



Commissioning

Client Need

Today's buildings and plants are complex and dynamic structures encompassing a variety of building automation and control systems for environment, operations, data, communications, safety, and security. Ensuring that these systems operate properly and at peak efficiency requires a knowledgeable, experienced commissioning team.

MBP's Commissioning Process

Commissioning is a quality-oriented, systematic process for achieving, verifying, and documenting that the performance of facility systems and assemblies meets defined owner objectives and criteria. This

process begins at project inception during the pre-design phase and continues for the life of the facility through the occupancy and operations phase.

During the pre-design phase, the owner's project requirements (OPR) are determined and documented by the commissioning team, which includes the owner, commissioning authority, designers - architects/engineers (A/Es), operation and maintenance personnel, occupants, and users. Throughout each phase of the project, drawings, specifications, product/equipment submittals, and documentation are verified against the OPR to ensure that the finished facility operates in accordance with the owner's documented project requirements.

New Construction and Retro-commissioning Services:

- Systems analysis and design
- Commissioning plan
- Verification, testing, and documentation
- Indoor air quality (IAQ)
- Asset management program
- Preventative maintenance program
- Facility operator training

Benefits of Commissioning for the Owner

- All building systems will function as intended
- Higher productivity by building occupants
- Lower energy costs through the optimization of equipment/system selection
- Plan review for coordination of systems prior to construction results in reduction of change orders
- Reduced maintenance costs – plan review of systems for maintainability
- Better documentation – improved

training of maintenance staff results in better understanding of the operation/maintenance of systems

- Maximized useful life of systems

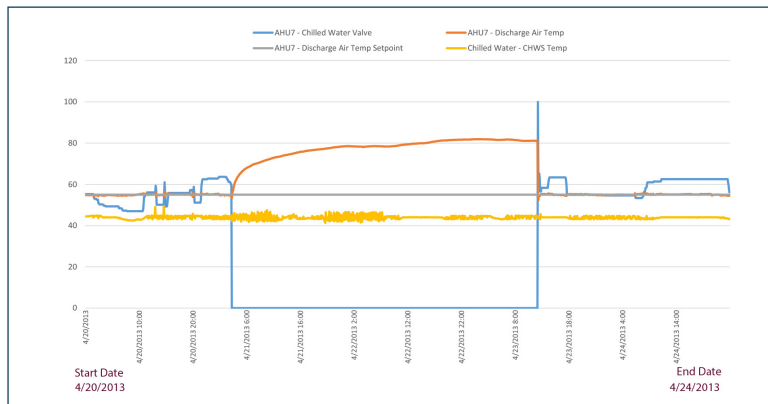
Benefits for Designers

- Reduction in design errors
- Fewer requests for information (RFIs) – results in higher returns
- Pre-functional and functional testing of systems leads to fewer issues
- Qualifications and reputation of the designer enhanced through satisfied clients

Benefits for Contractors

- Improved scheduling/coordination among trades
- Improved quality control
- Reduced punchlist and fewer warranty call backs
- Enhanced reputation for project delivery

Services



Retro-Commissioning

MBP's Retro-Commissioning Process

Retro-commissioning is a collaborative process which examines how building systems are operated and maintained, then identifies ways to restore them to optimal performance. Retro-commissioning is an adaptive process that meets the specific needs of each owner. Often, problems that have developed through the duration of the building's life are addressed as well as problems that occurred during building design or construction. The overall goal is to optimize the facility's energy consumption profile which directly correlates into financial savings.

Benefits of Retro-Commissioning for the Owner

- Identifies energy conservation measures (ECMs)
- Typically saves owners 5-20% of total building energy costs
- Average payback from energy savings of 2 year or less
- Lower maintenance costs
- Extended equipment and system life
- Improved indoor air quality
- Increased occupant productivity and comfort
- Increased owner profitability
- Equips building staff with essential knowledge and documentation
- Direct and unique solutions for your particular building's needs
- Helps preserve our environment

Retro-commissioning Process Overview

Contract Phase

- Select a building
- Facility walkthrough
- Assemble the team
- Define retro-commissioning goals

Pre-Site Investigation Phase

- Kick-off meeting
- Review facility documentation
- Interviews
- Perform initial diagnostic monitoring and testing

Site Investigation Phase

- General
- Building envelope
- Systems
- HVAC equipment & systems assessment
- Control system
- Testing, adjusting and balancing verification
- Indoor air quality
- Electrical equipment & systems
- Plumbing equipment & systems

Problem Analysis & Synthesis Phase

- Perform diagnostic monitoring and testing
- Develop a master list of findings
- Prioritize and select retro-commissioning improvements
- Develop a corrective action plan

Corrective Action Phase

- Implement recommendations (ECMs)
- Commissioning of corrective actions
- Verify results
- Final retro-commissioning report

Training/Ongoing Phases

- Develop re-commissioning plan and recommend persistence strategies
- Conduct staff training/closeout meeting
- Track energy performance