



Galicia Commissioning Group, Inc.

Certified Commissioning Authority

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LEED Building Commissioning

LEED Commissioning further support the design, construction, and eventual operation of a project that meets the owner's project requirements for energy, water, indoor environmental quality, and durability. The following services define the scope of work according to the LEED-NC 2009 EA P1 Fundamental Commissioning, including but not limited to:

1. Review Design Development documentation
2. Fully develop a commissioning specification detailing the roles and responsibilities and activities required to commission the facility.
3. Review Owner's Project Requirements. and Basis of Design
4. Review client space energy-related systems submittals.
5. Develop a commissioning plan and submit it to the team at the outset of the project. Define all activities to be taken up by the CxA and identify a team member to be present for each activity. Include a checklist of all equipment to be tested during construction.
6. The CxA shall provide any specifications not already included by the mechanical engineer before the general merchant pricing (GMP) or construction bids are developed.
7. The mechanical contractor (MC) and controls contractor (CC), shall document the pre-functional checklists and perform startup and initial checkout. The CxA shall then document that the checklists and startup were completed according to the approved plans. This may entail the CxA witnessing the startup of selected equipment.
8. The CxA develops specific equipment and system functional performance test procedures. The functional testing performed by contractors and witnessed by the CxA shall include operating the system and components through each of the written sequences of operation, including heating and cooling modes as well as other identified operational variances. Functional testing shall be done using conventional manual methods, control system trend logs and read-outs, or stand-alone data-loggers, to provide a high level of confidence in the functioning of the system, as deemed appropriate by the CxA and the owner for the applicable systems on the project.
 - a. Ventilation: The CxA shall check the physical operation of air-handling units, energy-recovery units, unit ventilators, fan-coil units, rooftop units, exhaust fans,



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and any other related equipment to ensure that they operate properly and that all air dampers are properly positioned for all sequences. The CxA shall review the Balancing Report to check that fresh air is delivered in accordance with the design criteria and applicable codes.

- b. Mechanical Rooms: The CxA shall check that all equipment operates in accordance with the design criteria, including proper lead/lag operation of pumps, settings of operating limits, outdoor reset schedules, proper domestic hot water production, and performance of any other equipment.
 - c. Heating Coils and Terminal Units: The CxA shall check proper operation of all coils, radiation, control valves, and terminal units.
 - d. Cooling units: The CxA shall check for proper operation of all cooling equipment, including operating limits and safety settings.
9. Submit a commissioning report to the client at the end of the commissioning process. Outline all systems checks and consequent actions taken as a result of the test outcome. Detail any and all activities and recommendations.
10. Prepare and sign LEED Online Forms and associated documentation for credits associated with Fundamental Cx.

Enhanced Commissioning Services – LEED Enhanced Commissioning (refer to LEED-NC 2009) CxA shall be responsible for the following services in addition to the fundamental commissioning items, including but not limited to:

1. Prior to any fundamental commissioning activity, reviews at 50% and 90% CDs shall be conducted.

The CxA shall provide a focused review of the design documentation (design intent, basis of design, and sequences of operation) for energy-efficiency, proper functioning, and any recommendations for enhanced performance. The CxA shall review the specifications and drawings for the purpose of advising the owner and the design team on changes that may need to be made to promote successful commissioning.

2. The CxA reviews the Operation & Maintenance (O&M) documentation, project reports, and closeout documents for completeness.
3. The CxA reviews, pre-approves, and coordinates the training provided by the mechanical contractor and controls contractor and verifies that it was completed.



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4. Post-Occupancy Check: Include a post-occupancy checkup as part of the commissioning proposal to verify how the building is actually operating between 8-10 months after construction. The CxA shall address a list of “events” or complaints compiled by the owner. This post-occupancy checkup will include verifying that the training requirements have been met and that a plan to resolve outstanding commissioning-related issues has been pursued.
5. The CxA shall develop a systems manual that contains the information necessary to fully re-commission the energy-related systems within the tenant space.
6. Prepare and sign LEED Online Forms and associated documentation for credits associated with Enhanced Cx.