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PRE-DESIGN-PHASE COMMISSIONING PROCESS

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ONLINE TRAINING BY KRISHNAJI PAWAR

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

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MODULE 7

Pre-Design Phase Overview

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Learning Objectives

- Introduction/Overview
- Commissioning Objectives
- Commissioning Team
- Pre-Design Activities

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INTRODUCTION

- The predesign phase of most new construction projects has historically been less formal, despite the fact that it is now understood to be essential to the entire quality assurance procedure.
- Predesign is frequently skipped over in favor of the more exciting stages of a construction project.
- While some organizations have procedures in place for this, it's likely that they could be more effective if they had a quality assurance program that was specifically designed for building commissioning.
- Once owners recognize the importance of developing a thorough building and commissioning quality assurance program, they will appreciate the significance of developing a predesign process.
- Involving the commissioning authority early in the predesign or design phases of the project, as opposed to waiting until construction is underway, is also essential to recognize their added value.

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PRE-DESIGN PHASE COMMISSIONING PROCESS

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Introduction

- The practice of commissioning new construction has matured as an industry standard.
- To define and clarify the commissioning process, codes, standards, guidelines, protocols, and certifications were developed.
- A number of the process's fundamental elements have been enhanced, modified, redefined, or deemphasized, while new elements have been added.
- Beyond Smart Cities is committed to defining best practices in the building commissioning industry and providing documents, such as sample templates for RFQ/P, commissioning plans, and specifications, that describe these practices and provide practical solutions to industry problems.

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Pre- Design

Ideally, commissioning begins during the pre-design phase.

The pre-design phase lays the foundation for the project, defines the plan for commissioning, and initiates the crucial process of team-building. During this phase, the design and commissioning teams are formed, as well as the Owner's Project Requirements (OPR) and the building program. All decisions made in subsequent phases should be informed by the OPR.







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Objectives

- Determine the commissioning group.
- Create the OPR.
- Define the initial scope and budget for commissioning.
- Develop the initial plan for commissioning.
- Confirm that the building program adheres to the OPR.
- Integrate commissioning into the overall project delivery process and commence team building.





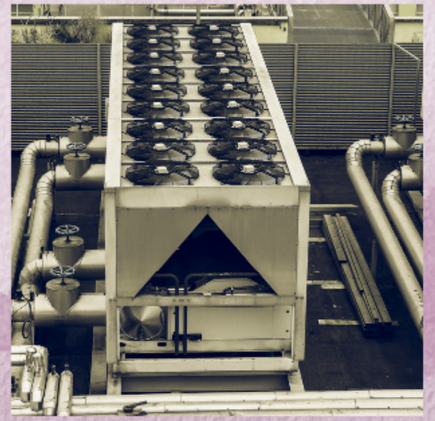




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Commissioning Team

- Owner/ Owner's representative
- Commissioning Provider (CxP)
- Design team
- Operating and Maintenance Personnel (when available)
- Construction Team Personnel (when available)
- Building End User Representatives (when available)





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Pre-Design Activities

- The owner identifies a representative for commissioning-related activities.
- The owner selects or designates a commissioning provider for the project.

















The CxP directs the overall commissioning process

The CxP oversees commissioning and advises the owner on building system performance.



The CxP is an objective, independent advocate for the owner.

The CxP represents the owner impartially.
A conflict of interest exists if the CxP's firm has other project responsibilities or is not under direct contract with the owner. When this happens, the CxP writes about the conflict and how to resolve it.



CxP is an engineering expert with field experience.

The CxP possesses strong written and verbal communication skills, current engineering knowledge, and extensive field experience.

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Develop the OPR for the Project

- The OPR defines the project's objectives, goals, benchmarks, and success criteria.
- The OPR must be developed with extensive input from the owner and final approval.







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The CxP helps the owner identify the facility's requirements for all building systems and assemblies, including design and construction processes and schedules, energy efficiency, sustainability, indoor environmental quality , safety and security, component and assembly quality, reliability, durability, flexibility, redundancy, and cost.



Effective OPRs incorporate early input from the building owner, design team, operation and maintenance staff, and end users, and are updated throughout the project.



Effective OPRs are developed utilizing accepted methods for input collection (e.g., questionnaires, the Nominal Group Technique, workshops, etc.).At a minimum, the components of an effective OPR are verifiable, and at best, they include success criteria.

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Define the commissioning scope, schedule, and budget.







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The commissioning activities should be included in the design schedule. The commissioning scope specifies the systems and assemblies to be commissioned as well as the activities and rigor of the commissioning procedure.



The purpose and scope of each project's commissioning must be specified in the CxP contract.



The CxP recommends clear commissioning roles and scopes for design and construction teams, including design consultant and construction manager contracts, general specifications, and system and component specifications for supplier support.

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Incorporate commissioning into the project budget and schedule.

- Include commissioning in project costs and timelines.
- The construction schedule and project budget should allow for all commissioning activities.
- The commissioning scope should include occupancy and operations phase activities, which design and construction teams sometimes overlook.







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Develop the Commissioning Plan

- Identifies the systems to be put into service
- Establishes the scope of the commissioning procedure.
- Defines commissioning roles and communication channels for each project team member.
- Provides an estimate of the launch schedule







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Develop the Issues Log format and protocols.

- Issues Log formats for design and construction are needed to document, track, and resolve commissioning issues.
- Issues Logs, managed by the CxP, typically include a detailed description of the issue, the date it was identified, the corrections party, the issuing party, and the completion status.







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Review the building program.

- The commissioning team evaluates the building program documents to determine if they comply with and support the owner's project specifications.







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Prepare the pre-design phase commissioning report.

- At the conclusion of the pre-design phase, the CxP creates a report that compiles the pre-design commissioning-related documentation.







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