



| v3 - LEED 2009

## Enhanced commissioning

EAC3 | Possible 2 points

Glossary

### Intent

To begin the commissioning process early in the design process and execute additional activities after systems performance verification is completed.

### Requirements

Implement, or have a contract in place to implement, the following additional commissioning process activities in addition to the requirements of EA Prerequisite 1: Fundamental Commissioning of Building Energy Systems and in accordance with the LEED Green Building Design and Construction Reference Guide, 2009 Edition Healthcare Supplement:

#### Option 1 (1 point)

1. Prior to the start of the construction documents phase, designate an independent commissioning authority (CxA) to lead, review and oversee the completion of all commissioning process activities. The CxA shall, at a minimum, perform Tasks 2, 3, and 6. Other team members may perform Tasks 4 and 5.
  - a. The CxA must have documented commissioning authority experience in at least two building projects.
  - b. The individual serving as the CxA:
    - a. Must be independent of the work of design and construction.
    - b. Must not be an employee of the design firm, though he or she may be contracted through them.
    - c. Must not be an employee of, or contracted through, a contractor or construction manager holding construction contracts.
    - d. May be a qualified employee or consultant of the owner.
  - c. The CxA must report results, findings and recommendations directly to the owner.
  - d. This requirement has no deviation for project size.
2. The CxA must conduct, at a minimum, one commissioning design review of the owner's project requirements, basis of design, and design documents prior to the mid-construction documents phase and back-check the review comments in the subsequent design submission.
3. The CxA must review contractor submittals applicable to systems being commissioned for compliance with the owner's project requirements and basis of design. This review must be concurrent with the review of the architect or engineer of record and submitted to the design team and the owner.
4. Develop a systems manual that provides future operating staff the information needed to understand and optimally operate the commissioned systems.
5. Verify that the requirements for training operating personnel and building occupants have been completed.
6. The CxA must be involved in reviewing the operation of the building with operations and maintenance (O&M) staff and occupants within 10 months after substantial completion. A plan for resolving outstanding commissioning-related issues must be included.

#### Option 2 (2 points)

Achieve OPTION 1 AND

Commission the building's thermal envelope systems in accordance with the requirements of Option 1. Commissioning of the building envelope shall be in accordance with ASHRAE Guideline 0-2005, the Commissioning Process, and National Institute of Building Sciences (NIBS) Guideline 3-2006, Exterior Enclosure Technical Requirements for the Commissioning Process.

The building thermal envelope entails all exterior wall assemblies separating a building's conditioned spaces from outdoor ambient conditions, including: roof assemblies, vapor barriers, diffusion retarders, air barrier systems, rain-screen layers, flashings, cladding and siding, windows, curtain-wall assemblies, doors, thermal bridges, and utility penetrations, such as piping, electrical conduit, duct-banks and other entry-points made for routing HVAC system components. For major renovations, substantial performance upgrades must be installed on at least 25% of the exterior envelope surface area.

In support of the process requirements in Option 1, the following sequence of steps shall be taken to ensure an effective building thermal envelope commissioning process:

- Convene meeting to review with the entire green building project team the goals and objectives of the process and coordinate/assign the related tasks.
- Conduct building thermal envelope design review.
- Develop thermal envelope commissioning work plan and schedule.
- Develop coordinated documentation plan.
- Ascertain functional performance test and inspection procedures (i.e. determine reference standards).
- Review thermal envelope components and assemblies mock-ups where relevant.
- Conduct scheduled field quality assurance inspections per work plan; document inspections.
- Inspect corrections of defects encountered during inspections.
- Prepare final report.

Note: These are typical steps, but not the only options available.

