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

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?

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

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

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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 RFI's and ASI's, 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.