

Benefits and best practices of building commissioning

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Building commissioning (Cx) is a multifaceted process, involving:

- Assuring quality in building construction
- Preparing the building to succeed
- Setting the stage for operations and maintenance (O&M)
- Confirming the mission (building owner's project requirements (OPR))
- Committing to team process collaboration
- And even resulting in an owner-paid insurance policy for architects and engineers

The benefits make all the work worth it:

- Owner's project requirements are achieved
- Reduced callbacks to job site and downtime
- Can reduce construction and operating costs
- Energy conservation measure operates correctly
- Attractive paybacks

Best-practice Cx involves four separate phases:

PHASE 1

Pre-design – The OPRs are specified (including energy efficiency goals) and the initial Cx plan is documented. Best practice is to hold an OPR workshop with all of the stakeholders. When reviewing Cx design, be sure to maintain a respectful tone, reference your Cx experience and preserve the designer's reputation.

PHASE 2

Design – The Cx lead reviews Cx requirements with the contractor. This stage requires systems thinking and emphasizes energy and sustainability goals. Review the Basis of Design document and all drawings to drive the development of construction phase Cx checklists, such as equipment and assembly verification and pre-installation checks of equipment and material condition.

PHASE 3

Construction – The Cx lead develops equipment and system test procedures. This may involve the local authority having jurisdiction. These test procedures are step-by-step instructions that identify the instrumentation, tools and supplies required. Pay attention to substitutions and proposed deviations from the contract documents. Verify that the O&M manual exists and is sufficient for use in training users.

PHASE 4

Occupancy – Continue to update the issues logbook. Training items for first-year operation should cover electrical, mechanical, plumbing and control systems. Warranty items are to be checked after the first year.



For more details on Cx, review the Illuminating Engineering Society (IES) Design Guide 29, *The Commissioning Process Applied to Lighting and Control Systems*, as well as ASHRAE Standard 202-2013, *Commissioning Process for Buildings and Systems*.

Build energy efficiency into your new building. We can help.

Call 1-800-787-1706, email energysavings@nationalgrid.com or visit ngrid.com/business.