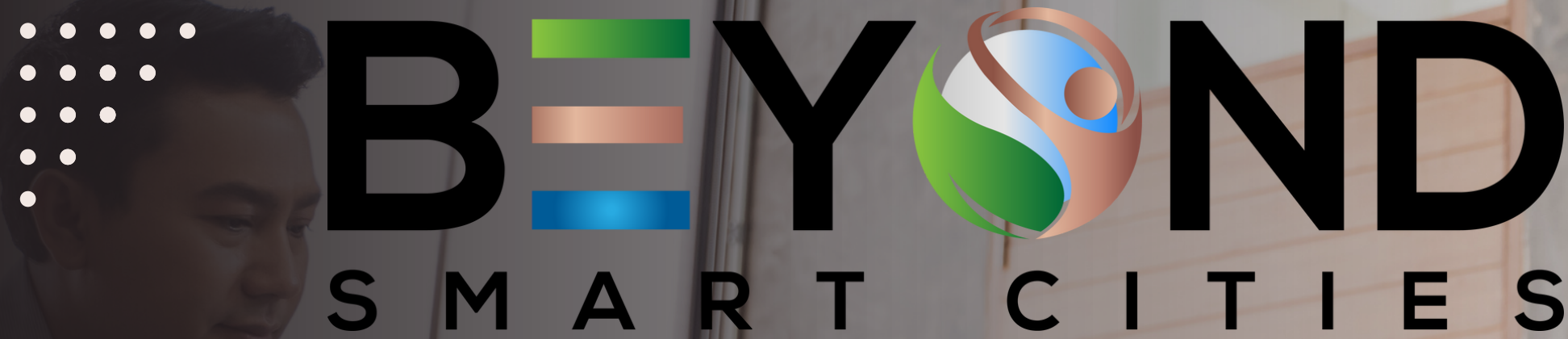




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WELCOME TO ADVANCED NEW BUILDING CONSTRUCTION COMMISSIONING - NBCX

ONLINE TRAINING

KRISHNAJI PAWAR - CEO & FOUNDER

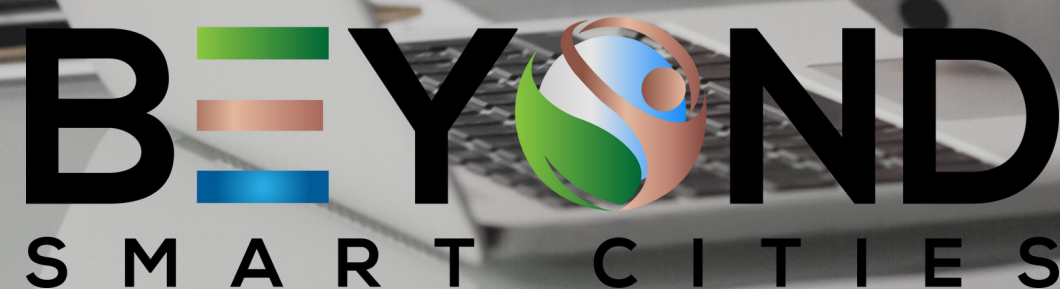




3. PRE-DESIGN PHASE

KRISHNAJI PAWAR, LEED AP BD+C, GSAS CGP, ISO 14001:2015, GCP

COMMISSIONING SPECIALIST CURRICULUM



NEXT



Learning Objectives

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

Pre-design commissioning is essential. The CxP's early involvement is essential for the timely and useful production of the Owner's Project Requirements (OPR), the design team Basis of Design (BOD), the Commissioning Plan, and the start of the O&M Systems Manual. These jobs lose their value as catalysts for conversation, cost and risk management, and quality tracking if they are delayed and "reverse engineered" to match the design.



Overview

Ideally, commissioning occurs during the pre-design phase.

- The Pre-Design Phase establishes the framework for the project, outlines the plan for commissioning, and initiates the crucial process of team development. During this phase, the design and commissioning teams are formed, along with the Owner's Project Requirements (OPR) and the building programme. Any decisions made in subsequent phases should be based on the OPR.



Pre- Design Phase Objectives

- Identify the Commissioning Team
- Develop the OPR
- Define the initial commissioning scope and budget
- Develop the initial commissioning plan
- Verify that the building program is consistent with the OPR.
- Integrate commissioning into the overall project delivery process and begin building the Commissioning Team.

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)



Pre-Design Activities

- A. The owner designates a party to act as their project representative for commissioning-related activities.
- B. The owner selects or designates a commissioning provider for the project.
 - The CxP directs the overall commissioning process and makes the final recommendations to the owner regarding the functional performance of the commissioned building systems.
 - The CxP is an objective, independent advocate for the owner.

If the CxP's firm has other project responsibilities or is not under direct contract with the owner, a conflict of interest exists. Wherever this occurs, the CxP discloses, in writing, the nature of the conflict and the means by which the conflict shall be managed.

- In addition to having excellent written and verbal communication skills, the CxP has current engineering knowledge and extensive hands-on field experience regarding:
 1. Building systems
 2. The physical principles of building systems performance
 3. Building systems start-up, balancing, [functional] testing and trouble shooting
 4. Operation and maintenance procedures
 5. The building design and construction process



Pre-Design Activities + Develop the OPR for the Project

- The OPR defines the expectations, goals, benchmarks, and success criteria for the project. The OPR must be developed with significant owner input and ultimate owner approval.
- The CxP ideally assists the owner (and at minimum reviews results) in identifying the facility's requirements regarding all building systems and assemblies, relative to such issues as design and construction processes and schedules, energy efficiency, sustainability, indoor environmental quality (temperature, humidity, ventilation, lighting, connection to outdoors), safety, security, component and assembly quality, reliability, durability, flexibility, redundancy and cost, staff training, operation and maintenance, documentation, commissioning rigor, monitoring and ongoing commissioning and other Owner directives.
- An effective OPR incorporates input early in the project from the Owner, design team, operation and maintenance staff and end users of the building and is updated throughout the project.

Pre-Design Activities + Develop the Commissioning Plan.

- Each project is commissioned in accordance with a written commissioning plan that is updated as the project progresses.

- The commissioning plan:

- 1 Identifies the systems to be commissioned
- 2 Defines the scope of the commissioning process
- 3 Defines commissioning roles and lines of communications for each member of the project team
- 4 Estimates the commissioning schedule

The Commissioning Plan developed during the Pre-Design Phase should address in detail the development of and the ongoing management of the OPR, the development of the Basis of Design (BOD) and the design review process. Other elements of the Plan are normally developed in later phases. The Cx plan should be updated at each formal step of design and at the start of construction.

Pre-Design Activities + Develop the issue log format and protocols.

To improve the documentation, tracking, and resolution of commissioning-related issues, it is necessary to define issue log formats for the design and construction phases. The CxP manages issues logs, which normally include a full description of the issue, the date it was identified, the party accountable for fixes, the issuing party, and the completion status. The findings are recorded and disseminated in real time.



Pre-Design Activities +

Review the Building Program.

The Commissioning team reviews the building program documents and determines whether they are consistent with and support the Owner's Project Requirements.

Prepare the Pre-Design Phase Commissioning Report.

At the conclusion of the Pre-Design Phase a report is developed by the CxP that compiles the commissioning related documentation from the Pre-Design Phase.





Thanks

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