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LEED AP(BD+C),GSAS CGP,GCP,ISO 14001
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MODULE 18

Building Enclosure Commissioning



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CERTIFIED COMMISSIONING AUTHORITY CXA EXAM PREP OVERVIEW

Building Enclosure Commissioning (BECx) is a rigorous process that evaluates and verifies the energy performance of a facility, system, or assembly against defined objectives and criteria. The commissioning team uses reliable measures to ensure the project meets specific quality requirements set by the project owner.

Learning Objectives

- Introduction
- What is Building Enclosure Commissioning?
- Building Enclosure Commissioning Objectives
- LEED Certification
- The Major Components of Building Envelope Commissioning
- Benefits of Building Enclosure Commissioning

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INTRODUCTION

- Building Enclosure Commissioning (BECx) (sometimes 'envelope' is used instead of 'enclosure') is a strict quality-focused process wherein the energy performance of a facility, system or assembly is evaluated and verified against defined objectives and criteria.
- The process itself is carried out by a commissioning team which uses reliable and accurate measures to verify that the project is meeting specific quality requirements outlined by the owner of the project.
- The commissioning process begins at project inception and runs through different construction phases, which include a pre-design phase, pre-construction phase and construction phase.
- Once the construction is finished, the commissioning process continues and becomes an ongoing routine in the life of the facility.
- Specific information regarding the commissioning process is outlined in the ASHRAE Guideline 0-2005: The Commissioning Process.
- This and several other technical support guidelines to the Guideline 0-2005 document provide specific information related to the commissioning process.



WHAT IS BUILDING ENCLOSURE COMMISSIONING?

- Building Enclosure Commissioning (BECx) (sometimes 'envelope' is used instead of 'enclosure') is a strict quality-focused process wherein the energy performance of a facility, system or assembly is evaluated and verified against defined objectives and criteria.
- The process itself is carried out by a commissioning team which uses reliable and accurate measures to verify that the project is meeting specific quality requirements outlined by the owner of the project.
- Commissioning (sometimes abbreviated "Cx") is an owner-driven quality delivery process.
- It means representing the building owner's interests in high performance, starting as early as the pre-design phase and extending into as much as one year of building operation.

What is Building Enclosure Commissioning?+

- The commissioning process begins at project inception and runs through different construction phases, which include a pre-design phase, pre-construction phase and construction phase.
- **Once the construction is finished, the commissioning process continues and becomes an ongoing routine in the life of the facility.**
- **Specific information regarding the commissioning process is outlined in the ASHRAE Guideline 0-2005: The Commissioning Process.**
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BUILDING ENCLOSURE COMMISSIONING OBJECTIVES

- To improve the quality of the design deliverables, write down what the owner wants.
- Check that the systems and assemblies work the way the owner wants them to, as outlined in the Owners Project Requirements (OPR).
- Make a note of the design requirements in a letter called the Basis of Design (BOD).
- Make sure that the owner gets the right proof before, during, and after construction.
- Make sure that the people who run the facility have been taught how to do it right.

LEED Certification

- BECx helps construction projects achieve LEED certification in addition to building performance and cost savings.

- **LEED v4 is the newest version providing more flexibility for individual projects, a performance-based approach to the design, and an expanded focus on materials, looking at the total amount and impact on human health. Reference guides for the newest updates to LEED v4 are available on the USGBC website.**

- **LEED considers fundamental and enhanced BECx commissioning. All LEED projects must use fundamental commissioning, however enhanced commissioning needs a design assessment by the independent third-party CxA. Basic commissioning involves design approval and field installation mock-ups. Yet, the more BECx services an Owner uses, the higher their LEED score and certification.**

- **BECx professionals can maximise LEED points. Evan Mills, PhD, a Lawrence Berkeley National Laboratory researcher, calls BECx "the single-most cost-effective technique for decreasing energy, prices and greenhouse gas emissions in buildings today." Here's Mills' study.**



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THE MAJOR COMPONENTS OF BUILDING ENVELOPE COMMISSIONING

The Major Components of Building Envelope Commissioning

- Developing the owner's project requirements (OPR) building-envelope-commissioning.
- Developing the commissioning plan
- Reviewing plans, specifications and submittal documents
- Conducting pre-installation meetings and site inspections
- Conducting testing of systems
- Developing systems manuals
- Conducting training for staffioning an important part of the design and building process.

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BENEFITS OF BUILDING ENCLOSURE COMMISSIONING



Benefits of Building Enclosure Commissioning

- Reduced risk of leaks, disruption, lawsuits, loss of rent, and remedial construction.
- **Running expenditures might make approximately 80% of a building's lifespan cost. The U.S. General Services Administration found that "running expenses for commissioned buildings are reported at 8–20% lower than those of a comparable non-commissioned building."**
- **Less delays Project management solutions help contractors schedule work more efficiently, speeding up construction. To keep the project on track, identify and fix common challenges.**
- **Early issue identification and resolution can accelerate projects. Revenue properties can create rental revenue sooner, decreasing the high expenses of development money, loans, etc.**
- **Minimal design influences The trained commissioning agent checks the design and submittals for design concerns. .**
- **Construction quality control The owner's quality assurance processes to monitor important building envelope components during construction will assist ensure design intent is met. Quality-assurance methods allow the commissioning agent to address many unexpected problems before they cause cost overruns and delays. Building envelope systems are quite complicated.**
- **Complete construction documents. Including commissioning into the design and construction process provides useful information for building operations and maintenance.**

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Building Enclosure Commissioning Training - BECxP

On-demand learning courses

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What you will learn in this Course

THE KEY TAKEAWAYS FOR THE COURSE

- What exactly is meant by the term "building enclosure commissioning"?
- Establish a clear distinction between building enclosure commissioning and the commissioning of other systems and envelope services.
- Enclosure of the building, the commissioning process's goals, and its benefits
- Explain the goals that should be accomplished through a thorough enclosure commissioning procedure.
- Appreciate the many benefits that enclosure commissioning offers to the owners of buildings.
- Explain some standard testing procedures for enclosures.



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