

BEYOND

SMART CITIES



COMMISSIONING SPECIALIST

BEYOND SMART CITIES

THE ELEMENTS OF CXA PROCESS & BENEFITS

KRISHNAJI PAWAR, LEED AP BD+C, GSAS CCP, ISO 14001:2015, GCP

COMMISSIONING SPECIALIST ONLINE CURRICULUM COURSE

ELEMENTS OF CXA PROCESS AND BENEFITS



Benefits of Commissioning

Value of Commissioning HVAC Systems

Process Problems that CXA Helps and Solve

Technical Problems that CXA Discovers & Repairs

What are the Elements of Commissioning Process

BENEFITS OF

COMMISSIONING

Construction Efficiency

Energy Efficiency

Overcoming Technical Risks of Innovation

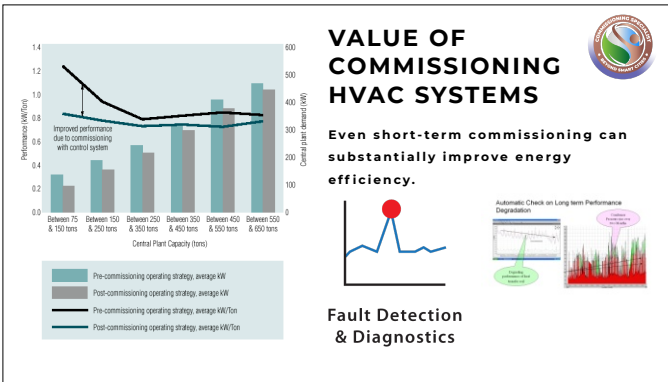
Improved Indoor Environmental Quality (IEQ)

Occupant Productivity

Reduced Liability Claims

Design and IAQ





PROCESS PROBLEMS THAT COMMISSIONING HELPS SOLVE

- ✓ Design Goals/Criteria Forgotten or Distorted
- ✓ Designs Aren't shown Completely as Intended
- ✓ Construction Deviates from Design
- ✓ Systems Not Fine-Tuned at Start-Up
- ✓ Operators Not Properly Trained
- ✓ Systems Not Maintained

COMMISSIONING PROCESS

COMMISSIONING PROCESS TERMS

- ✓ **Factory Testing:** Refers to the testing performed by the manufacturer, whether at the manufacturer's location or within the facility being Commissioned. Factory Testing may or may not be subject to being witnessed by the owner or the owner's representative. Deferred Performance Tests
- ✓ **(DPTs): Deferred Performance Tests** refer to functional tests performed outside of the normal Commissioning Process timeline, due to equipment, site, weather, load, or other issues that do not allow the tests to be performed earlier. Deferred Performance Tests may include Seasonal Performance Tests, tests performed after partial occupancy and/or substantial completion, etc.
- ✓ **Coordination Drawings:** The designs that include all of the equipment and systems in real-space to ensure that everything will fit and access will be available for later maintenance operations, space for which is often denoted by the equipment or system manufacturers.

COMMISSIONING PROCESS

COMMISSIONING PROCESS TERMS



Construction Documents: Construction Documents is a term that encompasses a variety of documents, dependent on the type and scope of the project, and the specifications of the owner and regulations and laws of the government for the location of the facility. Often the term Construction Documents denotes, as a minimum, the project specifications, drawings and designs, and the construction contract itself.

Contract Documents: This is a term that encompasses a variety of documents, dependent on the type and scope of the project, and the specifications of the owner and regulations and laws of the government for the location of the facility.

Data Logging: Using non-systemic data recorders to monitor and record control system information to get independent data about flows, pressures, etc. of individual pieces of equipment or larger systems.



TECHNICAL PROBLEMS THAT CX DISCOVERS AND REPAIRS

- Calibration or adjustment problems.
- Controls missing or not connected.
- Incorrect sequences of operation.
- Improper locations of sensors or controllers.
- Improper design of the system being controlled.
- Uncoordinated interlocks between related but independent systems.
- Incorrect programming. Equipment doesn't perform to specification.



WHAT ARE THE ELEMENTS OF CX PROCESS?

- Decision to do Commissioning
- Designation of Commissioning Provider
- Integrating Commissioning into the Project

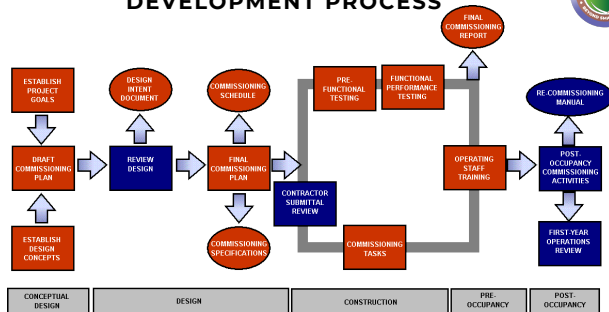




COMMISSIONING PROVIDER [OR "COMMISSIONING AUTHORITY"]

- ✓ Focused on Commissioning Activities not Design details
- ✓ Separate function from design
- ✓ Knowledgeable in functional areas
- ✓ Team Player
- ✓ Ineffective unless involved EARLY

COMMISSIONING AND THE BUILDING DEVELOPMENT PROCESS



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Thank You



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