



BEYOND
SMART CITIES

MAINTENANCE AND COMMISSIONING - CEM
REFRESHER TRAINING COURSE

KRISHNAJI PAWAR, LEED AP BD+C, GSAS CGP, ISO 14001:2015, GCP
CEM REFRESHER TRAINING COURSE





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CONDUCTING ONGOING COMMISSIONING
FOR ENERGY PROFESSIONALS

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LEARNING OBJECTIVES



Ongoing Commissioning (OCx)
Scope and Purpose of OCx, Phases of OCx

Evaluate building systems performance

Review and Update the Current Facility Requirements (CFRs)

Conduct a Gap Analysis of Existing Technology Infrastructure

ONGOING COMMISSIONING (OCX)

Ongoing Commissioning is the means and process of investigation, evaluation, monitoring, and implementation of improvement measures related to facility performance on a continuous basis to maintain the built infrastructure to the performance standards of the Current Facility Requirements.

The scope of OCx includes existing buildings, systems and assemblies, which typically would be planned for/scoped/set up in the Occupancy and Operations Phase of NCCx or the Hand-Off Phase of EBCx.

The purpose of OCx is to maintain and continuously improve building performance for:

- ☑ Evolving CFRs due to change in facility use, system changes, and/or building renovations.
- ☑ Energy use reduction/containment while maintaining environmental condition requirements.
- ☑ Proactively identifying degradation in system performance for correction prior to occupant impact.
- ☑ Proactively identifying degradation in system performance for correction prior to operational



PHASES OF OCX

Ongoing Commissioning comprises the following sequential phases. Each phase is discussed in a separate section of this document.

- ☑ **Planning** : Initial team formation, communication planning and facility condition assessment. Includes documenting Owner's goals and objectives
- ☑ **Implementation**: Implementation of people and technology as applicable to enable the OCx process.
- ☑ **Sustaining** : Means and methods to transition OCx monitoring and sustained building performance to building operator and Owner core responsibilities.



REVIEW AND UPDATE THE CURRENT FACILITY REQUIREMENTS (CFRS)

- ☑ During the facility Condition Assessment, the CxP will review the CFR's to ensure these requirements are documented for the building, are up to date, and/or if the facility condition indicates significant variation to the CFRs.
- ☑ The CFRs serve as a foundation for defining how the building systems are operated to support the purpose of the building. Should the CFRs not be defined or are out of date, the CxP will work with the OCx team to document and/or update the CFRs.



CONDUCT A GAP ANALYSIS OF EXISTING TECHNOLOGY INFRASTRUCTURE

✓ A gap analysis identifies where existing data acquisition systems (BAS, utilities, other monitoring) are incapable of, or are not currently gathering, specific data streams required for the OCx process.

✓ The technology- infrastructure gap analysis will be the foundation of understanding used in designing and determining the additional technology needs to meet the OCx project requirements. These additional technologies may include additional BAS or other monitoring system points, archiving and retrieval features, analytics software and interface, remote access features, etc.



COMMISSIONING: WHERE TO FROM HERE?

✓ Check Building Commissioning Association site and publications

✓ Check ASHRAE course and Guideline 1

✓ Check AEE course and certification



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THANK YOU

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