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WELCOME TO BEYOND MONITORING BASED COMMISSIONING - MBCX

ONLINE TRAINING

KRISHNAJI PAWAR - CEO & FOUNDER



03

MBCx Planning Phase

SECTION - MBCX



This section establishes the technical plan and scope for how monitoring-based commissioning will be implemented using either a new or previously installed EMIS. The monitoring activities (key performance indicators and analytics) are defined in the Monitoring Action Plan (MAP) to help meet and maintain the current facility requirements. The metrics, views, and analytics in the MAP will be made available through the EMIS.



Preparing Countries & Tomorrow's Commissioning Specialists

Learning Objectives

- Brief Introduction
- Collect Building Documentation and Create/Update Current Facility Requirements (CFR)
- Define High Priority Systems for Performance Monitoring
- Specify or Enhance EMIS
- Create a Training Plan

Introduction

- Hire a Cx agent and/or designate an internal team to identify and implement MBCx projects.
- Benchmark campus buildings and identify the best candidates for the MBCx program.
- Submit a project application to the Partnership for each project to be implemented.



MBCx Planning Phase – Activities

- Collect building documentation and create/update current facility requirements (CFR)
- Define high priority systems for performance monitoring
- Create a Monitoring Action Plan (MAP)
- Specify or enhance an Energy Management and Information System (EMIS)
- Create a Training Plan

Collect Building Documentation and Create/Update Current Facility Requirements (CFR)

- The CFR will be used to inform the development of the MAP , as EMIS metrics and analytics will be included to check that the CFR is being met.
- Another document that will guide the development of the MAP is the current sequence of operations, as faults will be identified when systems are not operating per the intended sequences.

Define High Priority Systems for Performance Monitoring

In this MBCx Plan, defining high priority systems for performance monitoring narrows the focus of monitoring to the more critical systems and issues. Priority will be given to

Create a Monitoring Action Plan (MAP)

The MAP is the most important document for delineating the MBCx process's analysis. The MAP's metrics, views, and analytics will be accessible through the EMIS. The MAP has been developed to provide facility operators with a fast reference guide outlining what will be monitored to optimise the HVAC and lighting control systems over time. It addresses the following subjects:

- Key performance indicators and analytics that will be tracked in the EMIS
- The EMIS functionality that will be used to track them
- What to review in the EMIS to find performance issues or areas for improvement

Specify or Enhance EMIS

When choosing an EMIS to meet the needs outlined in the MAP, it is important to think about who will use the system and how they will use it. The EMIS will be used by staff to perform the following MBCx activities:

- Identify issues and opportunities using the EMIS: For a quick summary view at a portfolio level, colour-coded anomaly conditions and automated analysis within the EMIS will be used to identify and prioritise areas for improvement. Charts (such as load profile charts, for example) may also be created for manual or visual review of energy performance.
- Root cause analysis and investigation: After system performance issues have been detected, analytic results will be reviewed within the EMIS, through the building automation system, and with field observation to pinpoint a specific resolution.
- Identify and take corrective actions: Using the EMIS as a tool to help feed problems into the work order system, a plan will be made and carried out to fix the problems.
- Reporting: The EMIS will be used to regularly report on the results of MBCx efforts, either by keeping track of metrics or by measuring and confirming that energy savings have been made.

Section 1: MBCx Planning Phase		
1.1 Collect building documentation and create/update current facility requirements (CFR)	Normal operating ranges for each monitored system are documented in the CFR. At a minimum, the CFR should include indoor temperature and humidity requirements in occupied and unoccupied mode, as well as the building operating hours. The CFR should also include requirements for special use areas. The intended control sequences, along with the CFR, will be used to inform selection of monitoring and analytics.	Building energy managers and engineers, and MBCx providers
1.2 Define high priority systems for performance monitoring	High priority issues include maintaining performance of corrective actions implemented through a prior commissioning project, systems that routinely have performance issues, and other key energy-saving features. [a prior commissioning report may be referenced here, if applicable]. The high priority systems for monitoring will be included in the Monitoring Action Plan.	Building energy managers and engineers, and MBCx providers
1.3 Create a Monitoring Action Plan (MAP)	The Monitoring Action Plan (See Appendix B) defines what key performance indicators (KPIs) and analytics will be tracked in the EMIS, the EMIS functionality that will be used to track, and how to review the EMIS to find performance issues or areas for improvement. This is the key document for defining ongoing analyses associated with MBCx.	Building energy managers and engineers, and MBCx providers
1.4 Specify or enhance energy management and information system (EMIS)	EMIS has been selected based on MBCx program scope, MAP, and organizational needs and resources. [or] The existing EMIS will be utilized [specify upgrades to existing EMIS and hardware if applicable]	Building energy managers and engineers, and MBCx providers
1.5 Create a Training Plan	An MBCx Training Plan has been developed, covering: sensor calibration, troubleshooting data quality issues, EMIS capabilities and navigation, use of the MAP, and training on building systems' improvements.	Building energy managers and engineers, and MBCx providers



Create a Training Plan

An MBCx Training Plan will train new and current staff on EMIS, MAP, and system settings changes. Training topics include:

- CFR and control sequences of operation
- Sensor calibration
- Troubleshooting data quality issues
- EMIS capabilities and navigation
- Using the MAP
- Training on building systems improvements

NEXT





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