

BUILDING ENVELOPE COMMISSIONING

The Building Enclosure performs important physical but also and symbolic functions.

By expressing of the owner's and architect's vision, protecting the structure and its occupants, and influencing energy efficiency, the building enclosure serves many purposes.

Achieving the proper balance of all of these requirements involves in-depth understanding of the owner's needs, the climatic forces, and the intended use of the building, while also meeting code compliance, constructability, durability and budgetary requirement.

Building Envelope Commissioning (BECx) is a process designed to ensure that the Owner receives the finished building they are expecting.

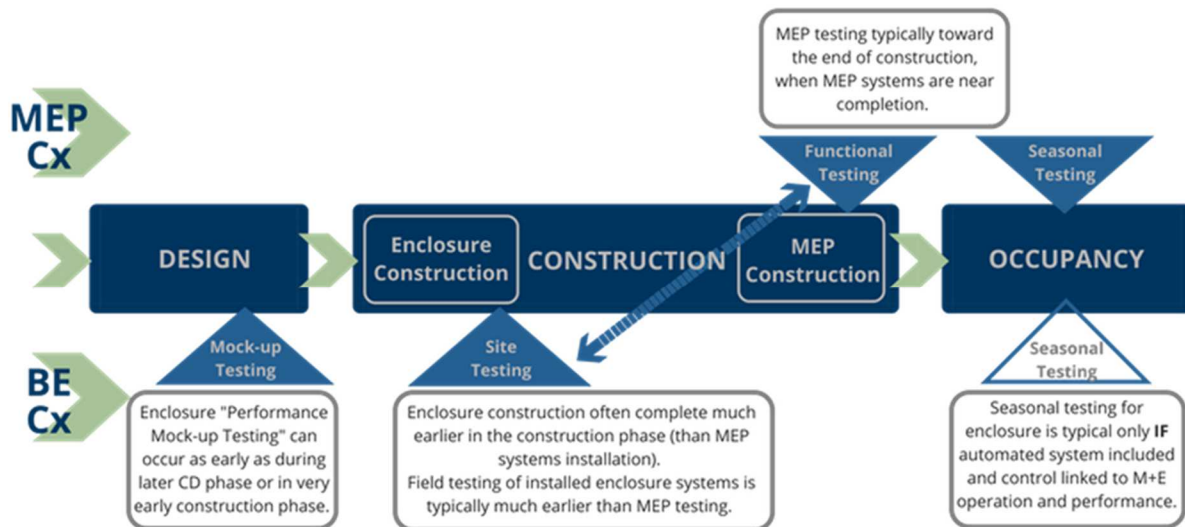
Benefits of performing BECx include:

- Improved building durability
- Improved building performance
- Confirmed achievement of design intent
- Education of building operators
- Improved team communication
- Elevated Quality Assurance awareness
- Clear definition of roles and responsibilities
- Clear Owner Project Requirements (OPRs)
- Project priorities that improve decision making
- 2-credit point option - LEED v4
- 1-point ID credit - LEED 2009 (Enhanced Cx)
- Compliance with certain local energy codes

HOW AND WHEN BECx DIFFERS FROM MEPCx

The Quality Assurance process that is Building Envelope Commissioning requires design reviews, mock-ups, site visits, testing, hand-over to operations and finally verification after one year.

The critical line of defense for the envelope systems is typically only accessible during construction. Costs to repair concealed systems can often exceed the original installation cost when deficiencies are not located during construction.



Testing at completion is useful in confirming the integrity of the finished product, but far too late to locate issues and resolve them during construction. Testing of mock-ups whether in place or stand-alone can save significant construction costs and keep the project on schedule.

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WHY START BECx SO EARLY?

BECx involvement starts in design because **decisions made early greatly impact how the building will perform and because late changes always cost more.** During early participation, we advise the project team on the potential consequences of design decisions and help find solutions to project challenges.

As an independent third party, Morrison Hershfield works with the project team to help ensure that the building envelope meets the Owner's expectations for **cost, quality, durability and maintenance**, as defined in the Owners Project Requirements (OPR).

TYPICAL BECx TASKS BY PHASE:

Planning Phase

- Verify OPRs for building envelope systems.
- Prepare BECx plan to help ensure that the OPRs are described, documented, and communicated in the contract documents.

Design Phase

- Perform design document reviews
- Create commissioning forms and checklists for project-specific envelope systems.
- Develop test procedures for project-specific envelope components and details.
- Verify that envelope design meets OPRs and advise Owner.

Construction – Initial Installation

- Review sequencing of different trades with GC and sub-contractors present.
- Review installation at the interface of different assemblies.
- Verify that installation meets the OPRs and advise Owner.
- Witnesses and/or perform testing early in construction.
- Help resolve unforeseen conditions, before full installation begins.

Construction – On-going

- Review in-progress construction against contract documents
- Verify materials and systems meet specifications through contractor submittals.
- Verify assemblies are installed correctly to perform in accordance with the OPRs.
- Determine if changes proposed during construction impact building envelope performance and advise Owner.

Construction – Completion

- Oversee training of operations team.
- Compile Building Envelope Operations Manuals.
- Prepare a plan for addressing user issues.
- Issue a commissioning report including warranty period activities.

Warranty Period

- Track the resolution of the Owners issues and seasonal commissioning activities.
- Provide a final BECx report that includes a plan to resolve any outstanding concerns.



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