

# As Owner Representatives, Commissioning Authorities Enhance Integrated Project Delivery and Lifecycle Operations

By Alex Gonzales, PE, CxA, LEED AP

In today's world of ever more complex "intelligent buildings," owners increasingly rely on collaborative project delivery methods to achieve greater efficiency and meet schedule requirements while minimizing risk.

That's also why progressive owners are looking to their commissioning authority (CxA) as third-party owner representatives/subject matter experts. With specialized expertise and technical resources, the CxA has one key objective: ensure that an as-constructed facility operates per the owner's requirements and design intent.

Owners that embed CXAs in the earliest phase of a new project reduce the risk of delays, improve project team communication, establish a foundation for the long-term operational efficiency of their buildings and set the stage to meet the next generation of green certification.

## **Purposeful Focus**

Commissioning that begins in the pre-design/conceptualization phase and continues through design and construction and then into the facility's operational life is called enhanced commissioning. It's a perpetual practice that emphasizes continual oversight, awareness and education.

Through enhanced commissioning, a CxA sees a project through the owner's eyes and considers the owner's requirements from a system perspective, evaluating equipment interoperability and operation/maintenance. A CxA should be proficient in facility design with particular emphasis on the design, performance verification, maintenance and training required for intelligent building systems.

We have one higher education client that has been contracting NV5's commissioning agents to monitor, facilitate and review the development of their requirements in the pre-design phase. To further the early involvement, the client has our team review the 50% and 90% schematic and design development documents as well as the 50%, 75% and 95% construction documents.

The client's construction phase commissioning process includes development of a comprehensive equipment startup checklist that includes all checks and verifications to ensure protection of the equipment and personnel during startup procedures.

We provide site observations as needed to verify component and system installations and we perform field observations. We are asked to attend select planning and job-site meetings to not only champion and proactively participate in explaining/leading/facilitating the commissioning process, and to stay in the loop about construction progress and the integration of commissioning activities into every aspect of the construction schedule. All of these activities precede the functional testing activities performed by the CxA.

Our team leads the development of a comprehensive facility integration test procedure that verifies the different mechanical, electrical and plumbing, life safety and other system integrations. We created a facility operations manual that contains all operational information for the client's staff.

The result? This client is seeing more collaboration and communication, improved project efficiency and better trained, operationally ready staff at handover. Facilities are operating per design intent.

Notably, this client is also putting into practice those processes outlined in the new 2016 Leadership in Energy & Environmental Design (LEED) v4 for building owners seeking LEED certification.

### **LEED v4 and the CxA**

The latest LEED v4 green certification benchmark requires that a CxA is engaged before design development is complete and that the commissioning agent perform, at minimum, one design review on or before 50% design documents—a time when the CxA has the greatest opportunity to impact cost and functional capabilities.

To meet LEED v4 commissioning requirements, the CxA must prepare and maintain a current facility requirements document and an operations and maintenance plan as part of the prerequisite commissioning responsibilities. LEED v4 enhanced commissioning further substantiates the long-term value of the CxA by the creation of an ongoing commissioning plan. This plan incorporates monitoring-based commissioning practices that combine data-driven measurement and reporting. The plan also addresses operator procedures that support the perpetual commissioning process, the transfer of knowledge to operators and supplemental training before and after building occupancy.

Many of our clients have already engaged NV5 to provide supplemental warranty phase services much like the LEED v4 benchmarks. These include continuous efforts for supplemental training. We also re-verify selected functional performance tests alongside the facility operators—an effective way to pave the way for operator success.

### **Operational Edge**

The value of the commissioning lifecycle support results in visible improvement in communication during the project's design and construction and, more importantly, equips the facility and operations staff with the tools and knowledge to operate the building as intended during the warranty phase and beyond.

The owner is positioned to meet and exceed existing codes, such as the 2015 International Energy Conservation Code, as well as emerging energy codes and green building certifications.

As today's buildings become more technologically advanced, a commissioning authority should do more than evaluate HVAC systems or check off green certification points. The CxA should establish the framework for long-term, optimized operation. Consider enhanced commissioning on your next integrated project delivery endeavor to gain the full benefits of a collaborative process beyond handover.

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Alex Gonzales is a Professional Engineer, LEED Accredited Professional and Certified Commissioning Authority with over 26 years in architecture, engineering, and construction project/program management and commissioning experience in the public and private sector. His technical experience includes alternate project delivery and working with the LEED Rating System to establish and support sustainable project delivery elements including integrative design, commissioning of building systems and focused operational support.