design principles and new technologies. These advancements aim to create environments that are not only conducive to learning but also sustainable and adaptable to the needs of students and teachers. Sustainable design includes features such as solar panels, green roofs, natural lighting, flexible learning spaces, technology integration, community engagement, and community use spaces.

Learning Objectives

- Green school buildings are dynamic learning environments.
- Operations and Maintenance for Whole School Sustainability
- Meaningful, purposeful, and engaging learning
- Sustainable Spaces and Smart Transportation
- Energy Efficiency - Lighting
- Energy Efficiency - Plug Loads & HVAC Systems
- Water Efficiency and Quality
- Indoor Environment: Air Quality and Acoustics
- Smart Cleaning & Integrative Pest Management
- Materials and Resources
- Emerging Design and Technology
- Summary and Resources
- SCS Quiz: Test Your Knowledge!

INTRODUCTION

Sustainable Design

- Involves creating energy-efficient buildings that capture sunlight and convert it into electricity.
- Examples include the Sustainable Energy and Environment Center in California.
- Schools maximize natural light through large windows and skylights.

Flexible Learning Spaces

- Modular classrooms that can be adjusted in size and shape.
- Common areas or "breakout spaces" are included for various purposes.

Technology Integration

- Smart classrooms equipped with advanced technologies like interactive whiteboards, tablets, and high-speed internet.
- Virtual Reality (VR) technology is used for immersive learning experiences.

Community Engagement

- Accessible spaces promote interaction between the school and its surroundings.

RECOGNIZING OPPORTUNITIES FOR INNOVATIVE ACTIONS



- Technology Integration: Utilizing smart sensors to monitor energy consumption and environmental conditions can empower students to engage in real-time data analysis.
- Experiential Learning through Outdoor Classrooms: Creating outdoor classrooms or utilizing school gardens provides hands-on learning experiences that bridge the gap between theory and practice.
- Collaborative Projects with the Community: Involving students in projects that address real-world environmental challenges can foster innovation.
- Curriculum Development Focused on Sustainability: Integrating sustainability into various subjects can create a multidisciplinary approach that emphasizes the importance of environmental stewardship.

SUSTAINABLE DESIGN PRINCIPLES

- Biophilic Design: Connects students with nature, enhancing well-being and cognitive function.
- Flexible Learning Environments: Modern classrooms are designed with flexibility, allowing for a variety of learning configurations.
- Energy Efficiency: Features like high-performance insulation, energy-efficient windows, and strategically placed skylights significantly reduce energy consumption.





INTEGRATION OF TECHNOLOGY

- Smart Classroom Technologies: Internet of Things (IoT) devices optimize conditions for learning while minimizing energy use.
- Virtual Reality (VR) and Augmented Reality (AR): Provide immersive learning experiences related to environmental science and sustainability.
- Digital Collaboration Tools: Platforms like Google Classroom or Microsoft Teams facilitate collaborative projects that can extend beyond the classroom.



EDUCATIONAL METHODOLOGIES

- Project-Based Learning (PBL): Encourages students to engage in real-world projects that address environmental challenges.
- Place-Based Education: Emphasizes the use of the local environment as a context for learning.
- STEM Integration: Integrates science, technology, engineering, and mathematics (STEM) into green classroom practices.



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CONTACT US



+91 6363032722



info@beyondsmartcities.in



learn.beyondsmartcities.in



#55,HMR Layout ,Bengaluru ,India



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