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3. PLANNING PHASE EBCX

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COMMISSIONING SPECIALIST CURRICULUM



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Learning Objectives

- Introduction to Planning Phase
- Engage a Commissioning Provider
- Advanced Existing Building Commissioning – EBCx
- Define Owner's EBCx Goals and Objectives
- Conduct a CFR Workshop or Questionnaire
- Initiate EBCx Plan
- Define Roles & Responsibilities
- Conduct a Kickoff Meeting and Deliverables

The objective of the Planning Phase is to engage the Commissioning Provider (CxP), document the facility's current operational conditions and requirements, confirm the Owner's project goals and objectives, and plan the process for executing the work for the EBCx program.





Introduction

The Planning Phase includes these activities.

- Engage a Commissioning Provider
- Screen the Building for EBCx Viability
- Define Owner's EBCx Goals and Objectives
- Confirm Scope of Work, Schedule and Budget
- Conduct Cursory Walk-Through to Identify General Conditions
- Ascertain/Examine/Develop Current Facility Requirements (CFR)
- Initiate EBCx Plan
- Define Roles & Responsibilities
- Select the Initial EBCx Team
- Conduct a Kickoff Meeting

Engage a Commissioning Provider / Authority

The required qualifications for a commissioning provider for an EBCx project are:

1. Knowledge of the project's vertical market sector and building type. CxPs are needed in vertical markets such commercial office, healthcare, K-12, data centres, and labs. Higher education, frequently considered a single market area, needs facility type expertise.
2. Proven experience commissioning building assemblies, systems, and equipment.
3. Experience supervising and/or implementing the EBCx project's facility improvement measures (FIMs).
4. Proven performance and energy savings when project goals are met.
5. Best practise prohibits owners from self-managing EBCx since they often lack knowledge and time. An recognised CxP, such the Building Commissioning Certification Board, is preferable.

Third-Party Contracts – Types and Negotiation

- Whenever a CxP is hired via a third-party contract, all parties must agree on a scope of work, positions, timetable, and CFR.
- Contracts should explicitly describe the payment method, timeline, and criteria to prevent interruptions between the Owner and CxP.
- A master service agreement or other contractual vehicle should keep the CxP for task orders. The Owner and CxP might add EBCx phase work orders and apply particular measures with utmost freedom.
- If a master service agreement is not suitable, the Owner and CxP can consider having the CxP provide a firm fixed fee for the Planning and Initial Assessment Phases and a budget estimate for the remaining phases based on mutually agreed assumptions. This approach still allows for project resource tailoring. After the First Assessment Phase, results and implementation scope determine remaining phase costs. This provides the CxP risk mitigation (lower cost to the Owner) while providing the Owner a reserve budget.
- The scope of work should be flexible to allow contract modifications yet clear and comprehensive enough to detect scope changes.



Screen the Building for EBCx Viability

Best method EBCx screening evaluates these traits. Sites without one or more of these traits may succeed, but not optimally. Best practise is to analyse the possibility for optimum success which will enable the Owner and the CxP to establish realistic expenses and expectations should the project move ahead.

1. A motivated Owner with the funds to make building improvements
2. A dedicated building crew. A building operations champion from the Owner's team must serve as the point person for operations employees and end users.
3. Original plans, specifications, as-builts, controls sequence of operations, preventative maintenance plans, and energy reports.
4. BAS-equipped buildings:
 - a. trending and data archiving that trend all control points at 5-minute intervals for at least 5 days.
 - b. trending and data archiving that trend all control points at 5-minute intervals for at least 5 days.
 - c. active BAS vendor/manufacture service contract
5. Owner's budget for the EBCx project from Planning to Hand-Off.
6. The Owner and CxP will set financial cost vs. savings (payback) criteria for ECM actions.
7. The Owner and CxP have a realistic project plan that covers part of the first year of occupancy and testing/validating in all seasons.
8. For energy efficiency initiatives, an EUI above the market sector and climate average indicates the building has energy-related cost savings potential.
9. Building assemblies, systems, and equipment do not need major maintenance to avoid optimisation modifications. The project begins with or after extensive repairs.
10. The facility is static from large equipment modifications that might disrupt EBCx.



Define Owner's EBCx Goals and Objectives

- The Owner and stakeholders collaborate with the CxP team to define and record specific goals and objectives. It is critical that Owners understand what different forms of EBCx can and cannot perform.
- For example, if the facilities manager's only objective is to fulfil ENERGY STAR or LEED minimal standards, the EBCx effort would most likely be significantly different than if the business direction is to cut energy consumption as much as possible or to lessen the environmental imprint. If the Owner's firm has a sustainability effort, the EBCx programme should be included as a key component of that project.

Conduct a CFR Workshop or Questionnaire



The CFR workshop follows ASHRAE Guideline 0-2019: The Commissioning Process's Owner's Project Requirements (OPR) workshop for new projects. The Commissioning Provider (CxP) identifies the project team's main issues and leads the CFR workshop. The workshop promotes requirement identification, team discussion, and CFR priority consensus. Ordered questions achieve this.

1. User–Occupant Requirements
2. Owner–Directed Needs
3. Facilities Needs
4. Sustainability Needs
5. Maintenance Needs
6. Operator/Maintenance Team Capabilities Regulatory Requirements
7. OCx requirements
8. Funding and Investment Criteria
9. Building–wide and zonal/space data



Initiate EBCx Plan

Create an EBCx Plan including objectives, roles, duties, the EBCx process, communication protocols, important activities and tasks, and the project timetable. To guarantee agreement and success, the Plan should address Stakeholder participation and communication with important Owner constituencies. The Plan changes during EBCx.

A budget and programme financial indicators are essential. Planning discusses financial resources, the Owner's budget, and financing sequence. To determine financing, assess work expenses while employing outside resources.

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Define Roles & Responsibilities

The CxP plans, leads, and organises the commissioning team and EBCx process. The CxP helps develop the project plan and guides the team through troubleshooting and identifying issues, sequencing commissioning activities, and bringing in the right internal and third-party implementation team members with the right communications, technical skills, and knowledge at the right time to meet project performance goals.

To meet stakeholders' needs and building system requirements, the Owner's team—property or facility manager, tenant representatives, user groups, and operations staff—is involved from the start. This phase establishes EBCx participant roles and duties. Locate internal or external resources.





At-a-Glance summary of CxP and Owner EBCx activities by phase:

Cx Provider Responsibilities	Owner Activities
Planning Phase	
Meet with Owner to define project Update the Current Facility Requirements (CFR)	Hire CxP to help update the CFR Contribute, review, & approve the CFR Develop initial budget
DELIVER TO OWNER: Updated CFR	
Initial Assessment Phase	
Review building documentation Develop initial EBCx Plan Analyze energy data Perform initial walk-through Conduct staff interviews Document findings Meet with Owner to focus work for investigation	Approve EBCx budget Review & approve EBCx Plan & scope
DELIVER TO OWNER: Initial EBCx Plan & Scope	
Investigation Phase	
Run & analyze trends & monitoring Conduct deeper field inspections Conduct functional testing Document findings Estimate savings & implementation costs Review findings with Owner, select findings to implement Update EBCx Plan for implementation & handoff	Attend commissioning meetings Coordinate O&M staff involvement Manage occupant impact/issues
DELIVER TO OWNER: List of findings, Final EBCx Plan, initial cost & savings estimate	

Implementation Phase	
Complete additional investigation & engineering Engage subcontractors, as needed Implement selected findings Verify performance of ECMs & FIMs Adjust energy savings estimates & costs	Review and/or approve energy savings estimates
DELIVER TO OWNER: Adjusted Cost & Savings Estimates	
Hand-Off Phase	
Facilitate training of building staff Update sequences of operation Update Systems Manual Update preventive maintenance procedures Implement performance tracking Develop ongoing commissioning (OCx) recommendations	Support facility staff training Support OCx Plan execution
DELIVER TO OWNER: Updated Facility Guide, Final Cx Report, OCx recommendations	





Conduct a Kickoff Meeting

To establish EBCx project communication, procedures, and party roles, convene an EBCx kickoff meeting with key decision makers and stakeholders. The CxP, Owner, facility/project manager, operations manager, and building occupant representative attend the kickoff meeting. Controls service contractors should attend this meeting for BAS projects. Discuss how much effort each side needs to attain the goals.

Commissioning Coordination:

The commissioning team meets periodically to discuss commissioning status, system performance, and concerns throughout EBCx. Stakeholder participation in status meetings is essential to gather information, develop consensus, and resolve minor repairs and adjustments.



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Planning Phase Deliverables



- Deliverables of the planning phase include:
- EBCx RFP /RFQ
- EBCx contract
- Documented project goals and objectives
- Cx Team identified and engaged
- CFR
- Existing Owner documentation including existing drawings, submittals, as-built information, completed maintenance and repairs, preventative maintenance records, and previous reports and documentation
- EBCx scope
- EBCx work schedule



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