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PRE- AND POST-OCCUPANCY PHASE COMMISSIONING PROCESS

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MODULE 4

Post-Occupancy and Off-Season Testing

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PRE- AND POST-OCCUPANCY PHASE COMMISSIONING PROCESS OVERVIEW

Pre- and post-occupancy typically begin at Substantial Completion, when the building is handed over to the Owner; however, some construction phase activities may continue. During the Occupancy and Operations Phase, project closeout activities and long-term building maintenance and performance processes are developed and implemented.

Learning Objectives

- Introduction
- Seasonal or Delayed Tests and Training
- Warranty Activities
- Optimisation and Adjustment
- Acceptance Phase Overview
- Monitoring ,Ongoing CxA & Recommissioning

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INTRODUCTION

- It was determined that the Pre- and post-occupancy CxA phase is the final phase of the building systems commissioning procedure.
- The commissioning process outlined in the commissioning specialist manual comprised five phases, with acceptance and post-acceptance being the final two.
- The Occupancy and Operations Phases consist of these two phases.
- Some commissioning providers (CxPs) may still use acceptance and post-acceptance instead of occupancy and operations.
- The Occupancy and Operations Phase can continue indefinitely if the owner retains the CxP for some form of ongoing commissioning (OCx).

POST-OCCUPANCY AND OFF-SEASON TESTING

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- Typically, the activity that will not be completed during commissioning is performance testing of system and intersystem functions.
- Before allowing occupants to move into the new facility, the owner should initiate post-occupancy testing communication.
- Then, prior to conducting post-occupancy testing, it is imperative that the owner fully inform the occupants of the testing to be conducted and the potential impact, if any, on the occupants.
- Post-occupancy testing includes many considerations similar to those involved in retro-commissioning, which is usually done in an existing building that is fully occupied.





POST-OCCUPANCY AND OFF-SEASON TESTING+



- The previous lecture discussed the unique problems associated with commissioning an occupied building and provided guidance on occupied building-related issues, many of which are also applicable to post-occupancy commissioning testing.
- Some functional performance testing cannot be performed until the conditions are optimal.
- It is nearly impossible to test the heating system's response to a natural load during the summer or the cooling system during the winter.
- Thus, testing the cooling system must not only be avoided during the winter, but the facility must also be at full occupancy in order to observe the predicted cooling load and test the performance of the system accordingly.
- Post-occupancy testing typically focuses on a handful of typical spaces.

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- For confirmation of functionality, with a focus on spaces that may be more sensitive or crucial to ensuring the system is operating as intended,
- Nevertheless, some functional performance testing can be conducted during the off-season if a component or subsystem can be temporarily subjected to a false load.
- Herein lies the greatest utility of the CxA's inventiveness.



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- For instance, the performance of a bank of cooling coils might be effectively tested by using the system's steam preheat coils to approximate the summer design-condition outdoor air temperature.
- It is highly desirable to false-load system components whenever possible and without requiring excessive effort.
- This method is preferable to waiting for testing during the season.
- False-load tests will validate the fundamental system functions and capacities.

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- Even if false-load tests have been conducted prior to substantial building completion, it is still advantageous to evaluate the response of the various systems to natural loads in real time, either before or after substantial building completion.
- The CxA must ensure the owner understands the concerns and risks associated with false-load testing during the off-season in an unoccupied facility versus normal-load testing during the on-season in an occupied facility.

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