

The logo consists of the letters 'SSR' in a white, serif font, set against a solid blue rectangular background. The letters are bold and closely spaced.

COMMISSIONING



ENGINEERING | TECHNOLOGY + EQUIPMENT PLANNING  
COMMISSIONING | SUSTAINABILITY | BUILDING ENCLOSURE

# GET TO KNOW US

SSRCx, a division of SSR, offers client-centered, services resulting in first class facilities and lasting relationships with builders and owners across the country. SSRCx has the experience and proven track record to ensure building systems operate as designed and to optimize system operation.

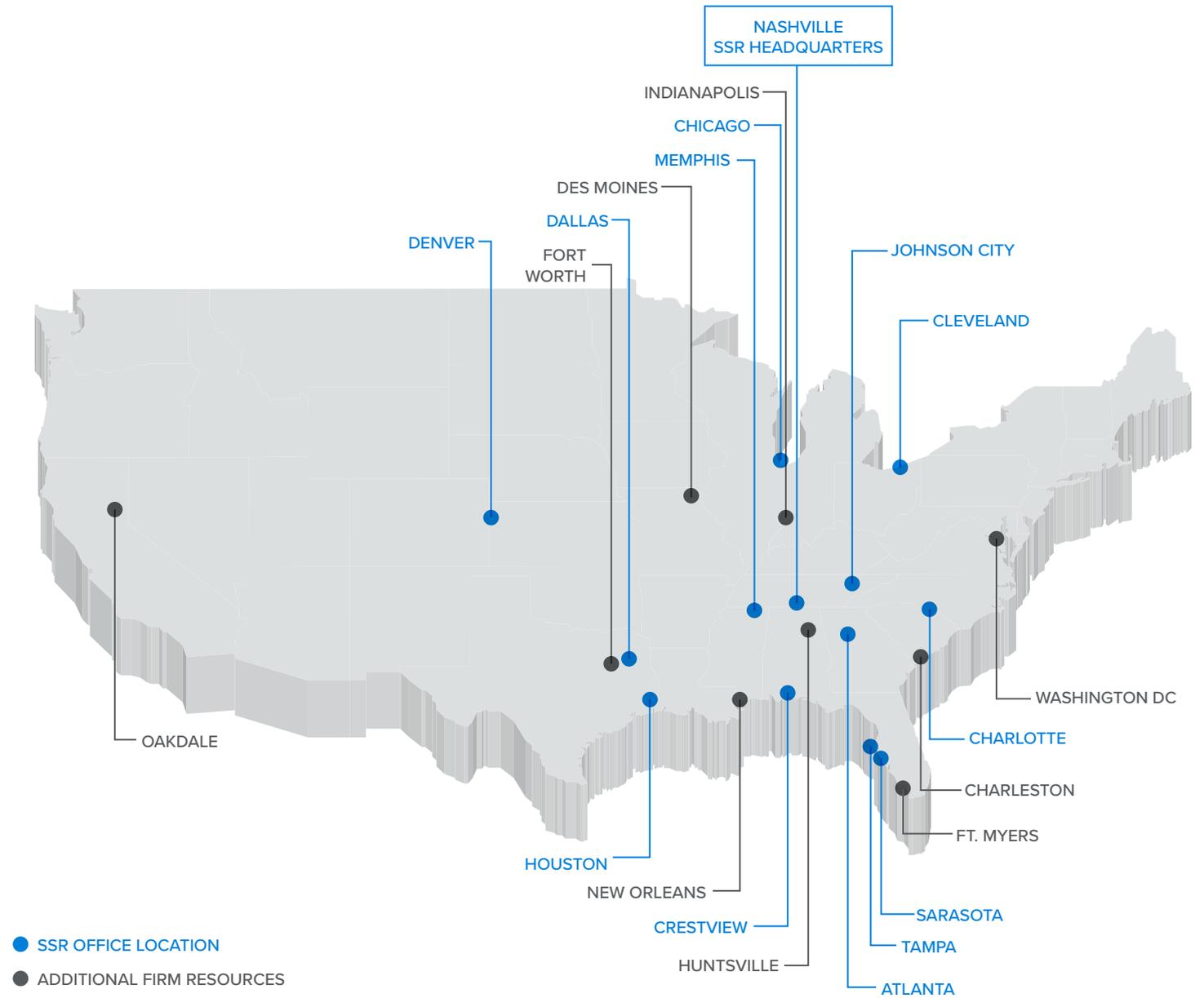
SSRCx has been at the forefront of commissioning facilities, providing quality services since 1998. This history has equipped SSRCx with a unique blend

of qualified commissioning agents holding the necessary experience to embrace the challenges of your project.

Our “total commitment” to commissioning services encompasses years of complete dedication to the commissioning of projects throughout the country. Our team includes professionals from a variety of backgrounds that are devoted full-time to facilities commissioning.

WE ARE **SMITH SECKMAN REID** & WE'RE IN THE BUSINESS OF PROVIDING EXCEPTIONAL CLIENT EXPERIENCES.

COMMISSIONING PLAYS A CRUCIAL ROLE IN FACILITATING A SMOOTH PROCESS THAT ENSURES A FACILITY'S SYSTEMS OPERATE AS THEY SHOULD.





# WHAT WE DO

## BUILDING ENCLOSURE

Building Enclosure Commissioning  
 Roof Consulting  
 Enclosure Testing  
 Facility Condition Assessments & Investigations  
 Design & Design Consulting

## CIVIL

Site Planning & Development  
 Grading & Drainage  
 Erosion & Sediment Control  
 Stormwater Management  
 Surveying & Mapping  
 Hydrology

## COMMISSIONING

Total Building Commissioning  
 Retro-Commissioning  
 Continuous Commissioning®

## COMPLIANCE AND FACILITY MANAGEMENT

Continuous Compliance Readiness  
 Environment of Care Reviews  
 Day 2 Compliance  
 Facility Management Consulting  
 Compliance Education/Training

## CONTROLS AND INTEGRATION

Process Control  
 SCADA  
 Wireless Communications  
 Machine Control & Guarding  
 Data Collection

## ELECTRICAL

Power Distribution  
 Interior & Exterior Lighting  
 Daylighting  
 Standby Power Facilities  
 Uninterruptible Power  
 Power Conditioning  
 Coordination Studies

## ENVIRONMENTAL

Water Treatment & Distribution  
 Wastewater Treatment & Collection  
 Water Reclamation/Reuse  
 Integrated Water Planning  
 Financial Analysis  
 Program Management

## FIRE PROTECTION

Wet & Dry Sprinkler Systems  
 Clean Agent Systems  
 Foam Systems  
 Hydraulic Modeling

## GEOGRAPHIC INFORMATION SYSTEMS (GIS)

System Design & Implementation  
 Infrastructure Mapping & Asset Management  
 Data Migration  
 Mobile & Web-based Geospatial Solutions  
 Location Analytics  
 Training

## MECHANICAL

Central Energy Plants  
 Building Automation Systems  
 Energy Management  
 CFD Analysis  
 Geo-Exchange  
 Campus Distribution Systems  
 High Performance HVAC  
 Cogeneration

## PLUMBING

Building Water Supply & Sewer Gas Systems  
 Water Use Audits & Management  
 Greywater & Rainwater Systems  
 Process Pure Water  
 Solar Water Heating

## STRUCTURAL

Foundations, Deep & Shallow  
 Reinforced, Pre-Stressed, & Post-Tensioned Concrete  
 Steel Fabrication  
 Failure Analysis  
 Seismic Evaluations & Retrofit

## SUSTAINABILITY

Green Building Certification Consulting  
 Sustainability Consulting  
 Building Performance Consulting

## TECHNOLOGY + EQUIPMENT PLANNING

Healthcare Technology + Equipment Planning  
 Healthcare Consulting  
 Equipment Planning  
 Communication Systems Design  
 Security Consulting  
 Audiovisual Design  
 Asset Management  
 Procurement  
 Transition Planning  
 Move Management

## TRANSPORTATION

Roadways & Bridges  
 Signalization  
 Airports  
 Port Facilities  
 Roadway Planning & Safety Audits  
 Intelligent Transportation Systems  
 Construction Engineering Inspection

*Continuous Commissioning®, CC® and PCC® are registered trademarks of the Texas A&M Engineering Experiment Station, a member of the Texas A&M University System, an agency of the State of Texas.*

# COMMISSIONING

SSRCx uniquely combines elements of sustainability, energy efficiency, and quality assurance for both new construction and existing facilities. Our demonstrated total building commissioning performance spans a wide range of commissioned systems from medical gas to security systems, and emergency power to building envelope. We are focused on developing lasting relationships and serving clients for the life of their buildings.





## ATRIUM HEALTH

CHARLOTTE, NC

Atrium Health is embarking on an ambitious and far reaching program to transform the delivery of healthcare for the Carolinas and surrounding region. The need to develop and deliver high-quality, efficient, and effective facilities — on time and in budget — cannot be overstated. Atrium has wisely recognized the degree to which a solid facility commissioning process is critical to that delivery and engaged SSR's commissioning division to serve in the commissioning agent role for their upcoming projects.

Systems Commissioned:

- Mechanical equipment and systems
- Plumbing equipment and systems
- Electrical equipment and systems
- Fire protection system
- Security systems



## RHINE ORDNANCE BARRACKS MEDICAL CENTER REPLACEMENT

WEIBACH, GERMANY

The new Rhine Ordnance Barracks-Medical Center Replacement will be a world class, state-of-the-art facility. With a mission to establish a regional medical center responsible for the care of active duty military, their families, and other eligible beneficiaries living in and around the Kaiserslautern military community, the Medical Center establishes a medical hub within the European Theater of Operations to serve soldiers returning from deployment in Europe, Asia, the Middle East, and Africa. The facility will combine the services of the existing aging Landstuhl Regional Medical Center and clinical services currently located at Ramstein Air Base (RAB).

Systems Commissioned:

- Mechanical equipment and systems
- Plumbing equipment and systems
- Electrical equipment and systems
- Telecom and IT systems
- Laboratory equipment
- Building envelope
- Life safety
- Doors



## NATIONAL SECURITY CAMPUS

KANSAS CITY, MO

The National Nuclear Security Administration (NNSA) National Security Campus protects some of the nation's premier security assets. The facility's nearly 2,500 workers manufacture non-nuclear mechanical, electronic, and engineered materials for national defense systems. The campus includes nearly 1.5 million SF of manufacturing spaces, laboratories, office space, and warehouses.

Systems Commissioned:

- Mechanical equipment and systems
- Plumbing equipment and systems
- Electrical equipment and systems
- Fire protection system
- Security systems



## NASHVILLE INTERNATIONAL AIRPORT

NASHVILLE, TN

Nashville International Airport (BNA) passenger traffic continues to exceed projected growth numbers, year after year. BNA Vision is a \$1.2 billion dynamic expansion plan designed to get in front of this growth and maintain the Nashville International Airport as a world-class airport. The BNA Vision Program is a complex undertaking with many moving parts. The program includes, but may not be limited to, the following five projects:

- Garage A with 2,200 parking spaces
- New Central Utility Plant (CUP), Concourse D (6 gates), and additions to the north and south side of the terminal (Terminal Wings) on the departures and arrivals levels
- Demo of existing Short Term Parking Garage, design/build new Garage and two-story Administration Building
- Demo of the current Central Terminal, design/build new central security and terminal, and new International Arrivals Facility (IAF) (6 gates)
- Demo of current International Arrivals Building
- Terminal Drive expansion and the relocation of Donelson Pike



## THE LUNDER BUILDING, MASSACHUSETTS GENERAL HOSPITAL BOSTON, MA

Located in the heart of Massachusetts General Hospital's main campus, The Lunder Building brings together both inpatient and outpatient clinical services through connections with nearly half of the other buildings on site.

Systems Commissioned:

- Mechanical equipment and systems
- Plumbing equipment and systems
- Electrical equipment and systems
- Fire protection system



## IU HEALTH REGIONAL ACADEMIC HEALTH CENTER

BLOOMINGTON, IN

The 620,000 SF, five-floor medical facility will improve the patient experience, including greater patient privacy through the use of patient transport areas not visible to the general public. The outpatient portion will include a comprehensive cancer center, specialty physician offices, surgical suites, a minor-procedure area and a diagnostic center.

Systems Commissioned:

- Mechanical equipment and systems
- Plumbing equipment and systems
- Electrical equipment and systems



## VIRGINIA TECH BIOMEDICAL RESEARCH BUILDING

BLACKSBURG, VA

The primary focus of the new four-story, 140,000 SF building is to provide state-of-the-art research facilities for enhanced biomedical research programs in five major thematic areas. This project is a collaboration between Carilion Clinic and Virginia Tech.

Systems Commissioned:

- Mechanical equipment and systems
- Plumbing equipment and systems
- Electrical equipment and systems
- Building Enclosure



## CHICAGO TEACHERS UNION FOUNDATION

CHICAGO, IL

The Chicago Teachers Union Foundation's (CTUF) headquarters allowed consolidation of the membership services and operations into one new location. To achieve the needs of the CTUF, an existing 100,000 SF brick building was gutted and reconstructed from the inside. We were on-site to assist with identifying any impacts the design would have on the future maintainability of the mechanical systems within the building.

Systems Commissioned:

- Mechanical equipment and systems
- Plumbing equipment and systems
- Electrical equipment and systems



## DICKIES ARENA

FORT WORTH, TX

The new Dickies Arena is a state-of-the-art multi-purpose facility designed for concerts, sporting events, rodeo, and the month-long Fort Worth Stock Show. Dickies Arena seats 14,000 for concerts and 9,300 for equestrian and rodeo events. In addition to the 580,000 SF arena, the facility features 91,315 SF of space for indoor stock booths or pens, suitable for 400 spaces.

Systems Commissioned:

- Mechanical equipment and systems
- Plumbing equipment and systems
- Electrical equipment and systems
- Fire protection system



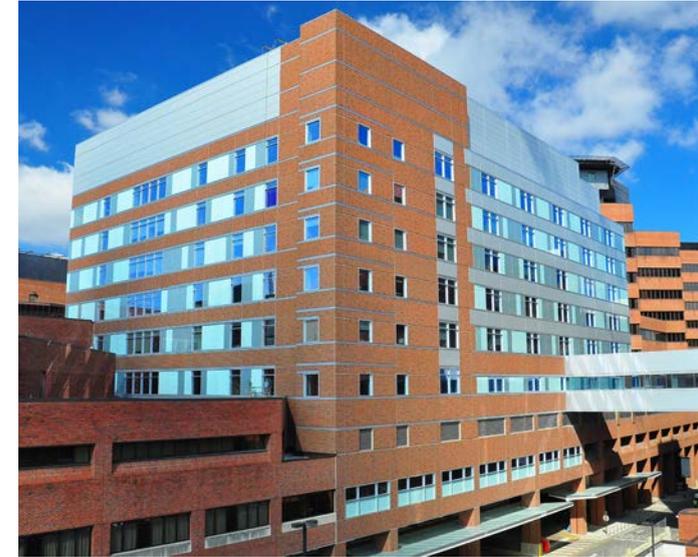
## TEXAS TECH UNIVERSITY TALKINGTON HALL

LUBBOCK, TX

J.T. & Margaret Talkington Hall, Texas Tech University's first LEED certified residence hall, is a suite-style complex designed to house more than 500 students. In addition to modern living arrangements and amenities, the hall adjoins The Commons at Talkington Hall, a cutting edge multi-story dining facility.

Systems Commissioned:

- Mechanical equipment and systems
- Plumbing equipment and systems
- Electrical equipment and systems



## VANDERBILT UNIVERSITY MEDICAL CENTER CRITICAL CARE TOWER

NASHVILLE, TN

The Critical Care Tower is an 11-story, 500,000 SF bed tower addition to Vanderbilt University Medical Center. Included in the expansion was the emergency department and the surgical department with 16 new operating rooms, a floor for cardiac services, and five floors for 170 acuity adaptable beds.

Systems Commissioned:

- Mechanical equipment and systems
- Plumbing equipment and systems
- Electrical equipment and systems
- Building Enclosure



## MOSES H. CONE MEMORIAL HOSPITAL NORTH TOWER EXPANSION & CEP

GREENSBORO, NC

The 6-story North Tower and associated central energy plant represent the largest expansion in Moses Cone history. The project includes many progressive energy features including daylighting and solar hot water heating. It is the first healthcare facility in North Carolina, and one of only three in the nation, to utilize "chilled beams" in patient rooms.

Systems Commissioned:

- Mechanical equipment and systems
- Plumbing equipment and systems
- Electrical equipment and systems

# EXISTING BUILDING COMMISSIONING

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Most facilities are designed to operate at a certain level of performance. Over time, a facility's performance may diminish due to age, improper maintenance, or worn-out equipment. Existing building commissioning provides an owner with a means to improve performance of existing buildings by finding ways to optimize systems and replace equipment with new units that are more energy efficient.





## BAYCARE HEALTH SYSTEM ST. JOSEPH'S HOSPITAL-NORTH

LUTZ, FL

SSRCx was contracted by BayCare Health Systems to conduct a Continuous Commissioning® (CC®) assessment of St. Joseph's Hospital-North. The purpose of the assessment was to evaluate the operational efficiency of the existing HVAC and lighting systems, identify deferred maintenance items that may be impacting overall operational efficiency, identify cost-effective energy savings opportunities designed to resolve operating problems, improve comfort, reduce energy use, and identify potential retrofits or capital-intensive projects for future consideration.

During the assessment, SSRCx identified 12 CC® measures. In the first nine months of operation, St. Joseph's Hospital-North has seen \$237,000 in energy cost savings through January 2016.



## ADVENTHEALTH WESLEY CHAPEL

WESLEY CHAPEL, FL

SSRCx was contracted by AdventHealth to conduct a Continuous Commissioning® (CC®) assessment of their 202,200 SF Wesley Chapel facility. It opened in October 2012 as a full-service, 83-bed hospital. The purpose of the assessment was to evaluate the operational efficiency of the existing HVAC and lighting systems, identify deferred maintenance items that may be impacting overall operational efficiency, identify cost-effective energy savings opportunities designed to resolve operating problems, improve comfort, reduce energy use, and identify potential retrofits or capital-intensive projects for future consideration.

During the assessment, 18 specific recommendations were identified, the most significant of these being converting seven of the 15 air handling units and corresponding constant volume terminal boxes to a variable air volume mode. Quantifying the projected energy savings was necessary and was accomplished by creating a calibrated energy model.



## BROOKDALE SENIOR LIVING FACILITIES

VARIOUS LOCATIONS, CA

SSR was contracted by Brookdale Senior Living, a nationwide owner and operator of assisted living and memory care facilities, to perform facility energy and retro-commissioning assessments for 36 locations in California. The project consisted of 2.5 million SF of audited facilities. With a one-year completion timeline, and all sites being located out of state, this project illustrates SSR's ability to complete a large scope auditing/retro-commissioning project within the owner's schedule.

For each site, SSR was responsible for providing an on-site assessment and investigation of existing systems and their performance, including historic energy usage. These assessments included analysis/reporting on the ability of HVAC and energy systems to meet the environmental needs of the facility, identification of equipment and operations issues and improvements, and analysis of costs/payback and energy/water savings for recommended measures. From this assessment, recommended corrective actions were identified and presented to Brookdale for evaluation.



## RICHARD C. SHELBY CENTER FOR MISSILE INTELLIGENCE

HUNTSVILLE, AL

SSRCx was contracted by the Missile and Space Intelligence Center (MSIC) to provide retro-commissioning (RCx) investigation and implementation services to the Richard C. Shelby Center for Missile Intelligence located on Redstone Arsenal in Huntsville, Alabama. Originally constructed in 1998, the facility is comprised of five buildings and an atrium. The central chilled water and heating water plant equipment and building automation system (BAS) is housed in building 4543.

The commissioning process for RCx is divided into four steps: planning, investigation, implementation, and hand-off. SSRCx identified eight facility improvement measures (FIMs) and one capital improvement project (CIP) for analysis. Through additional analysis we were able to identify six FIMs and one CIP that could be cost-effectively implemented.

# BUILDING ENCLOSURE COMMISSIONING

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Building Enclosure Commissioning (BECx) is a quality-based process by which the design and construction of building enclosure systems are evaluated against project requirements, as established by the owner. These goals are commonly related to moisture control and energy performance.





## TENNESSEE STATE MUSEUM

NASHVILLE, TN

The new Tennessee State Museum (TSM) is a replacement facility, and the first major new construction project overseen by the State of Tennessee Real Estate Asset Management agency in decades. Planned as a 100-year building, the new TSM's design incorporates high quality, high performance materials and systems throughout to preserve and display historical artifacts and treasures that dynamically demonstrate the history of the state. SSRcx was able to supply many of the specialized resources the state needed to address the project's challenges by helping to assess the quality and performance of building systems from design through the first few years of operation. Our team is performing the following services:

- Mechanical, electrical, and plumbing systems commissioning (MEPCx)
- Building enclosure commissioning (BECx)
- Operations & maintenance research and recommendations
- Utility estimating
- Measurement and verification planning and implementation
- Monitoring Based Commissioning (MBCx) and Fault Detection and Diagnostics (FDD)



## FORT RILEY REPLACEMENT HOSPITAL

FORT RILEY, SK

SSRCx provided commissioning and building enclosure commissioning services for this \$400 million, 552,000 SF (263,000 SF inpatient community hospital and a 289,000 SF outpatient clinic), a central energy plant, an ambulance garage, special foundations, and building information systems. The systems commissioned include:

- Curtain walls
- Concrete panels
- Masonry
- Insulation
- Waterproofing
- Air/vapor barriers
- Sealants



## CONTACT

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