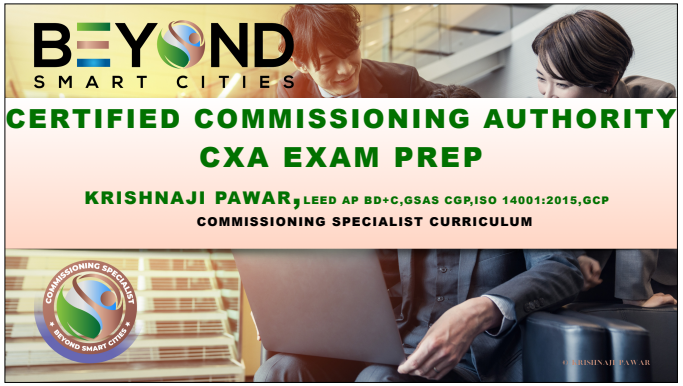

BEYOND
SMART CITIES
CERTIFIED COMMISSIONING AUTHORITY
CXA EXAM PREP
KRISHNAJI PAWAR, LEED AP BD+C,GSAS CGP,ISO 14001:2015,GCP
COMMISSIONING SPECIALIST CURRICULUM


GREEN BUILDING COMMISSIONING
PREPARING COMMISSIONING DOCUMENTS
KRISHNAJI PAWAR, LEED AP BD+C,GSAS CGP,ISO 14001:2015,GCP
COMMISSIONING SPECIALIST CURRICULUM


LEARNING OBJECTIVES
Commissioning Process
Commissioning Process Documents
Commissioning Authority Selection Process Conflict Of Interest
Commissioning Cost
The Integrated Approach to Commissioning
Commissioning Providers Responsibilities



COMMISSIONING PROCESS

Commissioning is the process of planning, documenting, scheduling, testing, adjusting, verifying, and training, to provide a facility that operates as a fully functional system per the Owner's Project Requirements.

The goal of the Commissioning Process is to enhance the quality of the delivered project by focusing the design and construction team on the Owner's goals for a functional and energy efficient building.

A quality-focused process for enhancing the delivery of a project and includes verifying and documenting that the facility and its systems and assemblies are planned, designed, installed, tested, operated and maintained to meet the Owner's Project Requirements.

COMMISSIONING PROCESS DOCUMENTS

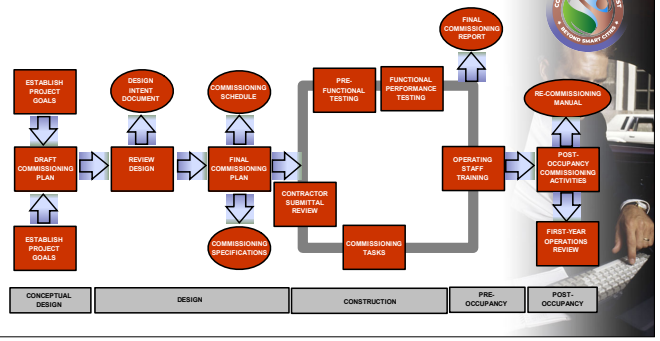
Owner's Project Requirements (OPR) – A written document that details the requirements of a project and the expectations of how it will function. These include project goals, measurable performance criteria, cost considerations, benchmarks, success criteria, and supporting information.

Basis of Design (BoD) – A document that records concepts, calculations, decisions and product selections used to meet the Owner's Project Requirements and to satisfy applicable regulatory requirements, standards and guidelines.

Commissioning Plan – A document that outlines the organization, schedule, allocation of resources and documentation requirements of the commissioning process.

The Commissioning Plan is the governing document of the Commissioning Process. The Commissioning Plan is written and approved by the Commissioning Authority, with input from the Design Professional and prime contractor, other

TYPICAL COMMISSIONING PROCESS



COMMISSIONING AUTHORITY OR PROVIDERS

In all phases, the overall duty of the Commissioning Authority is to direct and supervise the Commissioning Program for the owner. Specifically, during the Pre-Design phase, the Commissioning Authority should help the owner:

- ☑ Create the vision for the building project
- ☑ Document the Owner's Project Requirements (OPR)
- ☑ Outline the required building systems based on the Owner's Project Requirements document .
- ☑ Write the base Commissioning Plan
- ☑ Develop a project budget based on the OPR and Commissioning Plan
- ☑ Ensure the Design Professional, Contractor, and other members of the Commissioning Team have the required information

CXA SELECTION PROCESS

For an efficient and successful Commissioning Program, the Commissioning Authority must have the appropriate knowledge and experience for the particular type and location of the building being Commissioned. The selection process is similar to any hiring search and, among other considerations, may incorporate:

- ☑ Search for Commissioning Authority applicants by use of a Request for Qualifications
- ☑ Initial screening of position applicants and request-for-quotes
- ☑ Personal interviews and comparison of services offered
- ☑ Bid or cost comparisons
- ☑ Evaluation of potential conflicts-of-interest
- ☑ Final selection of the person or company best matched for the project

CONFLICT OF INTEREST

Since Commissioning is the owner's quality assurance program, if the Commissioning Authority is required to audit his or her own work, it creates a conflict-of-interest.

- ☑ The Contractor's work is the largest portion of the overall cost and time of the project, and there is the greatest likelihood for mistakes.
- ☑ The Design Professional will have the next greatest conflict-of-interest.
- ☑ The independent Commissioning Authority is next in conflict-of-interest.



COMMISSIONING COST



Commissioning costs vary considerably with project size and building type, equipment type, commissioning scope and traveling requirements.

- ☑ The project manager is advised, when possible, to contact a commissioning provider to discuss cost ranges for specific projects before finalizing a planning budget.
- ☑ As a very general rule, the total cost commissioning cost will include a design phase and construction phase component and will amount to approximately 0.5 to 1.8%

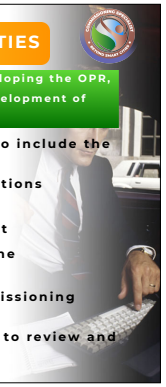
THE INTEGRATED APPROACH TO CXA



Commissioning costs vary considerably with project size and building type, equipment type, commissioning scope and traveling requirements.

- ☑ In the Integrated Approach to Commissioning, the Commissioning Authority is responsible for facilitating the Commissioning Program and works with the Design Professional,Contractor, TAB firm, and owner as a team.
- ☑ Except in very specific cases, the Integrated Approach to Commissioning i superior to the Single-Party Approach for the Commissioning Process. When implemented correctly, the Integrated Approach costs less in terms of time delays, salary, and outcome.

COMMISSIONING PROVIDERS RESPONSIBILITIES



At the beginning of the project, the CxP assists the Owner in developing the OPR, reviews the BOD, reviews the design documents, assists in the development of commissioning specifications, and develops the initial Cx Plan.

The Commissioning Authority requires the the CxA Plan to include the following:

- ☑ A general explanation of the Commissioning Process actions including what systems will be Commissioned
- ☑ The overall scope for the current Commissioning project
- ☑ Defined roles and responsibilities for each member of the Commissioning Team
- ☑ Lines of communication that will be followed for Commissioning information and activities
- ☑ The quality-based sampling system(s) that will be used to review and verify designs, materials, components, and test results


BEYOND
SMART CITIES
THANK
YOU
COMMISSIONING SPECIALIST
BEYOND SMART CITIES
LEARN.BEYONDSMARTCITIES.IN