The University of North Carolina at Charlotte
Capital Projects
Facilities Management
9151 Cameron Blvd.
Charlotte, N.C. 28223-0001
Tel: 704/687-0615

PROJECT: **UNC Charlotte**
Smith Comprehensive Renovation - *Commissioning Services*
SCO ID# 23-26438-02A
Code & Item: 42226-316 and 42426-301

Thank you for your interest in the subject project. This information is provided to all firms which express an interest in the commissioning of the project. Limit the size of your submittal document to no greater than 12½ inches in height and 9½ inches in width. Maximum 40 pages – including standard forms, cover letters, and University-issued Submittal Cover Sheets (the cover, tabs, separators, clear covers, blank pages, or cardstock backs do not count toward the sheet count). Actual page counts will be derived from the electronic pdf submittal. Do not include covers, blank pages, tabs, or separators in your electronic submittal. Do not transmit any submittal information via email.

Submittals must include the Cover Sheet, Sections I and II of the Standard Form 330, the Designer's Supplemental Information Form, along with any other information considered appropriate. Please deliver one copy of the submittal, along with one electronic copy in pdf format on a USB drive attached to a printed submittal, to the address noted above. The hard copy should be bound together as a single document, and the digital submission should be assembled into a single pdf file. Any questions about the project should be directed via email to Project Manager Cheryl Walker at cwalk118@charlotte.edu. Please do not contact other UNC Charlotte staff.

The submission label should include the name of the project, attention of Cheryl Walker, Project Manager.
Delivery by Courier**:** deliver to the address written above.
Hand delivery: deliver to the address written above. **Place in the brown bid/proposal drop box located in the first-floor lobby of the FMPPS building # 55.**

Building map can be found at http://facilities.charlotte.edu/maps

Submittals are due by 2:00pm, Tuesday, July 14, 2026.
Interviews held the week of August 3 – 7, 2026

The University Evaluation Committee will review all submittals. The preliminary evaluation process will be complete within 21 days following the submittal due date, and firms selected for interviews will be notified by this office. From that group of firms, the committee will select and rank three finalist firms.

Qualifications: The University is seeking an engineering firm capable of reviewing design documents, preparing commissioning specifications and inspecting constructed facilities to ensure proper Mechanical, Electrical, and Plumbing commissioning of the facility described in the attachment. The selected firm will coordinate commissioning efforts with the project architect, Stantec Architecture Inc., and the MEP engineering consultants.

Please emphasize the achievements and qualifications of people who will be working on this project. If presenting information on previous projects, please provide a matrix indicating which team members worked on which projects. If projects were performed while with a different firm, please indicate which projects and with what firms.

Sincerely,
Cheryl Walker, FAIA, LEED AP
UNC Charlotte Project Manager
cwalk118@charlotte.edu

The University of North Carolina at Charlotte
Smith Comprehensive Renovation - Building Commissioning Services

Project Description:

The project is the comprehensive renovation of **a portion of Smith Hall, as indicated in the attached graphic – ATTACHMENT B.** The Smith building, constructed in 1966, is 91,580 SF. **The portion of the building to be renovated is approximately 47,000 SF**, with the new sprinkler system and ceiling repairs throughout the entire building. Smith is the home of the Engineering Technology and Construction Management program and the William States Lee College of Engineering's common first-year curriculum for all engineering students. The existing classrooms, computer labs, research labs, and faculty offices are outdated and no longer meet the requirements of today's academic programs. The program will include project-based engineering instruction labs, active learning classrooms, research labs, collaboration space, and faculty and administration offices to support UNC Charlotte engineering programs. The project will seek LEED certification (target silver level) under the LEED for Commercial Interiors framework.

The comprehensive renovation will address building system upgrades, including new PME systems in the North wing; a new sprinkler system (including fire pump and emergency generator) throughout the entire building; a new fire alarm; new electrical switchboard; new elevator at the center of the building; new restrooms at center of building; renovated building entrances at Levels 1 and 2; exterior envelope repairs; replacement of the existing roof; and correction of drainage issues. Hazardous material abatement is part of the project. ADA and building code compliance deficiencies will be addressed.

Project Location
The Smith Building is located at 319 Library Lane, Charlotte, NC 28223.
http://facilities.charlotte.edu/maps

The design and construction will be consistent with the University's design guidelines (https://facilities.charlotte.edu/business-opportunities/design-and-construction-manual).

The architect for this building renovation is Stantec Architecture Inc., Charlotte, NC. Advanced Planning and Schematic Design Phases have been completed. The selected commissioning firm members will be active advisors to the Project Team and provide both "Enhanced Commissioning" in accordance with University requirements and Senate Bill 668 and provide M&V (Measurement and Verification) of the first year's energy consumption.

SCOPE OF SERVICES

The Commissioning Authority (CxA) will serve as the University's agent to commission all identified components in the Project. The CxA is not responsible for design concepts, design criteria, compliance with codes, design or general construction scheduling, cost estimating, or construction management. The CxA may assist with problem solving or resolving non-conformance or deficiencies, but ultimately that responsibility resides with the general contractor and the architectural design team. The primary role of the CxA shall be to develop and coordinate the execution of a Commissioning Plan; observe and document the installation, checkout, start-up, and equipment and system testing to establish that equipment and systems are functioning in accordance with the requirements of the Contract Documents; and to assist in developing correct and complete documentation of the construction effort. The CxA shall support the architect with their preparation of the required building certification commissioning documentation, if applicable.

The Commissioning Team shall conduct a review of the Schematic Design and Design Development documents prior to the Construction Documents Phase and shall conduct a separate review of the Construction Documents near the completion of the Construction Documents Phase. The selected CxA shall utilize cloud-based commissioning software such as Cx Alloy and Facility Grid.

SYSTEMS TO COMMISSION

Systems that shall be commissioned include mechanical, electrical and plumbing equipment; and systems to include building automation systems; chilled water systems and associated equipment; boilers/ heat exchangers and associated equipment; air handling units, exhaust and other specialty fans, and terminal units; chemical water treatment systems; utility metering systems; smoke control systems (interfaces, egress pressurization); emergency power system, interior and exterior lighting control systems, electrical system from the building entrance through the main switchboard, switchgear, and to the distribution panels; ductwork and pipe; insulation; irrigation and water conservation fixtures; heat recovery systems; and Special Use Areas.

COMMISSIONING TASKS

The following tasks will be accomplished by the CxA to provide Commissioning during the design, construction, and acceptance phases of the project. Reference Attachment A for listing of minimum formal written documents required.

A. Design Phase

The CxA shall advise and lead the owner and the Design Team in documenting the written Owner Project Requirements (OPR) and University design intent, and the Design Team's Basis of Design (BOD) and rationale for accomplishing these requirements. The CxA shall also provide Design Team members with Commissioning items to be considered during design, perform a focused design review of the Schematic Design and Design Development Documents and Construction Documents (95% design stage), prepare Commissioning specifications for the construction bid documents for all systems and equipment that are to be commissioned and prepare draft of functional tests for equipment and systems to include in specifications. CxA shall review design energy and economics models from design tools like (Trace 3D, Carrier HAP, and IESVE) and benchmark with industry standard key performance indicators. Before acceptance phase, Model energy use intensity shall be compared with the actual values measured to ensure conformance with the design intent. The energy models of various design alternates shall be reviewed and one of the alternates shall be recommended to the owner with reasons.

B. Construction Phase

During the Construction Phase, the CxA will monitor construction progress to ensure that established commissioning objectives will be achieved. The CxA shall provide the following tasks during the construction phase:

- Conduct a Pre-construction Commissioning Meeting to review Commissioning scope, plan, and schedule with the Designer's architect and engineering team, Construction Project Manager, Site Superintendents, and Project Managers and Superintendents of applicable subcontractors. Applicable subcontractors must include mechanical, electrical, and plumbing.
- Coordinate the Commissioning work and, with the General Contractor (GC), ensure that Commissioning activities are being scheduled into the Contractor's Project Schedule.
- Review Bulletin Drawings and Shop Drawings and inform University in situations where Commissioning Objectives are at risk.
- Attend Designer's Monthly Project Progress Meetings and address key issues which impact successful commissioning.
- Continue to update Commissioning Schedule and coordination throughout construction with GC and subcontractors.
- Continually update and modify Commissioning Plan based on actual construction and installed equipment, and distribute to University, Design Team, and GC.
- Prepare final pre-functional and final functional test procedures for the equipment and systems.
- Review and approve TAB Execution Plan.

- Maintain a Construction Variance and Deficiency Log of any items observed to be a problem, poorly installed, or discrepancies.
- Verify accessibility and maintainability of all operable equipment with emphasis on equipment mounted in the ceiling.
- Witness a sample of pipe test and flushing procedure, sufficient to be confident that proper procedures are followed.
- Witness a sample of any ductwork testing and cleaning procedures, sufficient to be confident that proper procedures are followed.
- Witness a sample of checkout, TAB, end-to-end testing, and calibration of controls.
- Observe first Pre-functional Test of each type of system, including mechanical, controls, electrical, and specialty systems.
- Verify that the control sequence of operations developed by the control's contractor is approved by the designer.

C. Acceptance Phase

Commissioning during the Acceptance Phase is required to demonstrate that performance of the installed systems and equipment meets the requirements of the Contract Documents and Commissioning Plan. The CxA shall complete the following tasks during the Acceptance Phase:

- Obtain copies of Pre-functional Reports from Contractor with signoffs verifying that the systems have been checked out in compliance with the Commissioning Plan and manufacturers requirements. Check the accuracy of the TAB effort. Direct the TAB contractor to take sample readings and compare those to TAB report.
  - check 10% of the TAB report readings of diffusers, grilles, hoods, and terminal devices.
  - check 100% of the TAB report readings for main AHU's, main pumps, and main exhaust fans.
  - document findings.
- Functional Testing shall be performed on all control loops to include terminal boxes, chilled and hot water control valves, and vfds.
- Witness Functional Testing of each major piece of equipment demonstrates that each item of equipment and system is operating according to the Design Intent and contract documents. Functional Testing shall include operating the system and components through each of the written sequences of operation. Tests on respective HVAC equipment shall be executed during both heating and cooling seasons.
- Assist in troubleshooting to resolve control problems as they are discovered.
- Check the system graphics to ensure all specified graphics and associated trends are provided. Check a 10% sample of mapped points to assure reported data is consistent with actual data of monitored point.
- Commission all utility meters to include power, water, gas, and BTU.
- Maintain a Functional/Performance Test Deficiency Log of any items found to be a problem, poorly installed, or discrepancies. Provide the log and test results to the Owner, Contractor, and ARCHITECT with recommended actions.
- Notify the Owner, GC, and architect of the unacceptable findings if 10% of identical pieces of equipment fail to perform to the requirements of the contract documents.
- Review O & M documentation for completeness. This review shall be parallel with the Design Team's review of the O & M documentation for conformance to the project specification.
- Document the designer's one-half-day systems training to staff on "how the building is supposed to operate."
- Review, pre-approve, and document training of the university operating personnel by the contractor.
- Attend State Final Inspection.
- Perform seasonal testing checkout of equipment – in September for cooling systems and in January for heating systems.

- Provide three (3) hard copies and an electronic copy of the Commissioning management report (Commissioning Final Report). The report shall include an executive summary, list of participants and roles, brief building description, and the following sections:
  - OPR
  - Design Intent
  - Basis of design
  - Pre-functional checklists complete
  - Functional checklists complete
  - TAB reports
  - System schematics
  - Control strategies and set points
  - Deficiency Log
  - Guidelines for energy accounting
  - Recommissioning manual

D. Measurement and Verification

Commissioning Scope

- In each of the first four (4) quarters of the first year of occupancy, gather all measurement data from BAS. Summarize data in spreadsheet form and compare it to final energy model submitted by designer.
- Identify any areas for investigation and forward spreadsheet and list of variances to Owner and Designer.
- Provide a summary report for each quarter and a final annual summary. Final report to be submitted to Designer, Owner, and SCO.

Test Equipment

The Contractor shall provide all tools or the use of tools as specified by the CxA in the Construction Documents that are required to start, checkout, and functionally test equipment and systems, except for identified testing with supplemental portable dataloggers, which shall be supplied and installed by the CxA.

Datalogging equipment, monitoring devices, specialized equipment, and software not required to be provided by the installation contractor in the Contract Documents, and provided by the CxA to monitor, confirm, or verify the contractor's testing procedures, shall remain the property of the CxA. Equipment provided shall meet the minimum accuracy, calibration, and performance standards required by the specified Performance Test.

EXPECTATIONS OF THE COMMISSIONING TEAM

Members of the Commissioning Team must be capable of listening, comprehending, and responding to University leaders who will give both general and specific guidance for desired project parameters. The team must have a principal-in-charge, which is a Professional Engineer in the State of North Carolina, with other Engineers as appropriate that are also registered Engineers. Project managers, lead field Engineers, and field support staff may be non-Engineers who have technical training, past field experience, and skill in Commissioning, especially in the areas of TAB, HVAC operations, DDC systems and electrical system operations. The required expertise for this project must be part of the skill and experience set of the firm making the proposal. It is the university's desire that the Commissioning Authority (CxA) satisfy as many of the following preferences as possible:

1. It is desirable that the CxA will have functioned as the principal CxA for multiple projects over 100,000 square feet and will have acted as principal CxA for a project of a similar type of facility to the Project at hand.
2. The Commissioning team members should have experience in:
   A. operation and troubleshooting of HVAC systems,

B. direct digital control (DDC) systems,
C. lighting control systems, and
D. testing, adjusting, and balancing (TAB) of HVAC systems. Extensive (minimum of five years) field experience is required for this type of work and systems.

3. Team members have knowledge and experience in building operations and maintenance and have provided O & M training.
4. Team members have experience in energy-efficient systems design, and control strategy optimization.
5. Team members have experience writing commissioning specifications and test procedures.

BUDGET

The construction budget for this project is approximately $34,800,000.

ATTACHMENTS

- Submittal Cover Sheet
- Attachment A-Commissioning Written Work Products
- Attachment B-Smith Renovation Schematic Design Graphics
  https://drive.google.com/drive/folders/1lEZpAZprnDvi4MbQPhZ2syZflEKvUhQ5?usp=drive_link
- Attachment C-Smith Renovation Schematic Design Narrative
  https://drive.google.com/drive/folders/1lEZpAZprnDvi4MbQPhZ2syZflEKvUhQ5?usp=drive_link

This sheet is to be the cover sheet for the submittal. If the submittal is bound, this will be the top sheet visible upon opening the binder cover.

SUBMITTAL COVER SHEET

COMMISSIONING SERVICES

Smith Comprehensive Renovation

Commissioning Firm	Engineer of Record
Mechanical Engineering Firm	Mechanical Engineer
Electrical Engineering Firm	Electrical Engineer
Plumbing Engineering Firm	Plumbing Engineer
Other Firm	
Other Firm	

ATTACHMENT A

COMMISSIONING FORMAL WRITTEN WORK PRODUCTS

Product	Created By	Product Description and Form	Due Date	Deliver To
Scoping Mtg Minutes	CxA	Minutes and notes of the scoping meeting	< 1 week after meeting	All Cx team
Develop OPR	CxA	Report	Prior to SD	Design Team & University
Obtain BOD	Design Team	Report	Prior to SD	Design Team & University
Schematic Design Review	CxA	Summary report of observed concerns and deficiencies compared to University Design Intent and Cx	1 week after release of SD	Design Team & University
Construction Documents Design Review	CxA	Summary report of observed concerns and deficiencies compared to University Design Intent and Cx	1 week after release of DD and 1 week after release of CD	Design Team & University
Final Cx Plan	CxA	Final Cx plan for const. phase (edited version of Draft plan of bid documents)	1-2 weeks after Cx scoping mtg.	All Cx team
Cx Schedule	CxA	Initial summary schedule and detailed version	Summary schedule: 1wk after scoping	All Cx team
Equipment submittals	All Subs	Detailed data on all Cx'd equip.	during normal submittals	CxA
Prefunctional tests and checklists	Specs and CxA	List by equipment of Prefunctional checklists and Prefunctional tests	During normal submittals	Subs
Start-up and initial checkout plans	All Subs and CxA	Specific listing of procedures for combining CxA Prefunctional checklists with Sub's startup and checkout.	2 weeks before execution	CxA
Start-up and initial checkout reports	All Subs	Filled out Prefunctional checklists, tests, startup, and initial checkout	1-week after startup completion	CxA + normal others; O&M's
Controls Contractor Initial Check-out Plan	Controls Contr.	Complete step-by-step plan on checkout and CxA calibration procedures, including forms for documentation	3 weeks before beginning checkout	CxA

TAB plan and approach	TAB	Outline of TAB plan, approach, and schedule	< 6weeks before TAB	CxA, CM; Controls contr.
TAB progress reports	TAB	List of discrepancies, interpretations needed, tests completed	Twice a week	CxA and CM
Draft TAB report	TAB	Draft TAB report with method and results	< 2weeks after TAB completion	CxA + normal others
Final TAB report	TAB	Draft TAB report with method and results	<2 weeks after TAB completion	CxA + normal others; O&M's
Change orders	CM; PM	Change orders that affect commissioned equipment	<1-week after approved	CxA + others
Issues Log	CxA	Record / track of all issues and deficiencies	ongoing	CM + University
Non-Compliance /Deficiency reports	CxA	List of deficiencies and non-compliance with Contract Docs identified during Cx	Issued within 3 days of identifying	Cx Team
Cx Progress Record	CxA	Record / track of all submittals, checklists, tests, etc.	ongoing	CM
Cx progress reports	CxA	Gives scheduling needs and update, deficiency report, Cx progress	Weekly to Monthly	CM + University
Owner-contracted functional test forms	Subs/ vendor	Full description of test procedures in "form" format	>4-weeks before test	CxA
Functional test forms	CxA	Full description of test procedures in "form" format	>4-weeks before test	CM, Subs, O&Ms; ___A/E
Filled out functional test forms	CxA	Recorded documentation of the test on the form	With final report	CM, O&Ms; ___A/E
Functional test final approvals	CxA	List of test number, and descript., date of test, approval signatures of CxA	Within 4 days of successful completion of test	CM

O&M manuals (normal)	CM and Subs	Documentation of design, equipment, operations and maintenance, as-builts, etc.	Before substantial completion	CxA reviews on-site
Training plan	Subs	Topics and methods	2 weeks before training	CxA; CM
Training completion form	CxA	List of trainees, completed hrs., topics, and approvals (Form C-5c)	<2 weeks after training completion	CxA
Final Cx report	CxA	4-6-page summary report with important findings, etc.	Draft within 60 days of substantial completion	CM + University
Deferred testing reports	CxA	Documentation of seasonal and deferred tests	Within 2 weeks of test	CM + University
Re-commissioning Manual	CxA	Information required for re-commissioning building systems	Draft within 30 days of State Final Inspection	University
M & V	CxA	Quarterly and Annual Final Report	Within 30 days of each quarter and 1st yr of operation	Owner, Designer and SCO (final report only)

ATTACHMENT B
SMITH RENOVATION - SCHEMATIC DESIGN GRAPHICS

To access Graphics, Click on Link
https://drive.google.com/drive/folders/1IEZpAZprnDvi4MbQPhZ2syZfIEKvUhQ5?usp=drive_link

ATTACHMENT C
SMITH RENOVATION SCHEMATIC DESIGN NARRATIVE

To access SD Narrative, Click on Link
https://drive.google.com/drive/folders/1IEZpAZprnDvi4MbQPhZ2syZfIEKvUhQ5?usp=drive_link