

Commissioning





Why Commissioning (Cx)

The purpose of the Commissioning is to provide a formal collaborative process and an added level of quality assurance that the commissioned systems have been installed and operate in the prescribed manner set forth in the Basis of Design. Commissioning is not intended to reduce the responsibility of the Design Professionals or installing contractors but intended to enhance the quality of the project requirements and aid in the orderly transfer to the Owner systems that are verified operational by a third party certified commissioning authority. The Commissioning Authority will provide an unbiased, objective view of the system's installation, operation and performance.

Common Definitions

Basis of Design Document: Written document that records the project program, building systems types, calculations methods used, Owner and A/E design decisions, product quality, applicable codes, standards and, Owner standards/guidelines used to satisfy the Owner's Project Requirements.

Commissioning Authority: Third Party entity that plans, schedules, and coordinates the Commissioning Team to implement the Commissioning Process.

Commissioning Plan: Written document that formalizes the organizational protocols and documentation required executing the Commissioning Process to satisfy the Bod and OPR.

Commissioning Process: A third party quality-focused process for enhancing the delivery of a project.

Commissioning Team: Third party entity that are responsible for implementing the Commissioning Process.

Functional Performance Testing: The process by which specific documents, components, equipment, assemblies, systems, and interfaces among systems are confirmed to comply with the criteria described in the Owner's Project Requirements.

Owners Project Requirements: A written document that details the functional requirements of the project including design goals, measurable performance criteria, budgets, schedules and supporting information.

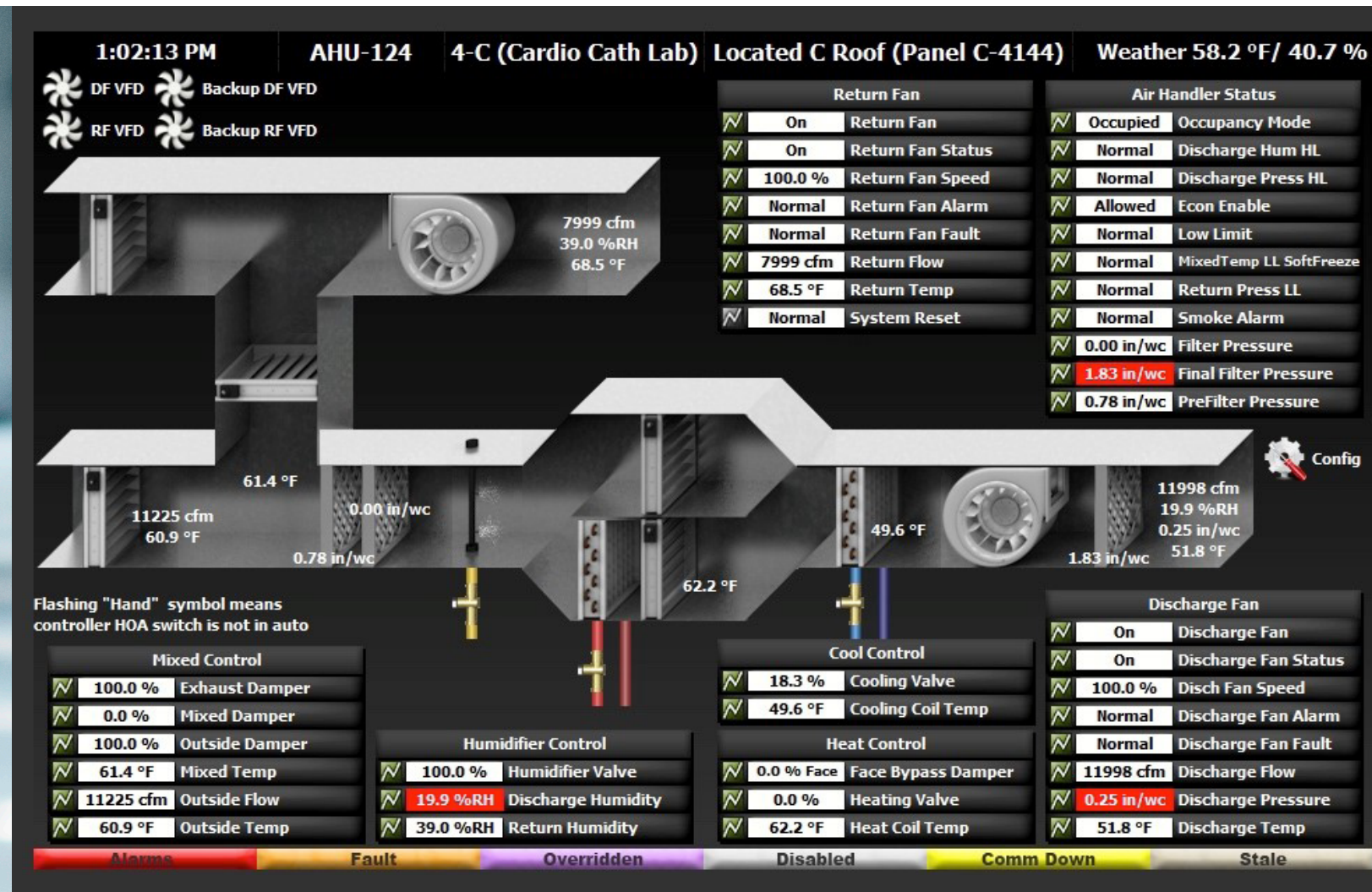


Commissioning Goals and Objectives

The Cx goals and objectives are to identify and reconcile issues from design to project close out that conflict with the BOD, OPR and good engineering practices such that project delays, additional costs and post occupancy operational issues are minimized. This is accomplished through a multi-tiered quality assurance approach, which includes:

- Construction Document Constructability Reviews
- Equipment submittal reviews
- Construction Field Installation Observations Visits
- Construction Phase testing of systems being commissioned
- Training
- Documentation of the commissioning process and plan
- Warranty Walk Through

By meeting these goals and objectives the commissioning plan will provide a smooth transition from design to construction to building occupancy.



Roles and Responsibilities:

Owner: Final authority and approval for all project issues consistent with the contractual obligations of the project.

Commissioning Authority: Facilitates and executes Commissioning Plan, Process and directs all testing as required. The Commissioning Authority shall act as chair at all commissioning events and ensure execution of all agenda items

Design Professionals of Record: Development of Contract Documents, including the integration of the Commissioning Process.

Prime Contractor: Facilitates the Cx process and integrates Cx into the construction activities and schedule.

Contractors and Sub-Contractors:

Provide support to comply with the Cx Plan and execute the commissioning process.

Prime Contractor Quality Control Lead:

Supports CxC with commissioning process and collaborate with CxC to develop Cx execution plan and training plan developed by contractors.

Equipment Suppliers and Field Services:

Supports the Prime and Subcontractors to satisfy the commissioning plan.

Commissioning Process

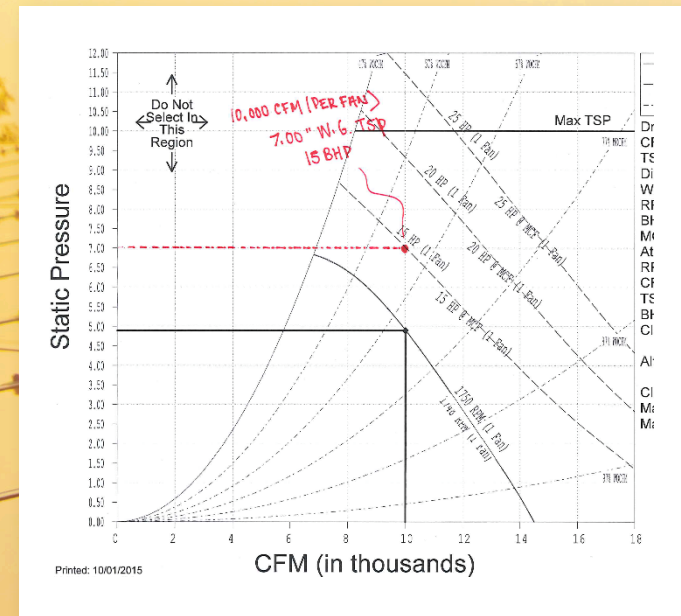
The commissioning process begins with establishing a systematic approach along with a collaborative environment between the Owner, Owner's Representative, Design, and Construction teams to achieve the overall project Operational and Performance Requirements (OPR). As the third party quality assurance lead, the CxA will maintain an unbiased approach to problem solving and conflict resolution through strong leadership skills based on years of commissioning, engineering and hands-on management experience. Efficient and expert execution of the commissioning scope begins by developing a teaming etiquette with a common mission statement, lines of communications, and organizational chart defining roles and responsibilities for all parties. The various stages of commissioning include:

- Design Constructability Review Phase
- Construction Phase
- Acceptance Phase (Field Functional Testing)
- System Manuals
- Operation and Maintenance Training
- Construction Phase Acceptance
- Post-Acceptance
- Final Commissioning Report and Acceptance

Milhouse Engineering & Construction, Inc. is a member in good standing of the AABC Commissioning Group with certified commissioning agents that can deliver all type of commissioning project requirements.

For additional information please contact

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About Milhouse

Milhouse is a full-service engineering firm offering expertise in civil, mechanical, electrical, structural and environmental engineering, as well as construction and program management. We deliver creative solutions to complex problems around the globe. Where others just see another project, we are driven by a desire for greatness—for our clients and our communities.

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