



# Ongoing Commissioning OCx Best Practices

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# 7.0Cx AND LEED CERTIFICATION



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# Learning Objectives

- Introduction
- Ongoing commissioning and LEED



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**In-process commissioning has benefits that extend far beyond merely preventing the loss of efficiency. In addition, ongoing commissioning is beginning to make an appearance in green building rating systems, which is a positive development.**



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# Introduction

An ongoing program tailored to meet facility operational requirements and sustainability goals. Successful programs may be initiated any time during the life of a building: immediately after construction of a commissioned building or years later in a building that was never commissioned.

The U.S. Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED) Existing Building (EB) Operations and Maintenance (O&M) v4 Energy and Atmosphere (EA) Credit 2.3: Existing Building Commissioning – Ongoing Commissioning provides the following definition:

Ongoing commissioning is a continuous process that methodically identifies and corrects system problems to maintain optimal building performance; it includes regular measurement and comparative analysis of building energy data over time.





# Typical Objectives of Ongoing Commissioning

- Bring equipment to its proper operational state
- Verify that facility and its systems meet the Owner's requirements
- Improved building performance resulting in reduced energy usage and operating costs
- Identify and resolve building system operation, control, and maintenance problems
- Reduce or eliminate occupant complaints and increase tenant satisfaction
- Document system operation
- Identify additional Operations & Maintenance (O&M) personnel training requirements
- Assist in achieving LEED Existing Building O&M certification
- Improve the building's ENERGY STAR rating



# Key Components

- Ongoing Commissioning Plan: Outlines the team organization, goals, schedule, allocation of resources, and documentation requirements of the commissioning process.
- Commissioning Issues Log: Record of the issues identified during functional performance testing that includes a detailed description, priority level, and responsible party to facilitate corrective action response.
- Functional Performance Tests: Test forms used to verify and document HVAC and lighting equipment operation.
- Current Facility Requirements and Building Operating Plan: Identify owner's operating requirements such as space temperature/humidity, outside air fractions, and schedules.
- Site Visit Reports: Overview of the work accomplished, key observations, update on testing progress, commissioning issues log, and low-no cost energy conservation opportunities identified for consideration.

# LEED Ongoing Commissioning

## Intent

To use the existing building commissioning process to improve building operations, energy, and resource efficiency.

## Requirements

### Establishment

Meet the requirements of EA Credit Existing Building Commissioning–Analysis and EA Credit Existing Building Commissioning–Implementation. Establish an ongoing commissioning process that includes planning, point monitoring, system testing, performance verification, corrective action response, ongoing measurement, and documentation to proactively address operating problems in the systems being commissioned. Develop an on-going commissioning plan that defines the following:

- roles and responsibilities;
- measurement requirements (meters, points, metering systems, data access);
- the points to be tracked, with frequency and duration for trend monitoring;
- the limits of acceptable values for tracked points and metered values;
- the review process that will be used to evaluate performance;
- an action plan for identifying and correcting operational errors and deficiencies
- planning for repairs needed to maintain performance;
- the frequency of analyses in the first year (at least quarterly); and
- the subsequent analysis cycle (at least every 24 months).



# Performance



- Implement the requirements that are listed below to all systems that directly consume or produce energy, such as lighting, process loads, HVAC&R, domestic water heating, and renewable energy.
- Keep the user's manual for the system up to date with any changes or new configurations, and document why any deviations from the original design were made. Identify several approaches that might be taken to enhance operations and maintenance.
- Provide both quarterly and annual reports on the performance of the building systems throughout the first year of implementation.
- Maintain an up-to-date plan for the facility's operations and maintenance, as well as its current requirements, and publish revised versions of these papers on a yearly basis. To demonstrate that progress has been made, only those actions that are directly related to ongoing commissioning and have been finished within the previous two years can be included in the LEED application.



# Thanks



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