What is commissioning (Cx)?
It’s the systematic process of making sure systems perform according to the design documentation and intent, in line with the owner’s project requirements.
• Design document and specification reviews
• Construction site visits to assess equipment installation
• Optimized pre-functional process
• Functional testing of building systems
• Warranty review of systems
• Persistence phase to ensure that systems are operating efficiently

Why is it important?
To be assured that the building design you approved is the building you take ownership over.
• Meet performance expectations of the building’s owner
• Hold construction team accountable for the design documents

What are the benefits?
Real-world sustainable solutions yielding smaller energy footprints.
• Eight to 20 percent energy and maintenance cost reduction compared to non-commissioned buildings
• Operations and maintenance (O&M) staff training
• Building control systems that work as expected
• Reduced number of change orders during construction
• Typical payback period of two years or fewer

What makes a good commissioning candidate?
• Energy savings/sustainability goals
• Excessive or increasing utility costs
• Comfort/air quality goals
• Complex building systems
• Life/safety mandates
• Energy intensive building type

We approach each project with an emphasis on the life cycle performance of a building and can deliver the full spectrum of planning, repairing, renewing, and sustaining new and existing systems. In addition to designing, installing, and commissioning new buildings, we investigate, analyze, trouble-shoot, and commission existing facilities to create comfortable and more energy efficient buildings.

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Design
• Owner’s project requirements
• Basis of design document development
• Commissionability
• Accessibility
• Coordination between disciplines and interrelated systems

Construction
• Concurrent submittal reviews.
• Equipment installed according to design documents
• TAB plan review and preparatory meeting
• Optimize pre-functional process
• Controls submittal review meeting

Acceptance
Questions
• Have control loops been tuned?
• Does the completed building fulfill the owner’s project requirements?
Methods
• Functional tests are detailed and repeatable
• Functional testing objectively challenges the combined components of design and installation
• Perform functional testing with O&M staff
• Training

Warranty
Questions
• Equipment still operating as intended?
• Have any major issues caused complications?

Methods
• Trend review
• Involvement of O&M staff to discuss maintenance and operational issues

Persistence
• Monitoring systems post-warranty for operational issues and to maintain
• Developing metrics (key performance indicators) to flag potential issues with performance

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Optimized performance

Cost and Schedule

- Our goal is to aid the design team in producing construction documents that are complete and don’t leave room for interpretation
- Complete and detailed design documents reduce the number of RFIs and ASIs, so projects can be completed on time and budget
- To bend the cost curve down, issues must be addressed in the early design phases. Once construction starts, the cost to address the issue increases

Communication

- Communication during the schematic design and design development phases is limited to design reviews and meetings to discuss review comments
- As construction documents are being produced, communication increases until construction starts, then it’s biweekly to monthly
- Communication happens daily to weekly as acceptance phase testing starts
- After acceptance phase testing is complete, communication decreases until warranty testing
- All communication from the commissioning is sent to the owner and the design/construction team