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CERTIFIED SUSTAINABLE DEVELOPMENT PROFESSIONAL - CSDP OVERVIEW

ONLINE PROFESSIONAL COURSES LED BY THE
WORLD'S TOP SPECIALISTS

ONLINE TRAINING BY KRISHNAJI PAWAR

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

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MODULE
1

Introduction and Course Outline

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BRIEF ABOUT ME

Krishnaji PAWAR

CEO & FOUNDER

Krishnaji Pawar is founder and CEO of Beyond Smart Cities. Before being named CEO in January 2020, Krishnaji held leadership roles at Beyond Smart Cities in both Sustainability ,Energy & Environmental Consultancy.

Specialized in developing sustainable design strategies for Green Building Certification Systems (LEED, GSAS, etc.), Energy & Water Conservation, Commissioning, Environmental Impact Assessment & Environmental Management Systems.

Currently responsible for 3,787 million square feet Green Building /Energy modeling Consulting since January 2008 in UAE, India and Qatar.





**CERTIFIED SUSTAINABLE
DEVELOPMENT
PROFESSIONAL
CSDP OVERVIEW**

The CSDP Overview training program equips individuals with essential skills, knowledge, tools, credentials, and 100 practice exam questions for AEE Certified Sustainable Development Professional (CSDP) Exam Knowledge Domains.

Learning Objectives

- **Introduction**
- **Getting Started with CSDP**
- **What is Sustainable Development?**
- **Sustainable Development: Definitions & Applications**
- **Environmental Issues Associated with Sustainable Development**
- **Alternative Energy & Carbon Reduction**
- **Certified Sustainable Development Specialist Certification**
- **Summary and Resources**
- **CSDP Practice Test V.4.1_Test Your Knowledge!**



INTRODUCTION

Understanding Sustainable Development

- Sustainable development balances economic growth, environmental stewardship, and social equity.
- It's crucial for long-term viability and resilience.
- The CSDP designation by the Association of Energy Engineers (AEE) prepares individuals to tackle sustainable development challenges.

CSDP Certification Overview

- Targets professionals in sustainable development practices across sectors like energy, environmental management, and corporate sustainability.
- Applicants typically need a combination of education and experience in sustainable development or a related field.
- Core competencies include Sustainable Development Principles, Environmental Policy and Regulation, Energy Management, Sustainability Assessment, and Stakeholder Engagement.
- Candidates must pass a rigorous examination testing their knowledge and understanding of sustainable development concepts.



AEE'S CERTIFIED SUSTAINABLE DEVELOPMENT PROFESSIONAL (CSDP) OVERVIEW

Importance of the CSDP Certification

- Establishes the holder as a knowledgeable and competent professional in the field of sustainable development.
- Provides career advancement for roles related to environmental policy, energy management, and corporate social responsibility.
- Offers networking opportunities for professionals dedicated to sustainability.



COURSE OVERVIEW FOR ENERGY ENGINEERING AND SUSTAINABILITY PROFESSIONALS

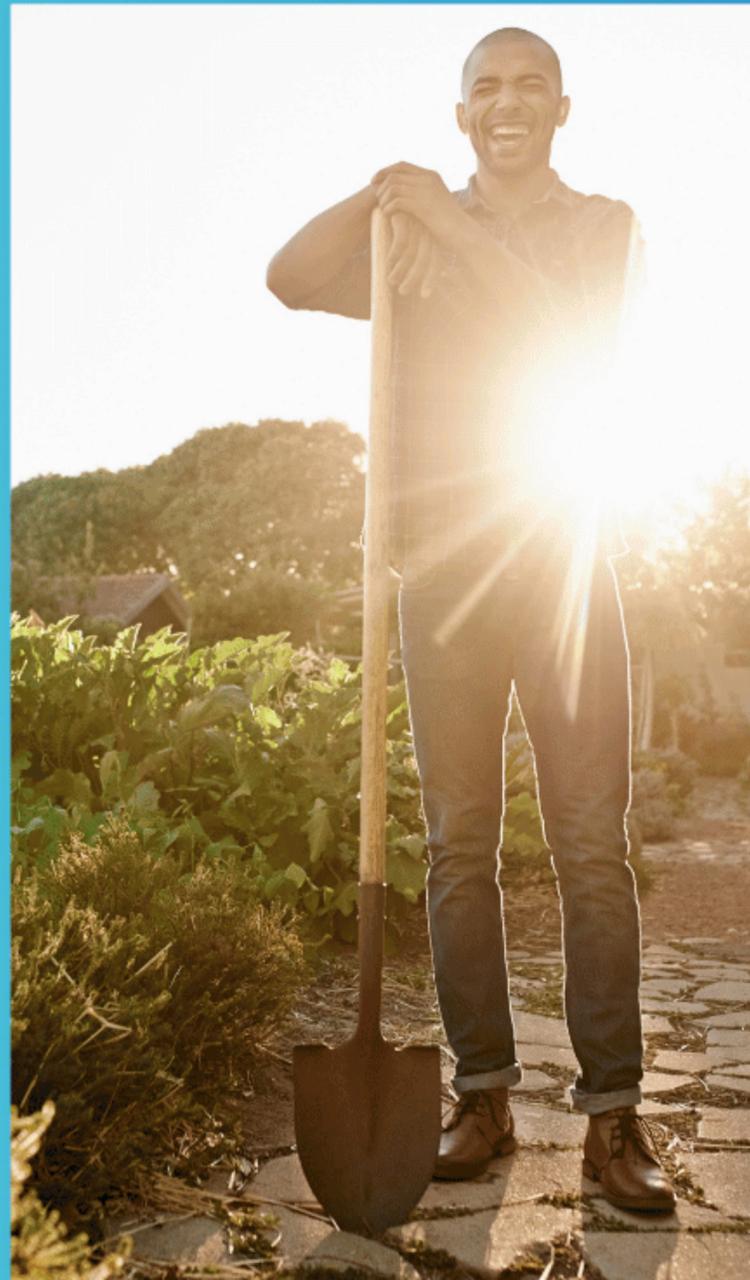
- Offers value for roles such as sustainability program oversight, managing other energy industry professionals, and promoting sustainable development in buildings, industrial plants, and governmental facilities.
- Involves integrating energy and sustainability programs, green project development and procurement, sustainability program financing, and marketing sustainable products, programs, and services.





WHO ARE CERTIFIED SUSTAINABLE DEVELOPMENT PROFESSIONALS (CSDPS)?

- Energy professionals with knowledge of "green" construction technologies and practices involved in projects or programs to improve sustainability.
- Energy-efficiency consultants helping clients understand the impact of sustainable practices and policies.
- Involved in planning, developing, and implementing sustainability policies or programs.



What Does a CSDP Do?

- Understand development practices, policies, technical requirements, program analysis, and financial assessments related to sustainable development.
- Work in commercial, institutional, industrial, or governmental sectors and have specific knowledge applicable to a given market.

SUSTAINABLE BUILDING DESIGN OVERVIEW

Sustainable building design aims to minimize environmental impacts while maximizing positive contributions to society.

Core principles include:

1. **Energy Efficiency:** Using less energy to perform the same task, reducing energy waste. Techniques include strategically placing windows and incorporating advanced insulation materials.
2. **Water Conservation:** Minimizing water use and managing stormwater effectively.
3. **Sustainable Materials:** Using renewable, recycled, or locally sourced materials to reduce transportation impacts. Examples include bamboo and reclaimed wood.
4. **Indoor Environmental Quality (IEQ):** Selecting materials and systems that promote occupant health and comfort. Examples include the use of non-toxic materials and daylighting strategies.
5. **Site Selection and Development:** Choosing sites that minimize disruption to local ecosystems, preserving existing vegetation, and promoting biodiversity.
6. **Lifecycle Assessment:** Evaluating environmental impacts from construction through operation to demolition or repurposing.
7. **Regulatory and Certification Frameworks:** LEED, BREEAM, and Living Building Challenge.
8. Sustainable building practices are becoming an imperative for sustainable development in the 21st century.



SUSTAINABILITY CONCEPTS

- Balancing economic, environmental, and social considerations to create a resilient society.
- Emphasizes the triple bottom line: economic prosperity, environmental stewardship, and social equity.
- Lifecycle thinking considers the environmental and social impacts of a product or service throughout its lifecycle.
- Both concepts aim to promote responsible and efficient use of resources for a more sustainable future.



ENERGY EFFICIENCY AND SUSTAINABILITY CONCEPTS

Energy Efficiency in Sustainability

- Involves optimizing energy use to minimize waste and environmental impact.
- Achieves desired outputs with minimal energy input through energy-efficient technologies, practices, and behaviors.
- Energy conservation involves reducing energy consumption by using less energy to achieve the same output.
- Energy management involves monitoring and optimizing energy use to improve efficiency.
- Energy efficiency reduces greenhouse gas emissions, mitigates climate change, and conserves natural resources.



ENVIRONMENTAL IMPACT OVERVIEW

- Environmental impact refers to the effects of human activities on the environment, including ecosystems, natural resources, and ecological balance.
- Key factors include emissions, solid and fluid waste disposal, deforestation, habitat destruction, and pollution.
- Emissions, including carbon dioxide, nitrogen oxides, sulfur dioxide, and particulate matter, contribute to climate change by trapping heat in the atmosphere.
- Solid and fluid waste disposal, including plastics, paper, food scraps, and other materials, can lead to pollution and harm to wildlife.
- Fluid waste, such as wastewater from industrial processes or sewage treatment plants, can contain harmful substances that can contaminate water sources and harm ecosystems.
- Factory production, for example, emits pollutants into the air, generates solid waste, and discharges wastewater containing chemicals, affecting aquatic life.
- Understanding these factors can help implement sustainable practices and reduce ecological footprint, ensuring a healthy and thriving planet for future generations.





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Beyond Smart Cities is the world's 1st Green Technology Marketplace, connecting millions of Sustainability Specialists, Green Building Specialists, Energy Specialists, Commissioning Specialists, Environment Specialists, Health & Safety Specialists, Fire Safety Specialists, Climate Change Specialists & Green Products/Technology Manufacturers with independent talent around the globe.

Our mission is to build and support a global community of experts with the highest professional standards in sustainability, green building, energy, commissioning, environment, health & safety, fire safety, climate change, GHG accounting, carbon auditing, and GHG emissions management.

DEFINITION AND BENEFITS OF SUSTAINABLE BUILDING DESIGN



- Focuses on creating energy-efficient, environmentally friendly, and sustainable structures.
- Considers factors like building materials, insulation, ventilation, lighting, and layout to optimize performance and minimize environmental impact.
- Energy efficiency is achieved through the use of energy-efficient materials like double-pane windows, LED lighting, and high-efficiency HVAC systems.
- Indoor air quality is improved through proper ventilation systems and use of low-VOC materials.
- Sustainable building materials like recycled steel, bamboo flooring, and low-impact paints contribute to a more sustainable building industry.
- The goal is to create buildings that reduce environmental impact and provide a healthier, more comfortable space for occupants.

SUSTAINABLE BUILDING DESIGN

High performance OR Sustainable building design is a process of integrated approach using various parameters surrounding building design for optimised design excellence. The entire process is a holistic approach to designing high-performing buildings that are -

- Sustainable environmentally and economically
- Energy efficient
- Prioritising occupant's well-being through design

These three points essentially summarise all the attributes a high performance building should have. And naturally, it falls onto the architect to ensure all aspects are fulfilled.





Baseline model : the set of arithmetic factors, equations, or data used to describe the relationship between energy use or demand and other baseline data. A model may also be a simulation process involving a specified simulation engine and set of input data

Boundary conditions :physical conditions (values of physical quantities, conditions of energy interchange, etc.) imposed upon a system at the start or end of a process (temporal boundary conditions) and/or at the boundaries separating the system from its surroundings (local boundary conditions)

Building envelope : (1) outer elements of a building, including walls, windows, doors, roofs, and floors, including those in contact with earth. (2) the exterior plus the semi-exterior portions of a building. For the purposes of determining building envelope requirements, the classifications are defined as follows. **Building envelope, exterior**: the elements of a building that separate conditioned spaces from the exterior. **Building envelope, semi-exterior**: the elements of a building that separate conditioned space from unconditioned space or that enclose semiheated spaces through which thermal energy may be transferred to or from the exterior, to or from unconditioned spaces, or to or from conditioned spaces



Sustainable Development : Sustainable development is defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Brundtland Report, 1987).

Environmental Sustainability : Environmental sustainability refers to the responsible interaction with the environment to avoid depletion or degradation of natural resources, ensuring long-term ecological balance.

Social Equity : Social equity in sustainable development refers to the fair and just distribution of resources, opportunities, and privileges within a society.

Economic viability : Economic viability refers to a project or initiative's ability to generate sufficient economic returns to sustain itself long-term.

Ecosystem Services ****Definition:**** Natural ecosystems provide humans with four main types of benefits: provisioning, regulating, cultural, and supporting services.



Cultural services: encompass recreational, aesthetic, and spiritual benefits.- Supporting services are the underlying processes that maintain ecosystem functions, such as nutrient cycling and soil formation.

Circular Economy : A circular economy is an economic system aimed at eliminating waste and the continual use of resources by creating closed-loop systems where waste is minimized, and materials are reused, recycled, or remanufactured.

Resilience: Resilience in sustainable development refers to the capacity of a system—be it ecological, social, or economic—to absorb disturbances and reorganize while undergoing change, thereby retaining essential functions and identity.

SUSTAINABLE BUILDING DESIGN: BENEFITS AND PRACTICAL IMPLICATIONS



- Integrates disciplines like architecture, engineering, urban planning, and environmental science.
- Aims to minimize environmental impact, promote resource efficiency, and enhance quality of life.
- Benefits include reducing ecological footprint, promoting economic advantages, improving health and well-being, and promoting social equity.
- Uses renewable resources and energy-efficient technologies to minimize waste and lower carbon emissions.
- Contributes to health and well-being by creating healthier indoor environments, maximizing natural light, and improving air quality.
- Designed to be resilient to climate change impacts, employing adaptive design strategies for durability and lifespan.
- Increased regulatory and market demand trends, including tax breaks, grants, and favorable zoning laws.
- The LEED certification system benefits buildings by increasing marketability and attractiveness to environmentally conscious tenants and buyers.

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THANK YOU

