BEYOND SMART CITIES

CERTIFIED COMMISSIONING AUTHORITY
CXA EXAM PREP

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





OCCUPANCY PHASE CXA

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LEARNING OBJECTIVES



- Occupancy Phase Commissioning
- Occupancy Phase Commissioning Objectives
- Occupancy & Operation Phase Commissioning Activities
- Commissioning Tests vs Commissioning Test Demonstration
- Facilitate The Acceptance Phase
- Progress Reports
- Commissioning Final Reports

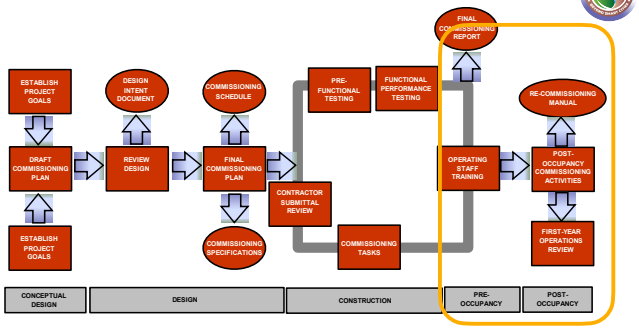
OCCUPANCY PHASE COMMISSIONING

The Occupancy and Operation Phase normally begins at Substantial Completion when the building is turned over to the Owner, though some construction phase activities may still be in process. The Occupancy and Operation Phase normally begins at Substantial Completion when the building is turned over to the Owner, though some construction phase activities may still be in process.

In the Occupancy and Operations Phase all uncompleted activities from the construction phase are finished (project closeout activities) as well as the long-term processes for ensuring building performance over time being developed and put into place (ongoing maintenance and performance activities).

The reasons for post-occupancy testing are numerous; the most common reason is that some functional tests cannot be performed before occupancy either due to seasonal variables

TYPICAL COMMISSIONING PROCESS



OCCUPANCY & OPERATION PHASE CXA OBJECTIVES

Facilitate the continued engagement of the Cx team and verify the completion of outstanding Cx issues.

- Complete any seasonal and deferred functional testing and O&M staff training and occupant orientation.
- Complete systems and commissioning documentation.
- Evaluate project success,Optimize building performance.
- Develop and begin implementation of a plan for commissioning the building over time (Ongoing Commissioning).
- Survey occupants, formally check in with operations staff and assess issues.
- Benchmark energy performance and evaluate and track performance over time.

OCCUPANCY & OPERATION PHASE CXA ACTIVITIES



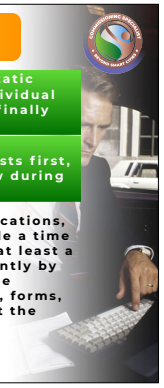
- ☑ Provide timely addressing and tracking of performance problems and incomplete items from the Cx Issues Log. The CxP encourages Owner project managers and contractors to address issues before the project loses sufficient momentum to effectively deal with them.
- ☑ Conduct and verify completion of outstanding O&M personnel training. According to the contract documents, the Contractor conducts deferred training of the O&M personnel. CxP or Owner personnel evaluate the effectiveness of the training program and make a recommendation as to the need for supplemental training.
- ☑ Complete seasonal and deferred functional testing.

OCCUPANCY & OPERATION PHASE CXA ACTIVITIES+



- ☑ Conduct periodic check-ins with Operation and Maintenance staff.
- ☑ Optimize systems.
- ☑ Conduct an occupant survey.
- ☑ Perform a Building Operations Review.
- ☑ Compile a Final Commissioning Report.
- ☑ Evaluate project success.
- ☑ Update the Project Documentation Systems Operations Guide
- ☑ Provide an Occupant User's Guide.
- ☑ Develop a preventive maintenance plan.
- ☑ Develop and begin implementation of the Ongoing Commissioning Program.
- ☑ Update the OPR and Systems Operations Guide.

PERFORMANCE COMMISSIONING TESTS



Commissioning tests are usually conducted starting with static tests, then equipment and system's startup tests, next individual component and/or apparatus tests, subsystems' tests, and finally systems' and inter-system tests.

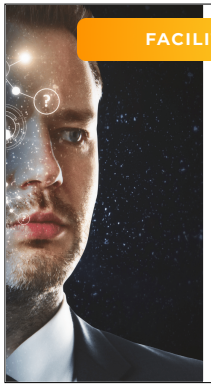
Following the previously documented Commissioning Test Procedures, the contractor is responsible to perform the tests first, recording the conditions and results of each test for review during the Commissioning Process Meetings.

- ☑ If the results of the contractor's tests are within specifications, the contractor and Commissioning Authority then schedule a time for the Commissioning Authority to witness the tests for at least a sample of the area or equipment, to be chosen independently by the Commissioning Authority, to validate the results of the contractor's tests. the provision of documents, checklists, forms, etc. to the contractor to be able to perform and document the tests required.

CXA TESTS VS CXA TEST DEMONSTRATION

It is vital that the contractor first perform and document results for each Commissioning test without the presence of the owner or Commissioning Authority.

- Static tests should be conducted first during the Commissioning testing process. Static tests include such tests as leakage of ducts or pipes, or how well insulation is working.
- The Commissioning Authority should witness the initial startup of all systems and equipment;
- Startup Tests are the only exception to the rule that the contractor perform all tests and ensure positive results before having the Commissioning Authority witness the test.
- Third on the list in the Commissioning Test process order is that of performing Component and System Tests. These must be completed prior to starting system performance testing,



FACILITATE THE ACCEPTANCE PHASE

- The Commissioning Authority is responsible to publish progress reports after each Commissioning meeting.
- The construction phase Commissioning Final Report is a formal, all-inclusive document, sometimes also called the Commissioning Summary Report.
- Case studies can provide validation to the industry of the economic and functional benefits of the Commissioning process and also function as a valuable marketing tool for the Commissioning Authority whose invaluable services are documented in the case study.

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THANK YOU

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