

Tennis Center of Georgia at Berry College
Request for Proposal #34-15
EXHIBIT A - Commissioning Scope of Services

1.0 Overview

The Owner is committed to commissioning the building systems to ensure that they are complete and functioning properly prior to Substantial Completion, and that facility staff has adequate system documentation and training. Specific requirements of the commissioning process and responsibilities of the Commissioning Authority (CxA) are described below.

Overall, the CxA shall develop and coordinate the execution of a Commissioning Plan, document Owner's requirements, perform design reviews, observe and document the installation, and develop and witness functional testing to ensure systems perform in accordance with the Owner's expectations.

The CxA will not be responsible for design, compliance with codes, construction scheduling, cost estimating, construction management, or construction supervision. The CxA shall assist the Architect/Engineer (A/E) and General Contractor (GC) with problem-solving of design and construction issues, but the ultimate responsibility for meeting the project requirements resides with the A/E and GC.

2.0 Commissioning Tasks

The CxA shall perform the following services during the design, construction, acceptance, and occupancy phases of the project.

2.1 Systems to commission include:

- Building automation systems, including linkages to remote monitoring and control sites.
- All equipment of the heating, ventilating and air conditioning systems, including ductwork.
- Domestic water systems, piping, valves, and associated equipment.
- Life safety systems.
- Electrical (transformer, switchgear, panels, sub-panels).
- Lighting control systems, equipment, and fixtures.

2.2 Design Phase services include:

- Meet with Owner and A/E to review and document Owner's requirements for the project.
- Prepare and distribute a Commissioning Plan.
- Perform review of final construction documents and provide written report of findings and recommendations.
- Provide commissioning specifications to the A/E for systems and equipment that are to be commissioned.
- Develop and maintain a master issues log.
- The A/E will provide sequences of operations, points lists, and control schematics for all equipment and systems.

2.3 Construction Phase services include:

- Update and distribute the Commissioning Plan as appropriate.
- Maintain the master issues log and record of test results of any items found to be a problem. Provide the log and test results to the Owner, A/E and GC with recommended actions. Confirm resolution of problems.
- Prepare pre-functional and final functional test procedures for the equipment and systems; submit test procedures to Owner, A/E, and GC for comments.
- Conduct a coordination meeting with the GC and subcontractors to discuss commissioning scope, plan, and schedule.
- Coordinate the commissioning work with the GC, and ensure that commissioning activities are being scheduled into the master schedule.

Tennis Center of Georgia at Berry College
Request for Proposal #34-15
EXHIBIT A - Commissioning Scope of Services

- Assist A/E in review of GC submittals applicable to systems being commissioned.
- Perform periodic site inspection during rough-in of systems and equipment in order to remain informed of GC progress.
- Assist the A/E as required in review of Requests-For-Information from the GC, related to issues affecting commissioning.
- Observe first pre-functional test of each type of system to be commissioned.
- Witness startup of major equipment.
- Witness a sample of pipe test and flushing procedure, sufficient to be confident that proper procedures were followed.
- Witness a sample of any ductwork testing and cleaning procedures, sufficient to be confident that proper procedures were followed.
- Review and verify Test & Balance (TAB) plan.
- Witness a sample of checkout, TAB, end-to-end testing, and calibration of controls.

2.4 Acceptance Phase services include:

- Update and maintain a master issues log and provide the log and test results to the Owner, PM, A/E and GC with recommended actions.
- Obtain pre-functional reports from GC with sign-offs that the systems have been checked out.
- Obtain TAB report from GC, review for accuracy, and document findings as follows:
 - a) Check [100%] sample of the TAB report readings of diffusers and grilles;
 - b) Check [100%] sample of FCU's, VAV's, and/or other terminal units;
 - c) Check [100%] of the TAB report readings for main AHU's, condensing units, main pumps, and main exhaust fans.
- Verify building controls:
 - a) Sample [100%] point-to-point verification of terminal units, including analog calibration, mapping to workstation graphics, proper control, and alarm management functions;
 - b) Check [100%] point-to-point verification of main AHU's, condensing units, main pumps, and main exhaust fans; including analog calibration, mapping workstation graphics, and alarm management functions.
- Witnessing functional testing of fire alarm/protection sequence of operation per NFPA and Owner requirements.
- Provide troubleshooting to assist in resolving control problems.
- Coordinate retesting as necessary. One retest will be provided as part of normal checkout. More than one retest will be considered work outside the normal scope of work.
- Notify the Owner, PM, A/E, and GC of the unacceptable findings if 10% of identical pieces of equipment fail to perform to the requirements of the construction documents. Request an explanation of the problem and proposed solution from the GC. Review the proposed solutions and make a recommendation to the Owner.
- Attend coordination meetings with the GC, at least monthly, to monitor progress, coordination, and issues resolution.
- Assist A/E with review project close-out manuals for conformance to the project specifications.
- Witness training of Owner's operating personnel by the GC.
- Provide three hard copies and three CD/DVD electronic copies of the Commissioning Final Report. The report shall include an executive summary, list of participants and roles, brief building description, and the following sections:
 - a) Project Requirements
 - b) Pre-functional checklists complete
 - c) Functional checklists complete

Tennis Center of Georgia at Berry College
Request for Proposal #34-15
EXHIBIT A - Commissioning Scope of Services

- d) TAB reports
- e) System schematics
- f) Control strategies and set points
- g) Deficiency Log

2.5 Occupancy and Warranty Phase services include:

- Perform deferred (seasonal) testing checkout of equipment – in August for cooling systems and/or in January for heating systems as applicable.
- Conduct a warranty inspection, approximately ten months after Substantial Completion. Interview the Owner’s facilities staff and make recommendations for improvements in operations and maintenance. Document any warranty deficiencies to be remedied by the GC and re-check following the repairs.

3.0 Test Equipment

The GC will provide for use of tools required to start, checkout, and functionally test equipment and systems. The CxA shall provide its own specialized test equipment, as part of its fees for services, required to perform commissioning services outlined above. Test equipment provided shall meet the minimum accuracy, calibration, and performance standards required by the specified performance test.