



Smith & Boucher, Inc.
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Olathe, Kansas

913.345.2127



Gladstone Community Center
Re-Commissioning Services
RFQ Response

January 05, 2017

Glen Whitten
Contract Administrator
7010 North Holmes
Gladstone, MO 64118

RE: Request for Qualifications for Re - Commissioning Services

Dear Glen:

Thank you for the opportunity to submit our qualifications for the City of Gladstone Community Center HVAC Re-Commissioning project. Smith & Boucher has been a leading provider of commissioning and energy efficiency services in the Kansas City area for over 15 years.

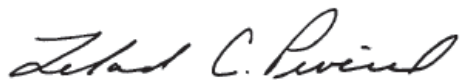
Our commissioning and energy efficiency group is a dedicated set of individuals focused on making buildings and MEP systems work and perform to meet the goals of the owners, occupants, and operators as efficiently as possible.

We have included the following information in our response:

- Professional Qualifications
- Personnel, Roles, and Resumes
- Commissioning Experience
- Re-Commissioning Approach and Methodology

Thank you again for the opportunity. If you have any questions or need additional information, please do not hesitate to call.

Sincerely,



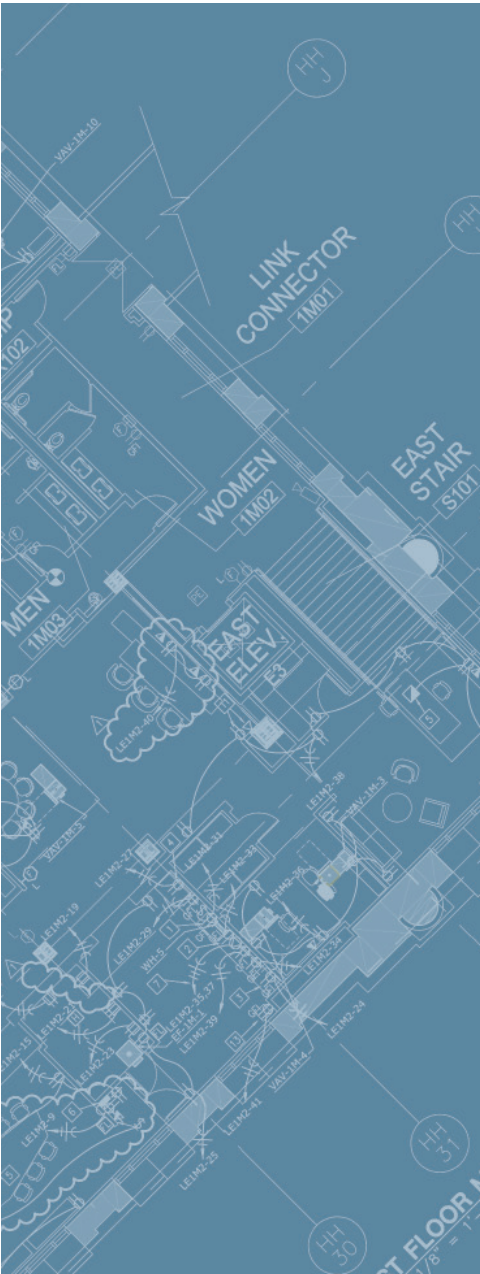
Leland C. Pival PE, CEM, CMVP, CxA, LEED AP
Associate
Smith & Boucher, Inc.

Enclosures

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Professional Qualifications

Smith & Boucher, Inc. was founded in 1967 and is a diversified engineering services firm dedicated to serving the buildings and facilities industry. We have provided expertise and consulting services for 50 years to hundreds of satisfied clients throughout the country.

Smith & Boucher is a small business engineering firm that specializes in the design and commissioning of mechanical and electrical systems. We have a diverse portfolio of projects that encompass nearly every building project type and conduct business across the country. Our engineers are licensed in 42 states. We do not specialize in one particular market segment which allows us to be very versatile and have a very broad experience level.

Smith & Boucher has been providing commissioning services for over 15 years. Our initial experience providing commissioning services was for our own design projects where we felt additional insight was needed to confirm that contractors were correctly implementing our designs and design strategies. As technology and control strategies have become more complex the associated level of expertise needed to implement the project requirements has increased and the building industry has witnessed a reduction in the ability of traditional contractors to execute and integrate the owners' project requirements during construction. This has led to the implementation of Commissioning as a recognized practice in the building industry. Smith & Boucher has developed and refined commissioning processes over that past 15 years to help owners validate that the work performed in new buildings meets the design intent and to help owners with existing buildings optimize building performance.

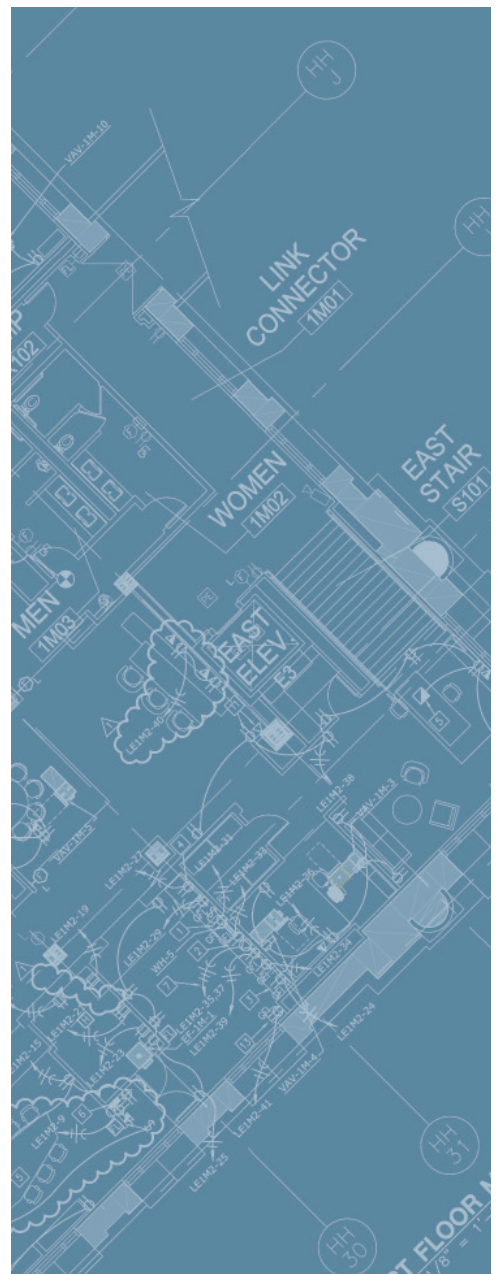
Our team provides:

- Experience in building systems commissioning for major projects. We have been the lead commissioning agent in projects totaling more than 3.5 million square feet of conditioned space.
- Extensive experience in the operation and troubleshooting of HVAC systems and energy management systems.
- Knowledge of building operation and maintenance.
- Knowledge of test and balance procedures for both air and water systems.
- Experience in energy-efficient equipment design and control strategy optimization.
- Experience in measurement and verification and the tools used to quantify building and equipment performance.
- Excellent verbal and written communication skills. Highly organized and able to work with both management and trade contractors.

Our firm provides commissioning, energy, mechanical and electrical consulting services to facility owners, architects, government agencies, and developers. We are committed to providing high quality, responsive, and complete engineering services to meet our clients' needs. We offer a full range of traditional services including site investigations, cost analyses, capital budgeting, technical and operational studies, systems designs, construction package preparation, cost estimating, construction administration, and facility operations and maintenance support. In addition, our firm offers LEED® Certified Professionals providing services that qualify under the U.S. Green Building Council's requirements for Building LEED® Certification.

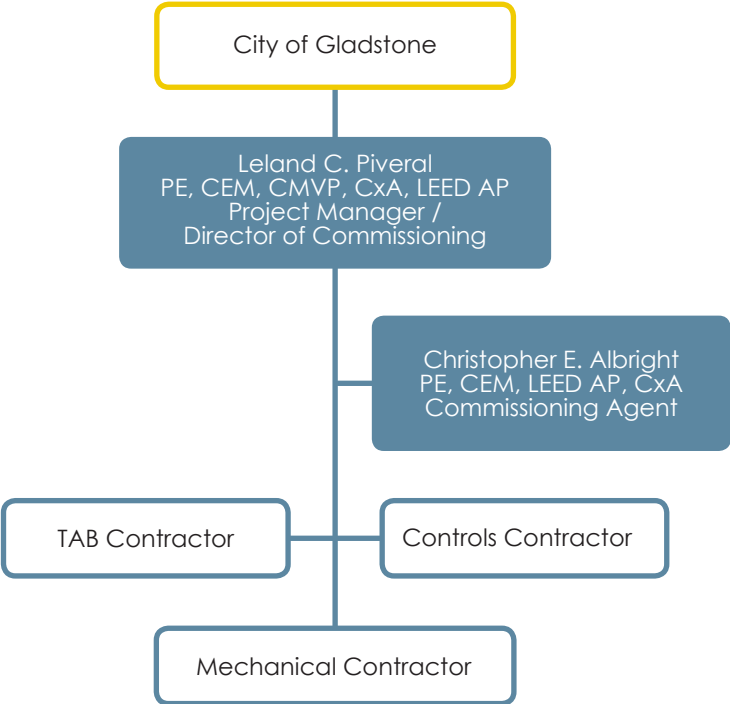
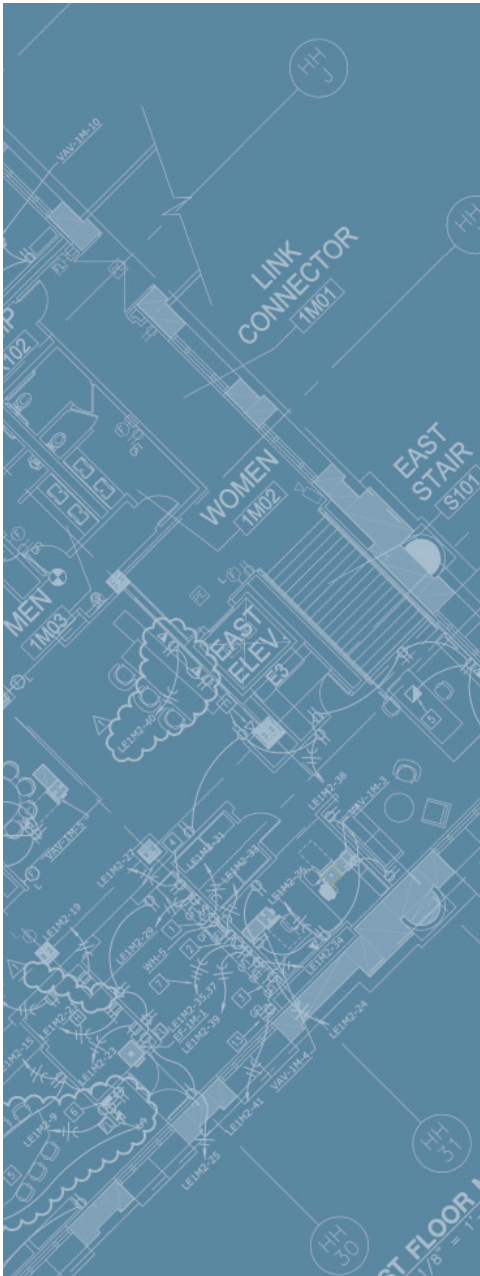
Smith & Boucher, is focused on providing commissioning and energy services to our industry. These services include technical and operational facility analysis, design intent development, peer document review, cost-estimating, utility analysis, system functional testing, test and balance services, facility operation assessments, and facility operation and maintenance support.

The extensive experience of our Commissioning Agents in all aspects of the design, construction, and evaluation of mechanical and electrical systems in buildings has given us a unique ability to troubleshoot, quantify, and correct building system issues.



Personnel

Our Commissioning team will be comprised of Leland Pivaler and Christopher Albright, both of whom are based in our Olathe, Kansas office. All of the commissioning agents for Smith & Boucher are registered professional engineers, not just technicians. We consciously take this approach as we believe this brings a higher level of experience and professionalism to the project. Additionally both Leland and Chris are Certified Commissioning Agents (CxA) through the Associated Air Balance Council (AABC) and Certified Energy Managers through the Association of Energy Engineers (AEE).



Leland C. Piveral PE, CEM, CMVP, CxA, LEED AP

Project Manager / Commissioning Agent

Professional Background

Lee has designed and commissioned mechanical and electrical systems involving air-side and water-side HVAC, plumbing, power distribution, lighting systems, and energy management systems for a variety of installations. His project experience includes public, commercial, educational, and medical installations. Lee is also a highly experienced energy manager, having performed energy audits on over 3 million square feet of buildings and has extensive experience with energy management systems and control system optimization. His extensive experience in the design, construction, and operation of HVAC, plumbing, and electrical systems gives him a unique ability to troubleshoot existing systems, test new systems, and provide a solution to any issue that may be encountered.

Education

B.S. Architectural Engineering, Kansas State University

Licenses & Registrations

Professional Engineer

- Kansas
- Missouri
- Virginia

Certified Energy Manager

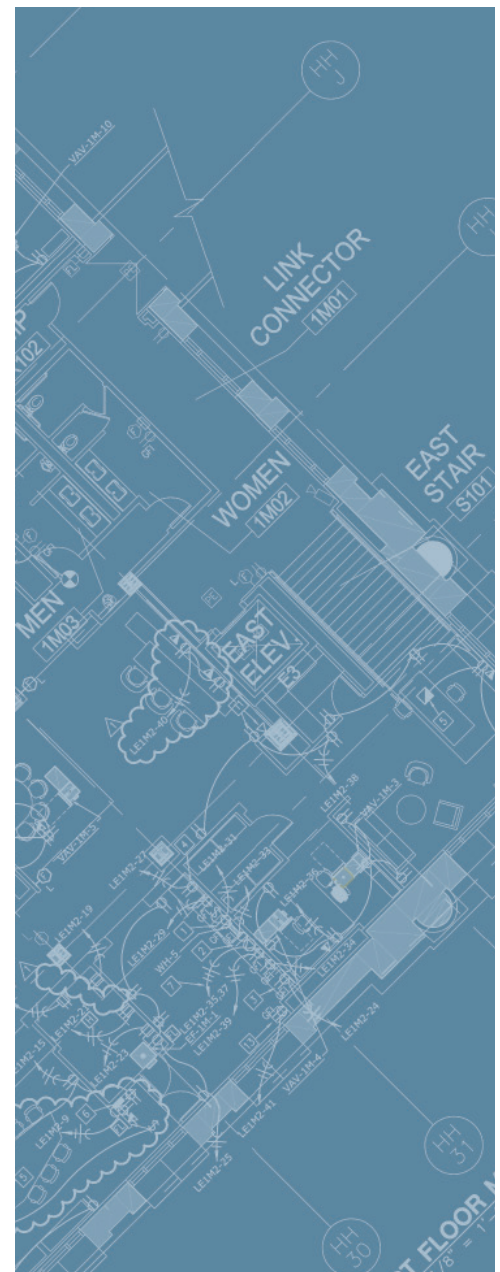
Certified Measurement & Verification Professional

Certified Commissioning Agent

LEED Accredited Professional Operation + Maintenance

Representative Project Experience

- North Kansas City School District
North Kansas City, Missouri
- Aviva Office Complex
Des Moines, Iowa
- Federal Reserve Bank of Kansas City
Kansas City, Missouri
- Kansas State University Commissioning On-Call
Manhattan, Kansas
- City of Des Moines, Fire Station #1
Des Moines, Iowa
- Museum at Prairiefire
Overland Park, Kansas
- Kearney Regional Medical Center
Kearney, Missouri
- Shawnee Justice Center
Shawnee, Kansas
- Whiteman Air Force Base
Knob Noster, Missouri



Christopher E. Albright PE, CEM, LEED AP, CxA

Vice President / Commissioning Agent



Professional Background

An officer of the firm, Chris Albright has served as the Commissioning Authority on many complex projects to include commercial office, justice, educational, data centers and critical use centers. He has performed commissioning on more than 75 buildings and tested over 4,000 pieces of equipment. He has commissioned HVAC, plumbing, heating, power, fire alarm, fire sprinkler, energy management systems and security systems.

Education

B.S. Architectural Engineering, Kansas State University

Licenses & Registrations

Professional Engineer

- Kansas
- Missouri
- 21 other States

Certified Energy Manager

LEED Accredited Professional

Certified Commissioning Agent (AABC)

Professional Affiliations

American Society of Heating Refrigeration and

Air-Conditioning Engineers (ASHRAE)

Association of Energy Engineers (AEE)

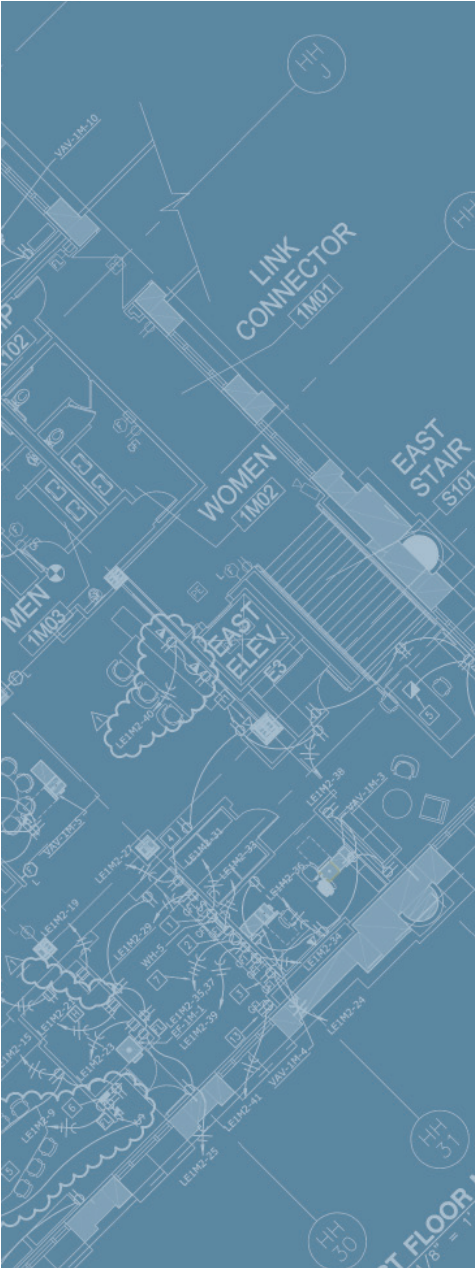
Building Commissioning Association (BCA)

AABC Commissioning Group

Society of American Military Engineers

Representative Project Experience

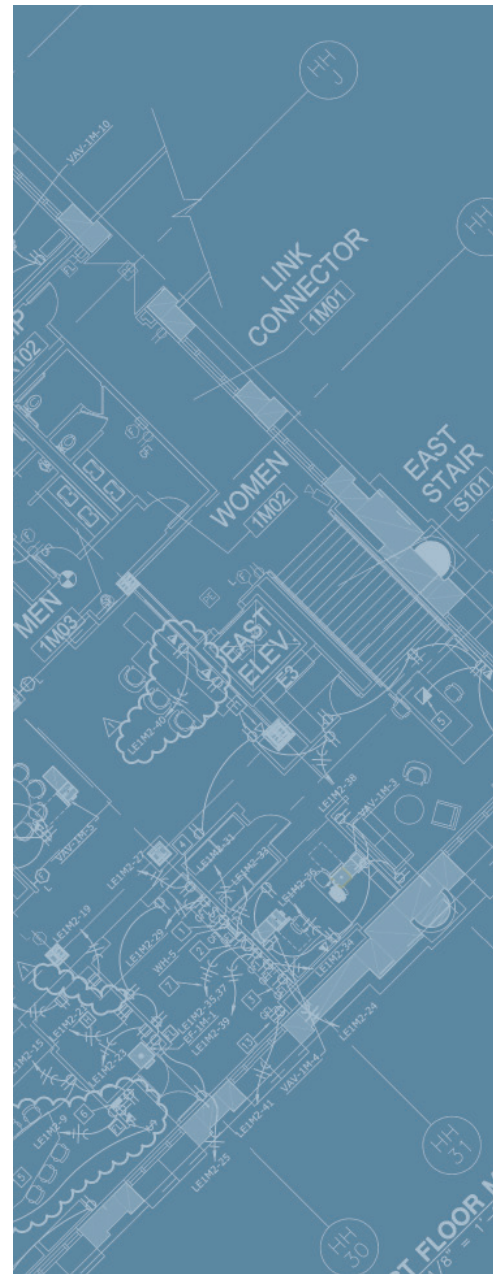
- North Kansas City School District
North Kansas City, Missouri
- Aviva Office Complex
Des Moines, Iowa
- Federal Reserve Bank of Kansas City
Kansas City, Missouri
- Kansas State University Commissioning On-Call
Manhattan, Kansas
- City of Des Moines, Fire Station #1
Des Moines, Iowa
- Museum at Prairiefire
Overland Park, Kansas
- Shawnee Justice Center
Shawnee, Kansas
- Whiteman Air Force Base
Knob Noster, Missouri



Commissioning Experience

Smith & Boucher has performed, or is performing, commissioning on the following projects:

- North Kansas City School District
North Kansas City, Missouri
 - Bell Prairie Elementary School
 - Staley High School
- Federal Reserve Bank of Kansas City
Kansas City, Missouri
- Kansas State University Commissioning On-Call
Manhattan, Kansas
- Aviva Office Building
Des Moines, Iowa
- Whiteman Air Force Base
Knob Noster, Missouri
 - ADAL Squadron Operations – BLDG 679
 - Security Forces Animal Complex
- Denver Immigrations Customs Enforcement
Department of Homeland Security
Denver, Colorado
- Flint Hills Discovery Center
Manhattan, Kansas
- Fort Leonard Wood BCT Complex VI
Fort Leonard Wood, Missouri
- Johnson County Communications Center
Olathe, Kansas
- Kansas Army National Guard Armed Forces Reserve Center (AFRC)
Wichita, Kansas
- Kansas City Police Department Metro Station
Kansas City, Missouri
- NREL – Integrated Biorefinery Research Facility
Golden, Colorado
- Penn State Erie University
Erie, Pennsylvania
- Shawnee Justice Center
Shawnee, Kansas





This list is not a comprehensive list of all of the commissioning projects that we have performed but is a selection of projects that demonstrate the diversity of projects and the broad base of experience we have commissioning buildings. We have also included some project examples that demonstrate some of the commissioning work we have performed in further detail.

North Kansas City School District

North Kansas City, Missouri

Smith & Boucher is the commissioning agent for this 3-phase project covering 3 years of construction at 21 elementary schools, 5 middle schools, and 4 high schools. The commissioning scope includes testing new HVAC systems and retro-commissioning existing HVAC systems. Smith & Boucher also provided the engineering services for all of the projects. Checkout and optimization of the building management system was a priority as all of the projects were tied to energy savings as part of an energy performance contract. In addition to the traditional functional testing, Smith & Boucher is providing ongoing services to the district to assist with system optimization and seasonal changeovers.

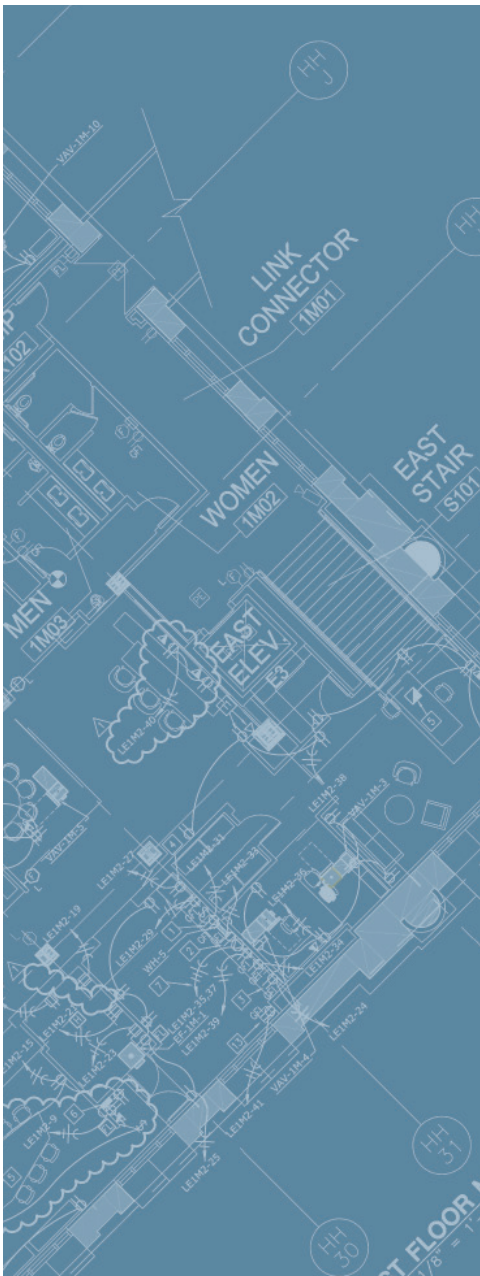
Kansas State University - Commissioning On-Call

Manhattan, Kansas

Smith & Boucher was hired by the Kansas State University in 2014 to provide commissioning services under an on-call contract. Typical services include design and construction drawing review, construction scheduling assistance, site observations, contractor coordination, functional testing, owner training coordination and ongoing measurement & verification. The functional testing scope consists of all HVAC systems, domestic hot water, lighting control and emergency power systems. To date, Smith & Boucher has been contracted to provide commissioning services on the following projects:

- Engineering Expansion – Phase IV (107,000 sf)
- College of Business Administration (140,000 sf)
- Seaton Hall Renovation/Addition (194,000 sf)
- Student Union Renovation (270,000 sf)
- Chiller Plant Expansion
- Campus Chilled Water Loop

As part of the on-call project, Smith & Boucher has been contracted to conduct commissioning on 36 buildings on campus. As part of the chilled water expansion project, each of the campus buildings is receiving an upgraded building automation system interface as well as energy features associated with the chilled water connection to the main loop. Smith & Boucher is commissioning each of these pieces to ensure proper operation and continuity.



Federal Reserve Bank of Kansas City

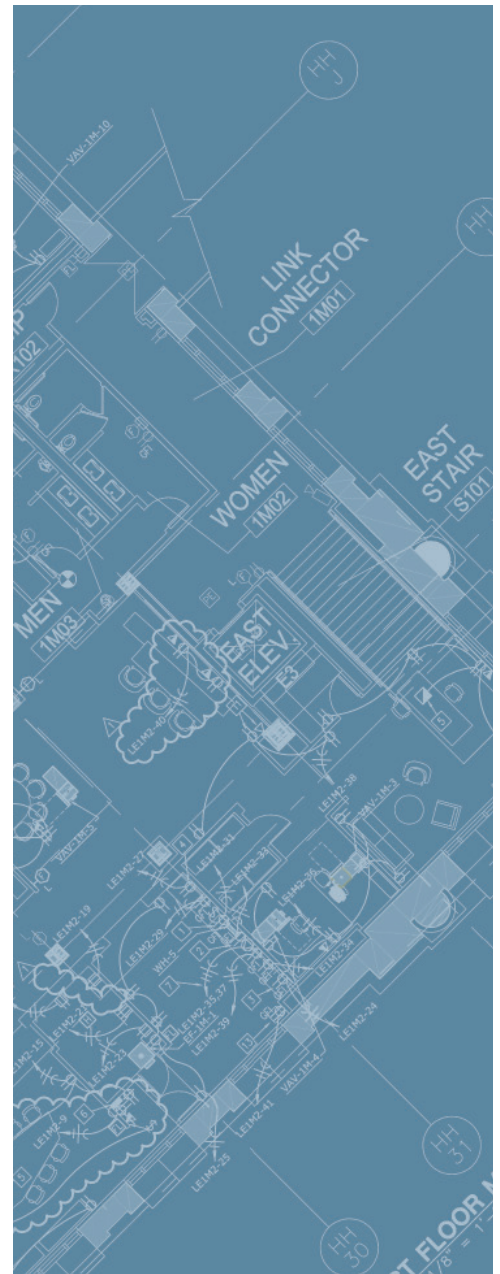
Kansas City, Missouri

Smith & Boucher provided mechanical and electrical engineering design as well as building commissioning services for this 12-story landmark project. The facility has a central chilled water system with four 1,500-ton chillers, cooling towers and condenser water storage for emergency operation. Air handling systems consist of custom floor-by-floor VAV units, energy recovery units and dedicated ventilation air units with a combination of under-floor and overhead air distribution.

The electrical system is two parallel utility services at medium voltage with multiple parallel diesel-drive generators capable of supplying 100 percent power to the facility. Parallel redundant UPS systems provide reliable power to a 2,000 sq.ft. central data center and distributed load throughout the facility. The data center floor is conditioned with redundant chilled water Liebert units. A 24-inch raised floor provides cabling pathways and a supply air plenum.

Building commissioning services include:

- Developing full commissioning specifications for mechanical, electrical, controls and life safety equipment.
- Developing a commissioning plan to summarize all systems and equipment to be commissioned; scope of services provided by the design team, the construction manager, the contractors and commissioning agent and pre-functional checklists.
- Developing functional testing criteria for all building automation systems equipment; all HVAC equipment, humidification equipment; domestic water emergency storage and plumbing systems; diesel generator system and paralleling switchgear; UPS systems; high-voltage switchgear; main electrical switchboards and panels; communications systems; interface of security, building control and life safety systems





Aviva Office Complex

Des Moines, Iowa

Aviva is a new, 10-story, 373,000 sf office complex in West Des Moines, Iowa. The MEP systems consist of a 2,000 ton central chilled water plant, custom air handling units, underfloor air distribution and an emergency generator system. The facility is LEED Certified Gold.

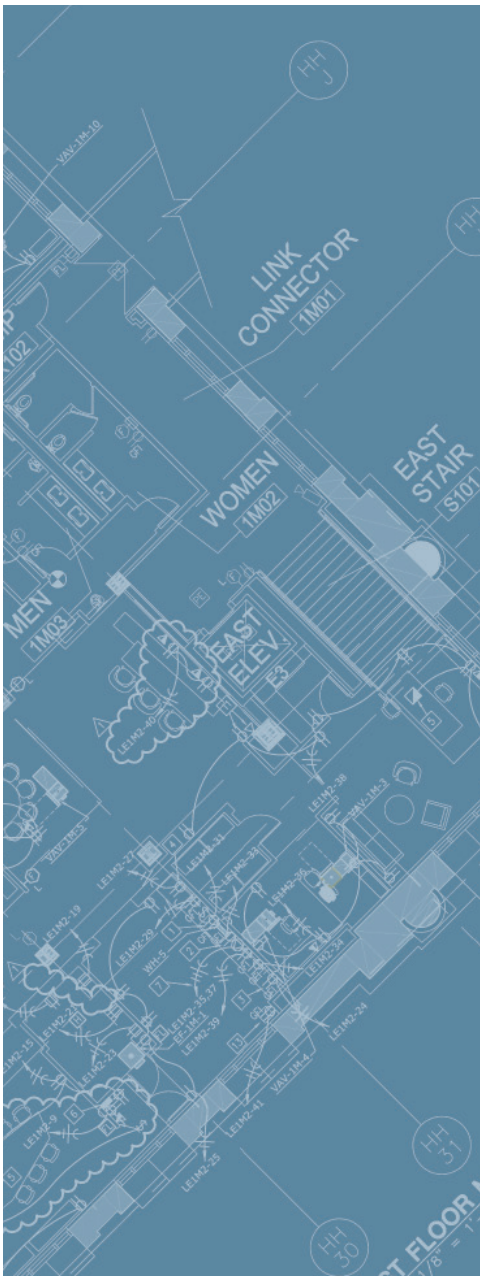
Smith & Boucher provided total building commissioning of the MEPF systems for the new Aviva office complex. Smith & Boucher was hired early in the design phase to provide design overview of the complex HVAC systems. Smith & Boucher also provided a significant amount of input into the chilled water system and air handling unit sequences.

Commissioned Systems include:

- Chilled water system
- Custom, built up air handling units
- Underfloor air distribution system
- Terminal air boxes
- Fan coil units
- Boiler snowmelt system
- Emergency generator system

Smith & Boucher was responsible for:

- Lead Commissioning Authority
- Reviewing all phases of design document development
- Rigorous review of HVAC control sequences
- Functional testing of all HVAC, power lighting and domestic hot water systems
- Documenting and tracking all construction deficiencies identified during commissioning
- Assistance with operator and maintenance training
- Completion and submission of all LEED EA p1 and EAc3 credit requirements

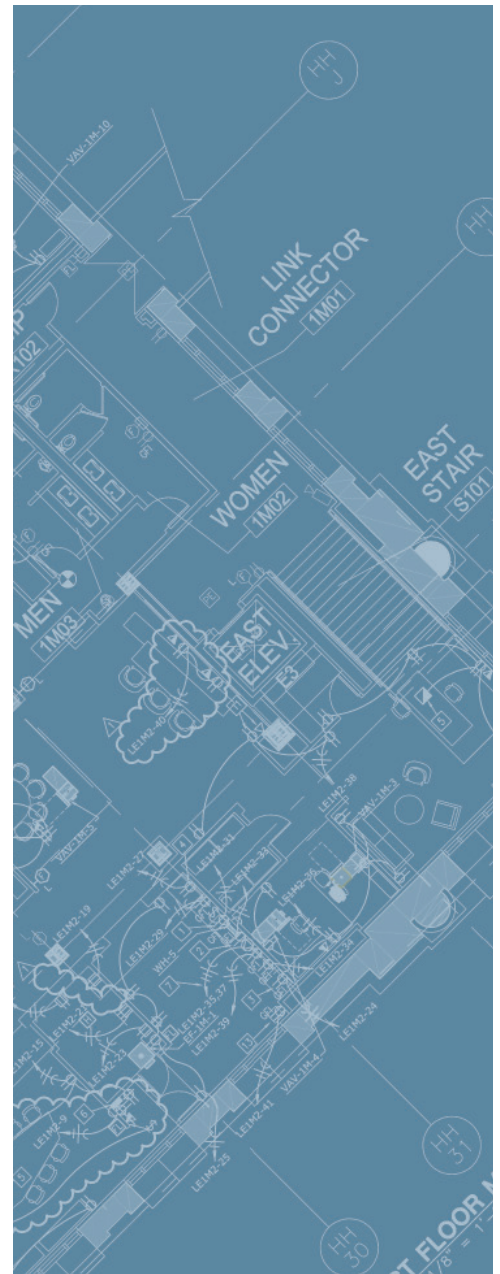
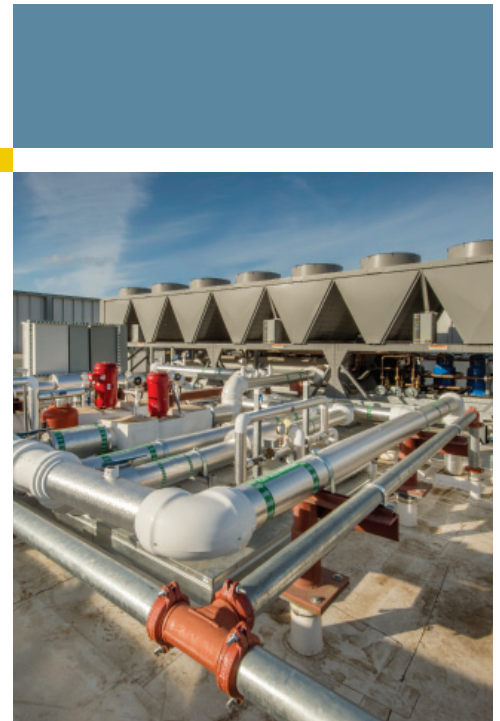


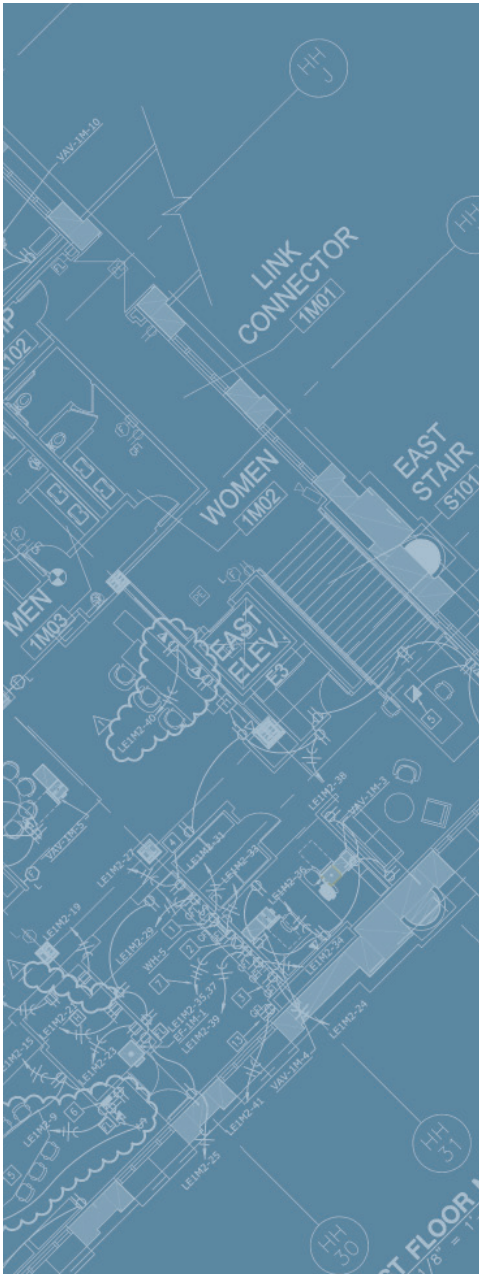
Approach & Methodology

Our commissioning, re-commissioning and retro-commissioning services are targeted to our client's needs to meet the project's budget and quality requirements. Our services will help ensure a reliable, economical and maintenance-friendly facility.

To do this, we have developed a comprehensive and systematic approach to the commissioning process for an existing building:

- Client and Project Team Workshops: Initial workshops with the project team are held to identify and document goals and current operational issues.
- Existing Documentation: Existing drawings, sequences, TAB reports and other documentation is gathered to assist with evaluation and development of the re-commissioning plan.
- Existing Conditions and Issues Assessment: An initial walkthrough is conducted to provide an overview of the current operating conditions. An analysis of the building automation system and controls is done at this time to determine the extent of control.
- Existing Utility Bill Analysis: Utility bills are gathered and analyzed for the previous two years. A reverse utility bill analysis is done to identify where utility money is being spent.
- Development of Re-Commissioning Plan: Once the initial analysis is done and the scope of work defined, the re-commissioning plan is developed and approved. The extent of testing, scope of work, plan for corrective actions and schedule are developed and reviewed with the project team.
- Install Data-Loggers: Based upon the plan, data-loggers are installed early in the process to start gathering data on equipment to quantify equipment runtime, efficiency, and control. Temperature, humidity, air quality, and amp/current loggers are often utilized.
- Control System Analysis and Control Sequence Review: An in-depth look at the control system is done at this phase to identify control sequences, equipment/building scheduling, sensor calibration, and other control related functional issues.
- Develop Functional Test Scripts: Based on the existing documentation and controls review, functional tests are developed to provide a guide to conduct an integrated functional test for each system component. Functional tests are developed to test each system in every operating mode.
- TAB: Depending on the plan and needs of the project, some level of Testing, Adjusting, and Balancing (TAB) is done, this is sometime done before the functional testing or potentially after depending on the issue. Smith & Boucher will partner with a TAB Contractor and direct all TAB activities.





- Conduct Functional Testing: The functional tests are conducted for each system to identify issues within the operation system or within the individual pieces of equipment. The various modes of operation are tested to ensure compliance with the original or revised design sequence. Space comfort and utility consumption are two primary items that are monitored during the process.
- Develop Master Deficiency Log: Once all logging, TAB, and functional testing is complete a comprehensive deficiency log is developed to track all of the noted issues. The log notes the issue, the impact of it (cost, comfort, functionality, etc.) and the recommendation for resolution.
- Implement Low-No Cost and Simple Repairs: The low cost or no cost issues are resolved at this phase.
- Develop Potential Cost Savings & Construction Costs Associated with Findings: For all issues that require some level of construction or implementation, an energy savings analysis will be done to identify the potential energy savings and the associated construction cost. A ROI and simple payback analysis will be performed for each line item to assist in the evaluation of implementation.
- Develop Implementation Plan: Based on the deficiency log, goals, and severity of the issues, an implementation plan will be developed by the project team to implement the corrective actions.
- Facilitate and Implement Corrections: Smith & Boucher has the capability to do turn-key implementation and can provide full construction management. Subcontractors will be obtained to implement the corrections.
- Conduct Validation Testing: After all corrective actions have taken place, functional testing and data-logging will be done to validate that the issue has been resolved and the appropriate response (thermal comfort, energy savings, etc.) are being achieved.
- Develop Final Report: A summary final report will be developed to provide written documentation of all efforts done as part of the re-commissioning process. The documentation will include the existing data gathered, TAB forms, functional test reports, utility analysis, savings/costs calculations, deficiency log, corrective action items, and all supplemental meeting notes.
- Develop Owner Training Plan: An owner training plan will be developed and executed to ensure that the facility maintenance staff is properly trained on all aspects of the building. An operational systems manual will be developed to assist with the day to day operation and maintenance activities in the building.
- Conduct Close-Out Meeting: A final close-out meeting will be held to summarize all of the re-commissioning activities, review goals and provide potential next steps either for follow-up or for long term implementation activities.

Savings Potential

The energy savings potential for re-commissioning efforts varies widely and depends greatly on the age, type, and functionality of the equipment. The extent of the building automation system within the building and the knowledge of the facility maintenance personnel typically has the greatest impact on the current usage and corresponding potential energy savings. That said, our re-commissioning efforts and energy auditing experience has shown that most facilities run 20-30% higher than they need to because of operational and equipment issues.

