

wel come to
BEYOND SMART CITIES

The background of the image is an industrial facility, likely a water treatment plant, featuring numerous large, vertical pipes wrapped in silver insulation. The pipes are connected by various fittings and valves. The scene is brightly lit, suggesting an outdoor or well-lit indoor environment. The overall color palette is dominated by the metallic silver of the pipes and the blue of the sky in the background.

B E Y O N D

S M A R T C I T I E S

COMMISSIONING CERTIFIED TECHNICIAN

CXCT REFRESHER

ONLINE TRAINING BY KRISHNAJI PAWAR

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KNOWLEDGE IS POWER

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

BEYOND

SMART CITIES

MODULE

13

Green Building Rating Systems & Commissioning

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Green building rating systems, such as LEED, BREEAM, Green Globes, and IPMVP, evaluate a building's environmental performance, promoting sustainable design practices, energy efficiency, and indoor environmental quality.

Learning Objectives

- Document Observations & Interpret Basic Terminal Unit Trends.
- Test Airside ,water,control system / Troubleshooting
- Required O&M paperwork and training Preventive maintenancetems
- Evaluate HVAC, control, lighting control, and equipment types
- Green building rating systems & commissioning
- Summary and Resources
- CxCT Practice Exam: Test Your Knowledge!



INTRODUCTION

- Frameworks that evaluate environmental performance of buildings and promote sustainable design practices.
- Assess a building's efficiency in areas like energy use, water conservation, indoor environmental quality, and sustainable site development.
- Help stakeholders ensure projects meet specific sustainability criteria, contributing to reduced ecological footprints and enhanced occupant health.

MAJOR GREEN BUILDING RATING SYSTEMS

- Leadership in Energy and Environmental Design (LEED): A point-based approach for assessing sustainability of buildings.
- Building Research Establishment Environmental Assessment Method (BREEAM): A UK-based system for evaluating sustainability of buildings.
- Green Globes: A user-friendly rating system for assessing residential projects mid-construction.
- International Performance Measurement and Verification Protocol (IPMVP): A framework for measuring and verifying energy performance of buildings post-construction.



IMPORTANCE OF COMMISSIONING

- A systematic process that ensures a building's systems are designed, installed, and function according to the owner's operational requirements.
- Types of Commissioning: Design Phase Commissioning, Construction Phase Commissioning, and Operational Commissioning.





ROLE OF COMMISSIONING IN GREEN BUILDING



- Helps avoid common pitfalls of energy inefficiency and occupant discomfort that can undermine sustainability efforts.
- Without proper commissioning, a LEED-certified building may not perform as expected, leading to higher operational costs and diminishing environmental benefits.



LEED FUNDAMENTAL COMMISSIONING AND VERIFICATION & ENHANCED COMMISSIONING

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LEED COMMISSIONING OVERVIEW

- LEED is a green building certification program that promotes sustainable building practices.
- The commissioning process ensures that all building systems are designed, installed, and function according to the owner's project requirements.
- Two key components of the commissioning process are Fundamental Commissioning and Verification (FC) and Enhanced Commissioning (EC).



FUNDAMENTAL COMMISSIONING & VERIFICATION

- Confirms that the building systems meet the owner's project requirements.
- Ensures that systems are properly documented and operational performance is verified.
- Facilitates a smoother transition to operations post-construction.

Key Components of FC

- Design Phase Commissioning: Establishes the Owner's Project Requirements (OPR).
- Commissioning Plan Development: Develops a comprehensive commissioning plan detailing the commissioning process, responsibilities, and the schedule for activities.
- Installation Verification: Regular inspections and testing during construction to verify that systems are installed correctly.
- Functional Testing: Verifies that systems operate correctly under various conditions.
- Documentation and Training: Comprehensive documentation of the commissioning activities, results of the functional tests, and the establishment of a system manual.



ENHANCED COMMISSIONING

- Goes beyond the fundamental requirements to improve the building's operational performance further and optimize energy efficiency.
- Includes all the steps outlined in Fundamental Commissioning but adds additional activities that focus on ongoing performance and improvements.





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THANK YOU

