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COMMISSIONING CERTIFIED PROFESSIONAL

CXCP OVERVIEW

ONLINE TRAINING BY KRISHNAJI PAWAR

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

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MODULE
01

Introduction and Course Outline

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COMMISSIONING CERTIFIED PROFESSIONAL CXCP OVERVIEW

The Commissioning Certified Professional—CxCP Overview training program aims to equip participants with the necessary information and materials to effectively execute and supervise commissioning. Maintaining a CxCP certification validates one's ability to lead, plan, organize, and manage a commissioning team in executing commissioning procedures for new and existing facilities.



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.



Learning Objectives

- **Course Overview and Introduction**
- **Definition and History of Building Commissioning**
- **Why is building commissioning needed?**
- **Commissioning Process Overview**
- **CP roles, responsibilities, and professional qualifications**
- **Cost and benefits of System Commissioning**
- **Commissioning Team Role & Responsibilities**
- **Summary and Resources**
- **CxCP Exam Sample Question**



INTRODUCTION

- A professional credential for individuals demonstrating knowledge, skills, and experience in building system commissioning.
- Sets standards for professionals involved in HVAC and other building systems.
- Focuses on the commissioning phase, ensuring efficient and effective operation of building systems.
- Role includes pre-design phase, design phase, construction phase, verification and testing, and post-occupationality evaluation.
- Eligibility requirements include education, experience, and professional references.
- Certification process includes application, comprehensive exam, and continuous professional development.
- Importance of CxCP certification in building performance:
- Optimizes energy usage, improves indoor air quality, saves lifecycle costs, and enhances user comfort.

COMMISSIONING CERTIFIED PROFESSIONAL (CXCP) CERTIFICATION OVERVIEW

- Represents commitment to excellence in the commissioning process of building systems.
- Green buildings are increasingly prevalent in Asia, but their performance often falls short due to poorly commissioned HVAC systems.
- The course provides an introduction to building commissioning, answering four key questions: why commissioning is necessary, how to perform proper commissioning, and the history of building commissioning.
- It covers the building commissioning process, professional certification, cost and benefits, and a sample exam question.
- The course also discusses the relationship between commissioning and sustainability certification programs like LEED.
- The course encourages starting with building commissioning to prevent dysfunctional buildings in India and the GCC.



EFFICIENT BUILDING PERFORMANCE IMPORTANCE

- Changes in people's expectations and business environment necessitate efficient building performance.
- The built environment protects health from environmental issues like heat, air pollution, rain, and noise.
- Buildings should not become pollution sources and health hazards.
- Decreased resources like water and energy, and increasing costs of their usage, necessitate better performance.



EFFICIENT BUILDING PERFORMANCE IMPORTANCE+

- Investors expect higher returns on investments, leading to improved building valuation and management models.
- The complexity and automation of building technology necessitates the start-up of individual components and total system operation.
- Major green building certification systems now require HVAC system commissioning, but proper system performance should be a basic requirement for new construction and refurbishment projects.





CX CERTIFIED PROFESSIONAL (CXCP) ROLE AND RESPONSIBILITIES



- Responsible for managing the technical commissioning process of building systems.
- Acts as the owner's advocate, creating required commissioning documents and supervising system commissioning testing.
- Meets pre-requisite requirements, self-directed studying, passing Cx Procedural Standards and Technical exams, and maintaining certification with continuing education.
- CxCP Procedural Standards Exam: 80 multiple choice questions, takes up to two hours to complete.
- Exam materials: ANSI/NEBB Standard S110-2019, Design Phase Commissioning Handbook, NEBB Procedural Standards for Testing, Adjusting & Balancing of Environmental Systems, 9th Ed., 2019, and NEBB Environmental Systems Technology Textbook.
- Testing equipment: Pencils, mechanical pencils, pens, erasers, laptops, tablets, thumb drives, and phones are not allowed.

CXCP PROCEDURAL AND TECHNICAL EXAMS OVERVIEW

- CxCP Procedural Standards Exam: 80 multiple choice questions, two hours to complete.
- Open book exam designed to test recall skills, knowledge application, data interpretation, and problem-solving abilities.
- Exams developed based on US practice and offered only in English.
- Calculations and formulas in imperial standard, not available in metric.
- Both exams require clean, free-from-notes books.
- The CxCP Technical exam, an open book, consists of 100 multiple choice questions, lasting up to four hours, and is designed to test recall, knowledge application, data interpretation, and problem-solving abilities.



KEY DEFINITION & MEANING



Commissioning is a process - a systematic process of ensuring that a building performs in accordance with the design intent, contract documents, and the owner's operational needs.



Basis of Design (BOD)

A document that records the concepts, calculations, decisions, and product selections used to meet the owner's project requirements and to satisfy applicable regulatory requirements, standards, and guidelines. The document includes both narrative descriptions and lists of individual items that support the design process.

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ASHRAE: American Society of Heating Refrigerating and Air-Conditioning Engineers is an international organization with a mission of advancing heating, ventilation, air conditioning and refrigeration to serve humanity and promote a sustainable world through research, standards writing, publishing and continuing education.

Basis of Design (BOD):The documentation by the design team of the primary thought processes and assumptions behind design decisions that are made to meet the Owner's Project Requirements. The BOD describes the assumptions used for sizing and selection of systems (i.e. codes, standards, operating conditions, design conditions, weather data, interior environmental criteria, other pertinent design assumptions, etc.).

Building Performance Monitoring & Metric:Using tools that compile building data into a few useful metrics to help operators understand whether their building technology is working as intended.

Owner's Project Requirements (OPR)

A written document that details the functional requirements of a project, i.e., the expectations of how it will be used and operated, It also includes project goals, measurable performance criteria (e.g., energy efficiency goals), cost considerations, success criteria and relevant benchmarks, and supporting information.



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Commissioning Process (CxP): A quality-focused process for enhancing the delivery of a project includes commissioning process activities specified by the owner or required by a code or standard. The process focuses on verifying and documenting that all of the systems and assemblies under the scope of commissioning are planned, designed, installed, tested, operated, and maintained to meet the owner's project requirements.

Commissioning Final Report (CxFR): A document that records the activities and results of the commissioning process and is developed from the final commissioning plan with all of its attached appendices.

Commissioning Plan (CxPlan) : A dynamic document that outlines the organization, schedule of activities, allocation of resources, and documentation requirements of the commissioning process. The document shall be updated frequently, at least at the end of every phase, with the tasks and documents related to the coming phase.

Commissioning Provider (or Authority (CxA) or Agent): An organization or individual identified by the owner who sets up the commissioning team and leads, plans, schedules, and coordinates the activities to implement the commissioning process.

Commissioning Team (Cx Team) : Individuals and agencies who, through coordinated actions, are responsible for implementing the commissioning process.

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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.

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