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DESIGN-PHASE COMMISSIONING PROCESS
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MODULE 5

Design Review & CxA Process



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DESIGN-PHASE COMMISSIONING PROCESS OVERVIEW

Qualified CxAs focus on functionality and commissionability questions rather than comments, allowing them to analyze operating conditions and provide sensible answers. They reference the owner's project requirements, promoting discipline in the commissioning process. The commissioning authority ensures quality, while designers control it.

Learning Objectives

- Introduction
- Desian Review: Schematic Design Phase
- Design Review : Design Development Phase
- Design Review : Construction Documents Phase
- Development and Distribution of Design Review Comments

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INTRODUCTION

- After predesign, the schematic design phase begins.
- Assuming the owner's commissioning authority was actively involved in predesign, the CxA will have a thorough understanding of the owner's needs and be able to contribute to the design phase's success.
- It is important to first establish rapport between the commissioning authority and the design professional before diving into design specifics.
- The CxA is responsible for assisting the DP in developing the optimal system design for the project and ensuring that the DP's preferred design concepts achieve all performance objectives outlined by the owner.
- Design with the two guiding principles of the owner's building commissioning quality assurance process in mind: Quality is guaranteed by the agency doing the commissioning.

DESIGN REVIEW: SCHEMATIC DESIGN PHASE

- This is the design professional's first formal review, so carefully compare the schematic design review submittal to the owner's requirements.
- Avoid wasting owner and CxA time on incomplete documents.
- Note that the schematic design review phase emphasizes general design review.
- The most important building operations and maintenance concern is providing enough space for regularly accessed systems and equipment.
- This is when design requirements that meet owner project requirements become complicated.
- Therefore, now is the time to focus on the construction phase commissioning process needed to achieve results.
- As space and budget issues go unresolved, they become harder to fix in later design phases.





DESIGN REVIEW : DESIGN DEVELOPMENT PHASE



- All philosophical design decisions must be finalized and documented by the end of the design development phase, making it arguably the most crucial design phase.
- The design must not advance until all review criteria for design development have been satisfied.
- Critical to the overall success of the project is the documentation of the owner's project requirements and the design basis.
- This phase is the time to vigorously challenge the design philosophies and provisions and to ask perceptive questions, so that both the design professional and the owner are completely satisfied with the quality of the project at this stage.
- The design development review should determine whether the system design and control sequences meet the project owner's specifications.
- The building automation system (BAS) is the most important system to commission after life safety systems.
- Frequently, the building automation system is too far behind the rest of the design.

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DESIGN REVIEW : DESIGN DEVELOPMENT PHASE +

- commissioning, operating conditions, and performance requirements for each instance.
- According to the commissioning plan, the design development phase commissioning specifications should list the contractor's commissioning duties.
- Because volumes, pressures, and temperatures vary widely during operation, energy recovery systems are difficult to control.
- It's crucial to consider equipment operation and maintenance and repair.
- The commissioning authority's operating engineer experience is crucial during design development review.





DESIGN REVIEW : CONSTRUCTION DOCUMENTS PHASE



- At this point in the process, the final sizing of distribution systems and control components and the completion of specifications are necessary.
- The construction documents and commissioning specifications outline the roles and responsibilities of all commissioning process participants.
- In addition, the commissioning specifications must be described in detail.
- elucidate the specifications for each commissioning test.
- Later in this chapter, a more comprehensive discussion of the content and organization of commissioning specifications will be provided.

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DESIGN REVIEW : CONSTRUCTION DOCUMENTS PHASE

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DEVELOPMENT AND DISTRIBUTION OF DESIGN REVIEW COMMENTS





- The predesign conference discussed authority and communication protocols for building commissioning quality assurance program participants.
- While many informal lines of communication legitimately exist among many participants to keep the project moving at an optimal pace, formal communication protocols are sometimes necessary.
- considered formal review comments.
- If formal communication is not delegated, the owner must send design review comments to the DP.
- The commissioning authority reports to the owner, so the CxA's review comments must be delivered to the owner for integration with other design reviewers.
- The CxA can greatly impact the design review process and should not hesitate to influence the quality and character of all owner staff comments.
- First, the CxA must create a comment review format that the DP can read, understand, and distribute to others who must address the issues.
- Brief and concise review comments ensure all aspects are addressed.
- Face-to-face collaboration strengthens the DP team.

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