CXGBS®

Commissioning & Green Building Solutions, Inc.

BUILDING PERFORMANCE RIGHT FROM THE START

CAPABILITIES

- Decarbonization
- Commissioning
- Energy Audits
- Sustainable Building Performance Consulting
- Energy Modeling
- Forensic Investigation

COMMISSIONING & GREEN BUILDING SOLUTIONS, INC.

HQ **100 HARTSFIELD CENTRE PKWY**

STE. 500

ATLANTA, GA 30354

770.831.6760

770.831.6761

WWW.CXGBS.COM

Atlanta, GA \ Jackson, MS \ Austin, TX \ East Berlin, PA

Commissioning & Green Building Solutions, Inc.

BUILDING PERFORMANCE RIGHT FROM THE START

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COMPANY OVERVIEW

CxGBS® assists long-term building owners by increasing their bottom line through operational efficiency.

Commissioning & Green Building Solutions, Inc. (CxGBS®) is a nationally recognized professional consultancy firm specializing in the decarbonization of buildings, commissioning, and the application of sustainable design and development principles. Established in 2002 and headquartered in Atlanta, Georgia, CxGBS is a woman-owned company that serves clients across the Northeast and Southeast United States.

CxGBS helps building owners achieve high-performing buildings by employing their expertise as a project team member. They utilize their unique Holistic Commissioning® process to assist the team in meeting the owner's performance goals, reducing the total costs of building ownership, and enhancing occupant and stakeholder satisfaction.

Over the years, CxGBS has gained a strong reputation in the industry, having served as the commissioning authority for construction projects worth over $6 billion. They have also played a crucial role in more than fifty LEED accredited projects, primarily serving as the sustainability consultant, to help teams achieve LEED® certification.

With their extensive experience across various building types and project scopes, CxGBS possesses a highly skilled staff comprising of professional engineers and architects, project managers, LEED accredited professionals, and certified commissioning authorities. These dedicated individuals are committed to delivering the owners' requirements and providing sustainability services of the highest quality and value to their clients.

Overall, CxGBS stands as a leader in the field of decarbonization, commissioning, and sustainable design. Their comprehensive approach, experienced staff, and track record of successful projects make them a trusted choice for building owners seeking to optimize the performance and sustainability of their properties.

COMPANY HISTORY

CxGBS® was co-founded in 2002 by Christine Miley and H. Jay Enck, two individuals with a passion for creating high-performing buildings that are cost-effective, energy-efficient, and provide excellent environments for occupants. However, their involvement in the field of high-performing facilities began even before the establishment of CxGBS.

Christine Miley, the chief executive officer of CxGBS, started her career in the hotel industry, where she quickly learned the importance of prioritizing client needs and tailoring the client experience accordingly. She also recognized the significant impact that high-performing buildings can have on both the customer experience and the bottom line.

On the other hand, Jay Enck, the chief technical officer of CxGBS, embarked on his professional journey in building performance during his college years. His senior project involved an energy recovery project for a carpet cleaning plant, which ignited his interest in buildings, their construction, and their performance. The fuel shortages experienced during the oil embargo of 1973 further fueled his sense of urgency and dedication to improving building performance.

Having dedicated their careers to the creation of exceptional buildings, Christine and Jay developed a proprietary commissioning process called Holistic Commissioning® soon after founding CxGBS. This unique process goes beyond the traditional industry model by not only addressing the interaction between the building's mechanical, electrical, and plumbing systems but also incorporating considerations for the building's enclosure, sustainability goals, and project-specific requirements.

CxGBS has assembled a highly skilled team consisting of professional engineers, architects, project managers, LEED® accredited professionals, and certified commissioning providers. This team is committed to meeting the goals of their clients and delivering high levels of value and service. Guided by the principles of conservatism and ethics, CxGBS has established itself as an industry leader and a pioneer in setting trends.

With over forty years of combined experience and expertise, Christine and Jay have shaped CxGBS into a trusted consultancy firm that prioritizes the creation of exceptional buildings through their holistic approach to commissioning and sustainable design.

CxGBS IS A WOMAN-OWNED SMALL BUSINESS

CORPORATE STRUCTURE

CxGBS is a Georgia Corporation, since 2002

CORPORATE HQ

ATLANTA, GA 30354

BRANCH OFFICES LOCATED IN

- ***Jackson, MS***
- ***Austin, TX***
- ***East Berlin, PA***

INSURANCE COVERAGE

Commercial General Liability Ins.:

- $1,000,000 per occurrence and
- $2,000,000 aggregate

Automobile Liability Ins.:

- $1,000,000 for combined single limit

Workers' Compensation & Employer's Liability Ins.:

- $1,000,000 per occurrence

Professional Liability Ins.:

- $2,000,000 per occurrence

PROFESSIONAL CERTIFICATIONS

- Certified Commissioning Firm (CCF)
- Accredited American Institute of Architects (AIA)
- ASHRAE Commissioning Process Management Professional (CPMP)
- ASHRAE Building Energy Assessment Professional (BEAP)
- ASHRAE High Performance Building Design Professional (HBDP)
- ASHRAE Building Commissioning Professional (BCxP)
- Building Commissioning Association Certified Commissioning Provider (CCP)
- University of Wisconsin Commissioning Process Authority Professional (CxAP)
- USGBC LEED Accredited Building Design and Construction Professional (LEED AP BD+C)
- USGBC LEED Accredited Existing Building Operations & Maintenance (LEED EBOM)
- USGBC LEED Accredited
- USGBC LEED Fellow
- Occupational Safety and Health Administration (OSHA)
- Certified Lighting Consultant (LC)
- Professional Engineers (P.E.)
- Engineers-in-Training (EIT)
- NGBS Green Verifier
- Certified Building Enclosure Commissioning Provider (CBECxP)

BUILDING COMMISSIONING SERVICES

COMMISSIONING TASKS BY SERVICE

SERVICES	Holistic Commissioning	Fundamental Commissioning for LEED (EA Prerequisite 1)	Enhanced Commissioning for LEED (EA Credit 3)	Retro Commissioning	Monitoring Based Commissioning*
Owner's Project Requirements (OPR) / (CFR)	• Develop OPR	• Review OPR	• Review OPR	• Develop CFR	• Develop CFR
Commissioning Plan	•	•	•	•	•
Performance Assessment of Existing				•	•
Review of Basis of Design Documentation	•	•	•	If available	If available
Design Phase Commissioning Scoping Mtg.	•		•		•
Develop Commissioning Specifications	•	•	•	Optional	Optional
Design Reviews					
Building Enclosure	• **	•	•	Optional	
Mechanical/Plumbing Systems	•	•	•	•	•
Lighting Controls	•	•	•	Optional	•
Electrical Distribution System	•	•	•	Optional	•
Other Identified Systems***	•			Optional	•
Develop and Implement Commissioning Plan	•	•	•	•	•
Develop Commissioning Checklists	•	•	•	•	•
Review Submittals	•		•	If available	If available
Site Observations and Field Reports	•	•	•	•	•
Issues and Benefits Log	•	•	•	•	•
Develop Performance Tests					
Building Enclosure	•		EA3 v4 Optional	Optional	
Mechanical/Plumbing Systems	•	•	•	•	•
Lighting Controls	•	•	•	Optional	•
Electrical Distribution System	•	•	•	Optional	•
Other Identified Systems***	•			Optional	
Witness Functional Performance Tests					
Building Enclosure	•		EA3 v4 Optional	Optional	
Mechanical/Plumbing Systems	•	•	•	•	•
Lighting Controls	•	•	•	Optional	•
Electrical Distribution Systems	•	•	•	Optional	•
Other Identified Systems***	•			Optional	
BAS Data Collection and Analysis	•			•	•
Measurement and Verification	•		EA3 v4 Optional		•
Review O&M Manuals	•		•	If available	If available
Coordinate, Witness, and Document Training	•		•	•	• ****
Systems Manual (SM)/ Cx Report (CR)	• SM	• SM	• SM	• CR	• CR
Warranty Phase	•		•	Optional	

** Meets LEED v4 Monitoring-Based Commissioning Requirements*
*** Meets LEED v4 Building Enclosure Commissioning Requirements*
**** Security, Access, Voice/Data, Electronic Technologies*
***** Evaluates Operator Understanding of Building Operations and Identifies Areas for Additional Training*

Holistic Commissioning® (HCx)

Holistic Commissioning®, developed by CxGBS®, is a proprietary approach that aims to achieve sustainability and high performance in both new and existing facilities. This comprehensive process covers the entire project lifecycle, from pre-design to occupancy. Holistic Commissioning takes into account the specific building attributes identified by stakeholders as essential to effectively and efficiently support their mission, enhance occupant satisfaction, optimize financial return on investment, and achieve environmental goals throughout the building's lifespan.

What sets Holistic Commissioning apart is its all-encompassing nature. It goes beyond the conventional industry model by not only addressing the interactions between a building's mechanical, electrical, and plumbing systems but also considering other critical factors. These factors include the building's enclosure (such as its insulation and air sealing), sustainability objectives, and unique requirements specific to each project.

By adopting the Holistic Commissioning approach, CxGBS aims to create buildings that perform optimally, reduce energy consumption, enhance occupant comfort and well-being, and minimize environmental impact. This process ensures that all aspects of the building's design, construction, and operation are seamlessly integrated and aligned with the stakeholders' goals and the project's sustainability objectives.

Retro-Commissioning (RCx)

Retro-commissioning is a specialized service offered by CxGBS that focuses on improving the functioning and performance of existing buildings. It involves applying the commissioning process to identify and address issues with building equipment and systems, aiming to optimize their operation and achieve better overall performance.

The primary goal of retro-commissioning is to resolve problems that may have arisen during the design or construction phase of the building or have developed over time. By thoroughly assessing and analyzing the building's systems, CxGBS can identify areas where improvements can be made to enhance functionality, energy efficiency, occupant comfort, and operational effectiveness.

Through retro-commissioning, CxGBS can identify opportunities to optimize operations and maintenance (O&M) procedures within the building. By improving these procedures, the overall performance of the building can be enhanced, leading to cost savings, improved occupant satisfaction, and a more sustainable and efficient operation.

Retro-commissioning is a valuable service for building owners and operators who want to maximize the performance of their existing facilities. By identifying and addressing operational inefficiencies, CxGBS helps clients improve the functionality, energy efficiency, and overall performance of their buildings, leading to a better working environment and reduced operational costs.

Fundamental Commissioning | Enhanced Commissioning

CxGBS offers both Fundamental and Enhanced Commissioning services, specifically tailored to meet the requirements of LEED® Certification.

Fundamental Commissioning is a prerequisite in the LEED Rating Systems, focusing on the construction phase of the project. It primarily addresses the mechanical, electrical, and plumbing (MEP) systems, lighting controls, and alternative energy systems. CxGBS ensures that these systems are properly installed, calibrated, and functioning as intended. By conducting rigorous testing and verification, they help ensure the efficient and effective operation of these systems, which contributes to the overall sustainability and performance goals of the project.

In addition to Fundamental Commissioning, CxGBS offers Enhanced Commissioning services that encompass a more comprehensive scope. Enhanced Commissioning covers not only the construction phase but also extends to the design phase and the warranty phase of the project. This broader approach includes thorough documentation reviews, design assistance, construction phase commissioning, verification of installation and performance, and even the warranty period support.

As part of Enhanced Commissioning, CxGBS also provides O&M (Operations and Maintenance) training to the building operators and stakeholders. This training ensures that the building's systems are operated and maintained correctly, allowing for optimal performance and energy efficiency over the long term. Furthermore, CxGBS delivers a Systems Manual, which provides detailed information and guidance on the operation, maintenance, and troubleshooting of the commissioned systems.

By offering both Fundamental and Enhanced Commissioning services, CxGBS enables clients pursuing LEED Certification to meet the necessary commissioning requirements. Their expertise and meticulous approach help ensure that the building's systems are commissioned, tested, and optimized to meet sustainability objectives, improve energy performance, and provide a high-quality indoor environment.

Building Enclosure Commissioning (BECx)

CxGBS recognizes the critical role that the building enclosure plays in creating healthy and high-performing buildings. The design of the building enclosure directly impacts its ability to keep the weather elements out, facilitate the entry of natural daylight to reduce reliance on artificial lighting, determine the sizing requirements for heating, ventilation, and air conditioning (HVAC) systems, and influence the overall operational costs of the building.

In their services, CxGBS emphasizes building enclosure commissioning, which goes beyond individual enclosure assemblies like the roof, fenestration (windows and doors), and exterior wall assemblies. Building enclosure commissioning involves evaluating the interactions between the building enclosure and HVAC systems.

By thoroughly assessing the performance and integration of the building enclosure with the HVAC systems, CxGBS ensures that the two components work together harmoniously. This coordination is vital for achieving optimal energy efficiency, occupant comfort, and overall building performance. Building enclosure commissioning also helps identify any potential issues or deficiencies in the enclosure's design or construction, allowing for timely corrections and improvements.

CxGBS's expertise in building enclosure commissioning enables them to provide comprehensive solutions that enhance the performance and functionality of buildings. Through their services, they help clients optimize energy usage, reduce operational costs, promote occupant well-being, and create sustainable and resilient building environments.

Monitoring-Based Commissioning (MBCx)

CxGBS offers ongoing, monitoring-based commissioning services that utilize information technology to collect and analyze building performance data. This phase of the commissioning process is crucial as it allows for continuous tracking of facility performance and identification of factors that affect building performance and occupant satisfaction.

Through ongoing, monitoring-based commissioning, CxGBS can quickly identify any degradation in system performance or components. By continuously monitoring the building systems in real time, they can detect deviations or inefficiencies that may arise over time. This proactive approach enables reliability-centered maintenance, where maintenance activities are targeted based on actual system performance rather than arbitrary schedules. This optimization of maintenance efforts can lead to cost savings and improved operational efficiency.

Moreover, ongoing, monitoring-based commissioning empowers facility management staff by providing diagnostic analyses and actionable insights in real time. This capability reduces troubleshooting efforts and enhances the efficiency of operations and maintenance (O&M) teams. By rapidly identifying and addressing performance issues, CxGBS helps streamline maintenance processes, minimize downtime, and optimize system performance.

By leveraging information technology and data-driven analysis, CxGBS's ongoing, monitoring-based commissioning services ensure that building systems continue to operate optimally throughout their lifespan. This proactive approach to commissioning enhances the reliability, efficiency, and cost-effectiveness of facility operations while improving occupant comfort and satisfaction.

Smoke Control Systems Testing

CxGBS performs NFPA 92 smoke control testing which includes smoke evacuation and stairwell pressurization systems testing. Smoke evaluation is conducted using hot smoke that simulates the plume of a real fire. During design, CxGBS reviews the placement of the smoke evacuation inlets to evaluate if smoke will be held above the path of egress and the distribution of makeup air for the effectiveness of smoke removal. CxGBS also evaluates the air distribution in egress stairways that provide stairwell pressurization and stairwell door operation.

Prior to the State Fire Marshal site visit, CxGBS assists contractors by conducting testing to help ensure systems perform as intended in the event of a fire. During this testing, CxGBS works in collaboration with the mechanical designer and related contractors to test that all components of the smoke control systems operate within the allowed time period required by the contract documents, NFPA 92, local, and state codes. CxGBS provides a Fire Protection Engineer to witness the testing and certify the documentation to be provided to the State Fire Marshal as required to obtain a Certificate of Occupancy.

SUSTAINABLE BUILDING/PERFORMANCE CONSULTING SERVICES

Sustainable Building Performance Consulting

CxGBS® professionals document owners' goals and requirements to show how sustainable principles can blend with stated objectives to set the foundation for integrated design and project delivery. Our experienced staff members work in collaboration with the project teams to identify high-performing building concepts that are realistic and cost effective, and we provide life cycle and cost benefit analyses of various approaches to help teams select the most appropriate products, materials, and design alternatives.

LEED Certification Guidance

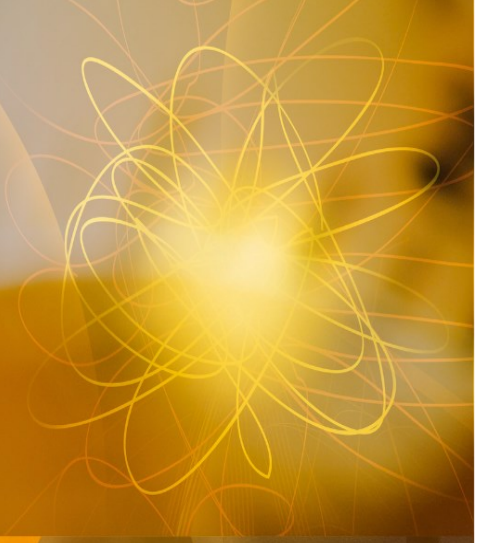
With a 100 percent certification success rate, CxGBS is a recognized national leader in the application of LEED® principles. With many years spent as Technical Advisors to the US Green Building Council (USGBC) and Green Business Certification Institute (GBCI), we assist owners and teams in successfully integrating sustainable, healthy, and high-performing building principles into their projects. We are proud to have multiple LEED "firsts" in our experience: first office building in the southeast, first middle school, first theater, and first carpet recycling plant.

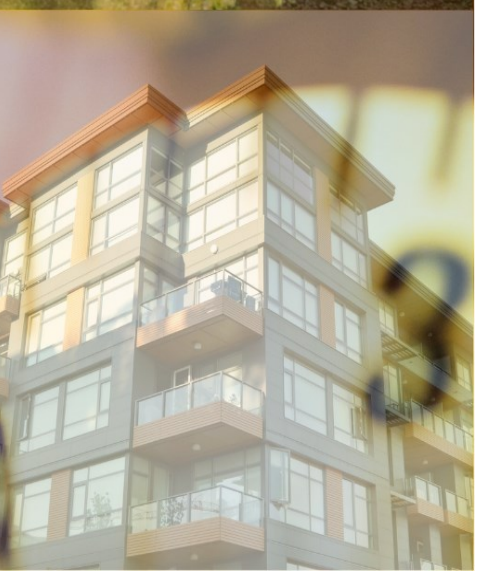
Decarbonization

CxGBS are experts in the decarbonization of buildings. CxGBS provides strategies that reduce carbon footprints for new and existing buildings by evaluating the basis of design for new buildings and the operating conditions of existing buildings. Based on our evaluations, we provide practical, proven strategies and technologies for the Owner's team to consider implementing. Our strategies typically provided lower 1st costs in new and renovated building projects, reductions in carbon emissions, and ongoing operating costs.

For newly occupied and existing buildings, we provide the Owner's Management and Operations Team with practical, proven strategies that improve indoor air quality, occupant satisfaction, and operational efficiencies, lowering carbon emissions, operating costs, and utility consumption.

CxGBS also offers ongoing evaluations to assist owners with continuous improvement needed to attain perpetual performance and reduce their carbon footprints utilizing cost-effective technological advancements lowering building energy requirements while providing excellent returns on investments.





OTHER BUILDING SCIENCE CONSULTING SERVICES

Building Forensic Investigations

Building forensics is the science and art of identifying the causes and problems affecting buildings, such as material deterioration, mold, moisture intrusion, poor indoor environmental quality, and high utility consumption. CxGBS® offers investigative services and cost-effective remedial recommendations that can significantly reduce the risk of recurrence. With our knowledge of design, construction, and operation of the building's systems, we are equipped to recognize the cause of problems, identify contributing factors, and provide solutions.

Building Condition Assessments

To assist our clients in the evaluation of their assets, CxGBS provides building evaluation report services. Traditional building evaluation reports provide detailed descriptions of the overall facility and systems, such as grounds, building exterior, building interior, universal access, structural systems, mechanical systems, electrical systems, fire protection systems, and elevators. CxGBS adds projected energy costs to provide a more comprehensive cost of ownership when purchasing or operating a building.

Energy Audits

CxGBS provides investigation and analysis of facilities to determine current energy efficiency of a building and identify potential improvements at the level required by the client. Our knowledge of design, construction, and operation of the building systems enables us to recognize the cause of problems, identify contributing factors, and provide solutions to increase building efficiency. CxGBS follows ASHRAE Energy Audits (Levels I, II, and III) protocol to meet a client's needs.

Measurement and Verification (M&V)

M&V services establish a baseline energy use of a new facility or to help determine the actual savings of energy efficiency measures installed in an existing building. The baseline is then used as a benchmark to assess future facility energy and water use. When used to evaluate energy efficiency measures that have been implemented in an existing building, measurement and verification not only allows facility managers to compare projected versus actual consumption of improved systems, but it can also improve credibility of energy projections, provide enhanced financing, or document the performance of performance-based contracts.

Energy Modeling

Energy Modeling is a software simulation model that calculates a proposed design's predicted energy consumption and costs. CxGBS staff have been performing energy modeling since 1980 on thousands of buildings, ranging from custom residential to high-tech research laboratories and manufacturing facilities. Our experience is in both new and existing buildings, providing owners with economic comparisons associated with design trade-offs, all while keeping projects in budget. Because of our extensive Energy Modeling experience, we are also able to afford our clients the added benefit of estimating energy usages during project design charrettes that are very close to the predicted energy usages that well-developed energy models provide.

PROJECT DOCUMENTATION ACCESS

Commissioning is a critical and ongoing process that serves as the continuous thread of communication throughout the life of a building. It involves verifying and optimizing the operation of facility systems, generating a substantial volume of data. To streamline this process and enhance collaboration among team members, CxGBS employs a web-based collaboration tool that facilitates the download and upload of documents.

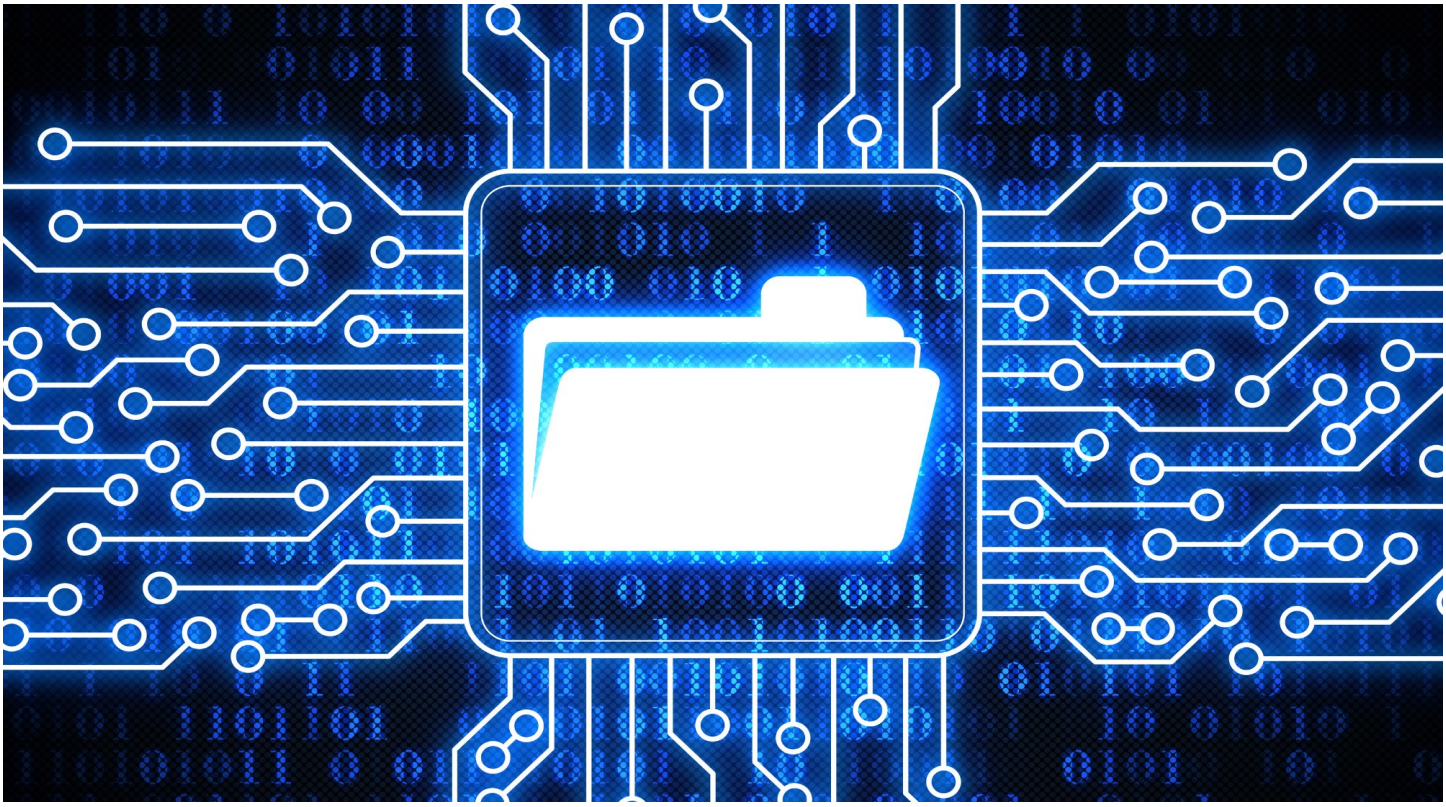
By utilizing a web-based collaboration tool, CxGBS improves the efficiency of communication and documentation for all stakeholders involved in the commissioning process. This technology enables seamless sharing of relevant documents, reports, and data among team members, reducing the time and potential errors associated with traditional methods of communication.

The web-based collaboration tool not only enhances the speed and accuracy of information exchange but also promotes effective collaboration among project team members. It ensures that everyone has access to the latest updates and can contribute to the commissioning process in a coordinated and efficient manner.

Overall, CxGBS recognizes the importance of efficient communication and documentation in commissioning projects. By leveraging technology and utilizing a web-based collaboration tool, they enhance the productivity and effectiveness of the commissioning process, allowing for improved data management, streamlined communication, and enhanced collaboration among all stakeholders involved in the project.

Documents residing in this portal include:

- OPR and Basis of Design
- Submittal Reviews
- Issues Logs
- Field Reports
- Functional Testing Data
- Progress Reports
- Pre-functional Commissioning Checklists
- Project Plans/Schedules/Milestones
- Systems Manual



CxGBS Principals

CHRISTINE MILEY

LEED AP, Energy Auditor
Co-Founder/Chief Executive Officer

Christine Miley is an accomplished businesswoman and the co-founder and chief executive officer of Commissioning & Green Building Solutions, Inc. (CxGBS®). With a diverse career spanning various industries, Ms. Miley has acquired expertise in management, construction, client relations, employee development, human resources, and program training.

Ms. Miley's professional journey includes operating her own construction company, where she gained hands-on experience in project management and coordination of major renovations. She has also worked in the nonprofit sector, providing outreach, membership, and training services for twenty-five counties. Additionally, she served as the operations officer for a design-build company, further expanding her knowledge of the construction industry.

With extensive experience in the hospitality sector, Ms. Miley has a deep understanding of all aspects of the industry, including staffing, accounting, guest services, operations, purchasing, and managing major renovations. Her diverse background has equipped her with a well-rounded perspective on business operations and client satisfaction.

Since co-founding CxGBS, Ms. Miley has been dedicated to establishing a model of excellence that delivers high-quality results for clients and employees. Her passion for sustainability and community engagement is evident through her involvement in various organizations and initiatives. She has served as the past chair of the High Performance Healthy Schools Committee of the USGBC Georgia Chapter. She has also been actively involved with the Girl Scouts of the USA, Boys/Girls Clubs, the National Association of Women in Construction, and the Crawford W. Long Museum, where she played a key role in a significant facility renovation project.

Ms. Miley's commitment to sustainability is further demonstrated by her accomplishments in developing green operations policies and plans. She created the first USGBC-approved Policy and Plan for Green Operations in the Southeast, which was successfully implemented by the Arthur M. Blank Family Office. In addition, she worked on curriculum development to create CxGBS School, an educational program that provides hands-on exploration of sustainable topics for grades 6–12.

Ms. Miley's dedication to professional growth and expertise is evident through her certifications as a California energy auditor and LEED® AP (Accredited Professional). These credentials highlight her commitment to staying at the forefront of industry standards and best practices.

Throughout her career, Ms. Miley has exhibited strong leadership, a passion for sustainability, and a drive for delivering exceptional results. Her extensive experience and diverse skill set contribute to the success and reputation of CxGBS as a leader in the field of commissioning and sustainable design.

H. JAY ENCK

HBDP, BEAP, BCxP, LEED AP BC+C, LEED Fellow
Co-Founder/Chief Technical Officer

Jay Enck is a distinguished figure in the field of commissioning, operational efficiencies, building forensics, green design, and sustainable development. As the co-founder and chief technical officer of Commissioning & Green Building Solutions, Inc. (CxGBS®), Mr. Enck brings a wealth of experience and expertise to the company.

With a track record of conducting commissioning processes for over $5 billion in construction and assisting teams in achieving LEED certification for more than fifty projects, Jay has established himself as an innovative leader in the industry. His valuable contributions have made him a trusted partner to organizations such as the US Green Building Council (USGBC), the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), and the National Institute of Building Sciences.

Mr. Encks involvement in the industry extends beyond his role at CxGBS. He was the founding director of the Atlanta Regional USGBC Chapter (now known as the Georgia Chapter) and the Southeast Regional Chapter of the Building Commissioning Association. He also co-founded the Building Enclosure and Commissioning (BECx) Collaborative, showcasing his commitment to advancing industry knowledge and collaboration.

As a recognized expert, Mr. Enck has contributed to and co-authored numerous industry standards and guidelines. He has played an integral role in the development of the LEED rating systems and professional exams, serving on USGBC Technical Advisory Groups and contributing to LEEDv4 commissioning requirements. Jay's contributions have been acknowledged by his peers, and he has been honored with the distinguished designation of LEED Fellow.

Mr. Enck's involvement with ASHRAE has been extensive, where he has served as a founding member, chair, vice chair, or voting member on various committees and project groups. He has contributed significantly to the development of ASHRAE guidelines, notably co-editing and co-authoring multiple editions of the ASHRAE Green Guide. Currently, he serves as the chair of ASHRAE SSPC 300 "Commissioning," overseeing the development and maintenance of commissioning guidelines.

Additionally, Jay has co-authored several Advanced Energy Design Guides and played a key role in the development of the National Institute of Building Sciences' Building Envelope Commissioning guidelines. His expertise is further reflected in his authorship of the IFMA Sustainability How-To Guide: Commissioning for Existing Buildings and his contributions to the Georgia Institute of Technology's "Yellow Book" related to sustainable development principles.

Mr. Enck's significant contributions, leadership, and expertise have positioned him as a respected authority in the field of commissioning and sustainable design. His work with CxGBS and various industry organizations has helped shape industry standards, advance knowledge, and promote the adoption of sustainable practices in the built environment.

CLIENT SAMPLE LIST

AFLAC

ARTHUR M. BLANK/AMB, LLC

ASHRAE

ATHENS-CLARKE COUNTY GOVERNMENT

ATLANTA BOTANICAL GARDEN

ATLANTA PUBLIC SCHOOLS

BEST BUY

BOARD OF REGENTS, UNIVERSITY SYSTEM OF GEORGIA

CHARLESTON COUNTY SCHOOL DISTRICT

CHEROKEE COUNTY BOARD OF COMMISSIONERS

CITY OF ATLANTA

COCA-COLA BOTTLING COMPANY UNITED

DEPARTMENT OF AGRICULTURE

DEPARTMENT OF DEFENSE

DEPARTMENT OF ENERGY

DEPARTMENT OF HOMELAND SECURITY

EMORY UNIVERSITY

FULTON COUNTY SCHOOLS

GARDNER SPENCER SMITH TENCH & JARBEAU ARCHITECTS

GENERAL SERVICES ADMINISTRATION

GEORGIA GWINNETT COLLEGE

GEORGIA DEPARTMENT OF NATURAL RESOURCES

GEORGIA INSTITUE OF TECHNOLOGY

GEORGIA SOUTHERN UNIVERSITY

GEORGIA STATE FINANCING & INVESTMENT COMMISSION

GRADY MEDICAL CENTER

KIAWAH DEVELOPMENT PARTNERS

KOHL'S DEPARTMENT STORE

MISSISSIPPI CHILDREN'S MUSEUM

NATIONAL RENEWABLE ENERGY LABORATORY

NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND

PEPSI-COLA BOTTLING GROUP

STEVENS & WILKINSON (fka RICHARD WITTSCHIEBE HAND)

SHAW INDUSTRIES

SPELMAN COLLEGE

STATE OF MISSISSIPPI BUREAU OF BUILDINGS

STATE OF TENNESSEE BOARD OF EDUCATION

TENNESSEE VALLEY AUTHORITY

TEXAS A&M UNIVERSITY

TOLL BROTHERS

TURNER CONSTRUCTION

WHOLE FOODS

SELECTED COMMERCIAL PROJECT EXPERIENCE

ARTHUR M. BLANK FOUNDATION
Atlanta, Georgia

CxGBS® provided Sustainable Development Design Services, including Energy Modeling, LEED® Certification Administration, Holistic Commissioning®, and Green Operating Policies and Procedures for Operations and Maintenance for the first LEED Gold certified office building in Georgia. The Arthur M. Blank Family Office in Atlanta is a 98,000 SF Class A office and conference facility, demonstrating the Blank family's commitment to the earth's natural resources and ensuring a healthy, comfortable, and safe environment for all who enter.

KIAWAH RIVER COURSE CLUBHOUSE
Kiawah Island, South Carolina

The newly redesigned Kiawah River Course Clubhouse on Kiawah Island is an essential meeting place in the South Carolina community. Low Country palates and regional materials reflect the indigenous beauty of the landscape. The facility includes a restaurant, fitness & spa, locker rooms, and a pro shop. CxGBS commissioned the building enclosure, HVAC, HVAC controls, plumbing systems, conditioned wine cellar, and commercial kitchen for the 50,000 SF facility during the construction phase of the project. The collaborative effort with the project team helped to resolve issues quickly in order to meet the scheduled opening.

THE BALZER THEATER AT HERREN'S
Atlanta, Georgia

CxGBS provided Sustainable Design Consulting, LEED Certification Administration and Energy Modeling, and Holistic Commissioning for the Balzer Theater at Herren's. The new home of Atlanta's Theatrical Outlet is a $5 million renovation of the historic Herren's Restaurant, a fixture in downtown Atlanta from 1934–1987. The theater is a model of environmentally sound construction with healthy indoor air and minimal impact on the environment. It is the first theater in the country to receive LEED certification and is the first commercial use of rainwater collection for toilet flushing in Atlanta. The project is also a recipient of an Urban Land Institute (ULI) Development of Excellence Award.

NOTION APARTMENT COMPLEX
Decatur, Georgia

This 374,903 SF luxury apartment complex features a mixed-use community. It features a 13-story Prescient tower, two five-story wood framed buildings, and a seven-story—540 car parking garage, 319 residential units, and 30,000 SF interior service and retail space. Special features include an exterior pool, fitness center, a sky lounge, and a dog park.

CxGBS provide 100% Holistic commissioning of the building enclosure, which included the roof drainage systems, exterior skin, above and below grade walls, slab on grade vapor barriers, exterior doors and windows during the construction and warranty phases on the project.

SELECTED INDUSTRIAL PROJECT EXPERIENCE

SHAW INDUSTRIES T-1 CARPET TILE PLANT
Adairsville, Georgia

This 675,000 SF facility contains 15,000 SF of office space and 660,000 SF of manufacturing and warehouse space. Further, it is surrounded by a combination of insulated pre-cast wall panels in the warehouse. But the office area is built by light-gauge steel framing, masonry-clad cavity walls.
Mechanical systems included VAV rooftop units and fan-powered terminal units. Electrical and lighting included emergency power generators, switchboards/distribution panels.
CxGBS provided energy modeling, LEED project administration, and Holistic commissioning to the building enclosure, HVAC and controls, plumbing, electrical, and lighting from Design—Warranty phases and M&V.

RECLAIM 2 ENERGY, SHAW PLANT R2-SHAW INDUSTERIES
Dalton, Georgia

Shaw built a new 33,500 SF Reclaim-to-Energy plant that repurposes post-industrial and post-consumer carpet waste into energy. By-product carpet scraps from Shaw's production facilities are combined with carpet collected from Shaw's post-consumer carpet reclamation network, shredded, and processed to generate steam and electricity through a "CAAF" (Carpet as Alternative Fuel) process.
Currently, the Reclaim-to-Energy plant is converting about 42,000 tons of post-industrial and post-consumer waste annually. This results in about $99,485 in energy savings annually and allows Shaw to address three main priorities: energy cost stability, landfill diversion, and growth of their post-consumer carpet reclamation network.

PEPSI BOTTLING CO. STONE MOUNTAIN FACILITY EXPANSION
Stone Mountain, Georgia

CxGBS was contracted by CHA Tech Services, LLC as the Commissioning Authority (CxA) to coordinate the commissioning effort for the Pepsi Facility Expansion. The work scope was to provide construction phase commissioning to help ensure optimum quality for mechanical and electrical systems.

CxGBS observed issues with temperature control for office and lab areas. The system was controlled by the thermostat in the office area, which created the temperature issues in the lab area. Further, CxGBS worked with the O&M staff on the control system graphics to insure efficient operations and maintenance of the facility.

COCA-COLA BOTTLING COMPANY UNITED WAREHOUSE
Tifton, Georgia

The 343,000 SF facility, which also includes a warehouse, fleet shop, administrative offices, and meeting space, is home to the latest technology and state-of-the-art equipment used in the beverage industry. CxGBS® provided Holistic Commissioning® services for the Coca Cola Sales Center in Tifton, Georgia. The work scope was to provide commissioning to help ensure optimum quality for mechanical, electrical, and lighting systems through the construction, acceptance, and post-occupancy phases.
CxGBS observed issues with water heaters, the roof top units and the fan boxes within the building. Further, CxGBS identified a negative pressurized issue in the office, which was caused by a manufacturing sensor error.

SELECTED MUNICIPAL & STATE PROJECT EXPERIENCE

MISSISSIPPI CENTRAL CRIME LAB
Whitfield, Mississippi

This project entailed the construction of a new three-story, 92,200 square foot, $32 million Central Crime Lab facility. The brand new facility houses laboratory spaces to support criminalistics and analytical research, as well as the medical examiner's office and forensic labs. CxGBS® developed the owner's project requirements (OPR), conducted a design review of the construction documents, and performed construction phase commissioning. Systems commissioned included the building enclosure, HVAC, HVAC controls, plumbing, electrical, and lighting controls.

PUBLIC SAFETY HEADQUARTERS
Atlanta, Georgia

The City of Atlanta needed a space that could house both the Atlanta Fire Rescue and Police Department. Construction of the five-story building, along with a 500-car parking garage for City vehicles, included areas for administration, investigation, education, and recruiting for both organizations. With CxGBS's assistance, several sustainable development principals were implemented in the design and construction process to meet the city's goals. In accordance with the City of Atlanta's Greener City Initiatives, the building achieved LEED® Silver Certification.

MISSISSIPPI DEPARTMENT OF PUBLIC SAFETY DISTRICT 8 COMPLEX
Biloxi, Mississippi

CxGBS provided Holistic Commissioning®, including building enclosure and MEP, for this new 67,840 square foot public safety campus. The buildings house the State Crime Lab and Morgue, Bureau of Investigation, Bureau of Narcotics, State Highway Patrol, Department of Motor Vehicles, and Vehicle Storage and Maintenance. The facility required extensive pressure mapping to maintain specific indoor air quality requirements with strict humidity and temperature controls, as well as being designed to withstand 140 mph winds in order to support disaster response and recovery operations in the southeast.

Cherokee County Administration Building
Canton, Georgia

CxGBS began a relationship with Cherokee County by providing building forensics and commissioning on four of the county fire stations. After the stations were built, we were contracted to provide building forensics services to identify moisture intrusion in the buildings. After we commissioned the remediation to repair the buildings, we teamed with the county to commission an $18 million, three-story administration building and conference center, including an auditorium and 8,000+ SF of meeting space to host 575 visitors.

CxGBS services included LEED Project Administration and Holistic commissioning of the building enclosure, HVAC, HVAC controls, the plumbing, electrical, lighting, and lighting controls, during pre-design through warranty phases.

SELECTED HIGHER EDUCATION PROJECT EXPERIENCE

UNIVERSITY OF MISSISSIPPI MEDICAL CENTER SCHOOL OF MEDICINE

Jackson, Mississippi

CxGBS® provided Holistic Commissioning® of the building enclosure, HVAC, HVAC controls, plumbing, electrical, and lighting controls from pre-design through the construction and warranty phases for this new 151,570 square foot, five-story classroom building that houses the new School of Medicine. The facility includes lecture halls, classrooms, clinical skills areas, a training center, teaching laboratories (including an operating rooms simulation lab), offices, student support spaces, and other building support spaces.

FANT MEMORIAL LIBRARY
Mississippi University for Women

Columbus, Mississippi

This project involved the renovation and expansion of the two-story, 62,000 square foot library, providing additional space for meeting and classroom facilities, a multi-media lab/instructional center, and faculty and common areas, including a café. Originally built in 1969, improvements were made to meet the technological requirements of 21st century libraries: twenty-four-hour study rooms, archival processing, media listening/viewing rooms, special collection rooms, exhibit areas, and an automated storage and retrieval system. CxGBS® commissioned the building enclosure, mechanical, HVAC controls, plumbing, and electrical systems.

MISSION DEL PASO - EL PASO COMMUNITY COLLEGE

El Paso, Texas

El Paso Community College will accommodate future enrollment growth with the construction of a new 60,000 square foot building. This new facility on the Mission del Paso campus provides additional classroom space, offices, conference rooms, multipurpose space, science labs, support spaces, and a computer lab. It also includes a Flexitorium, a large, multi-purpose event and auditorium space. The Flexitorium will offer flexible seating arrangements and audio-visual equipment conducive to innovative teaching and special events. CxGBS is provided Holistic Commissioning® of the HVAC, HVAC controls, lighting, lighting controls, and domestic hot water systems during the construction and warranty phases.

GEORGIA INSTITUTE OF TECHNOLOGY
PRICE-GILBERT – CROSLAND TOWER

Atlanta, Georgia

The Price-Gilbert – Crosland Tower renewal project at Georgia Tech included the design and renovation of two existing, interconnected library buildings totaling approximately 230,000 square feet. Included in the library are teaching and collaboration spaces, computing spaces, offices, collections space, support space, and commons. CxGBS provided Holistic Commissioning of the building enclosure, HVAC, HVAC controls, plumbing, and electrical (power, lighting, voice/data/security, and access control) from schematic design through construction, warranty, and post-occupancy (first year) phases.

SELECTED HOSPITAL & MEDICAL PROJECT EXPERIENCE

BAYLOR SCOTT & WHITE MEDICAL CENTER
Austin, Texas

Baylor Scott & White Health continues to expand its presence in Austin, Texas, with the construction of its first medical center to serve the fast-growing population. The 90,000 square foot hospital and 41,000 square foot medical office building offers inpatient hospital services, as well as primary care and specialty care clinics. CxGBS® provided Holistic Commissioning® during the construction phase, including the HVAC, HVAC controls, lighting controls, service water heating, emergency power distribution, and elevator and HVAC interaction with the fire alarm system.

BAYLOR SCOTT & WHITE MEDICAL CENTER
Pflugerville, Texas

The three-story, 97,474 square foot Baylor Scott & White Medical Center in Pflugerville, Texas, is the first newly constructed hospital in Travis County. An innovative aspect of the Central Texas Health Hub Sites is the integration of a multi-specialty medical clinic in the hospital itself to support both inpatient and outpatient services. The facility includes multiple operating rooms, patient care areas, pharmaceutical areas, meeting rooms, offices, and support areas, such as restrooms and electrical rooms. CxGBS provided Holistic Commissioning during the construction phase, including the HVAC, HVAC controls, lighting controls, service water heating, emergency power distribution, and elevator and HVAC interaction with the fire alarm system.

BAYLOR SCOTT & WHITE – HILLCREST SPORTS MEDICINE
Waco, Texas

The new Hillcrest Sport Medicine and Orthopedics Center is a 104,730 square foot, four-story facility adjacent to the Hillcrest Medical Center in Waco, Texas. The facility includes a rehabilitation area, multiple operating rooms, patient care areas, meeting rooms, a small pharmacy area, offices, and support areas. A shell space is included on the fourth floor for future expansion of the facility. CxGBS provided Holistic Commissioning during the construction phase, including the HVAC, HVAC controls, lighting controls, service water heating, emergency power distribution, and elevator and HVAC interaction with the fire alarm system.

SHAW FAMILY HEALTH CENTER
Dalton, Georgia

The Shaw Family Health Center is a new, stand-alone health clinic providing primary care, health coaching, and physical therapy services for Shaw Industries employees in the local area. The facility is a single-story, 9,800 square foot building consisting of fifteen exam rooms, a procedure space, three health coach offices, a physical therapy suite, and a lab and testing area. Building mechanical systems that were commissioned by CxGBS included packaged rooftop unit heat pumps, split system heat pumps, and ductless slit systems. Electrical and lighting systems commissioned included switchboards and distribution panel boards, occupancy sensors, daylight sensors, lighting, and lighting controls.

SELECTED FEDERAL GOV'T PROJECT EXPERIENCE

UNITED STATES DIPLOMACY CENTER
Washington D.C.

The U.S. Diplomacy Center is a new, two-phase addition to the 1.5 million GSF Harry S. Truman building in Washington, DC. The building is owned by the General Services Administration and houses the U.S. Department of State. The U.S. Diplomacy Center is the first museum and education center dedicated to telling the story of diplomacy and the men and women who work 24/7 to serve U.S. national interests. Phase I included the glass pavilion and the first exhibit hall which houses interactive exhibits about international relations. Phase II included two additional halls—one featuring diplomatic history and another to be utilized as an educational center. This building was awarded the Best Government/Public Project in 2017.

DONALD STUART RUSSELL BUILDING
Spartanburg, South Carolina

This 56,000 SF building is used as a Federal Courthouse and post office. CxGBS is part of a retro-commissioning and energy audit IDIQ, which provided this Federal project. CxGBS scope of services included retro-commissioning planning, identifying energy and water conservation, scoping, testing, investigation, evaluation analysis, calculations, recommendation, and report writing services.

Results of the energy audit and retro-Cx process provide information used to develop low/no cost improvements. Additionally, the commissioning services rendered included HVAC, HVAC controls, plumbing, electrical, and lighting controls during the construction and warranty phases.

JOHN C. GODBOLD BUILDING
Atlanta, Georgia

The John C. Godbold Federal Building provides administrative office space for the 11th Circuit Court of Appeals. The building was created as an annex to the Tuttle Courthouse through the restoration and joining of two existing historic buildings in downtown Atlanta. The facility includes open office areas, private offices, workrooms, storage areas, and conference rooms. Retrofitting and combining these two buildings into a modern, efficient office space presented unique challenges.
CxGBS was tasked with reviewing bridging documents to ensure that they met the owner's requirements and reporting findings to Bridging Design Build Contractor. CxGBS® identified spaces in the building that were over-cooling and re-heating conditioned air. At the time, the building was not fully occupied, but the HVAC systems were configured to provide sufficient cooling for full occupancy. Thus, reducing energy and improving sustainable energy.

BELTSVILLE AGRICULTURAL RESEARCH CENTER
Beltsville, Maryland

CxGBS performed energy audits of four facilities at the Beltsville Agricultural Research Center. Additionally, retro-commissioning was performed on one existing research facility (Building 052) that had three growth chambers of which one was an indoor system and two were outdoor systems, as well as one being daylit and two others being soil bin chambers. CxGBS conducted evaluations of the three growth chamber systems in addition to the HVAC, lighting, and emergency power systems serving Building 052. CxGBS's evaluation consisted of measuring each system's performance through a series of test procedures that measured the amount of cooling delivered to each chamber. CxGBS also conducted measurements of the two outdoor systems to determine peak cooling load compared to the total cooling capacity of each chilled water system.

SELECTED DEPARTMENT OF DEFENSE PROJECT EXPERIENCE

BILLY JOHNSON DENTAL CLINIC
Fort Hood, Texas

This project was a renovation of an existing dental clinic in Fort Hood, Texas, modernizing the facility to provide dental health services to base personnel and their families. The facility includes dental surgical rooms, patient rooms, offices, conference rooms, and support areas. CxGBS® provided Holistic Commissioning® of the HVAC, HVAC controls, building automation system, lighting control system, domestic plumbing hot water system, plumbing, electrical, and renewable energy generation systems during the design, construction, and warranty phases per LEED® version 4.

MS ERDC MACHINE SHOP
Vicksburg, Mississippi

This 10,000 SF project completed in 2018 on the Vicksburg ERDC Campus. The Precision Machine Shop building provides heated and ventilated assembly bay and mechanical spaces along with air-conditioned support spaces. The facility is one story and includes an assembly bay, wood shop, office breakroom, and restrooms.

CxGBS provided commissioning services of the HVAC, HVAC controls, lighting controls, and domestic hot water during the construction and warranty phases. During those phases CxGBS identified many issues including the heat pump electric was not working, ventilation fan controls were not working, programmable thermostats were not programmed, smoke detection interlocks were not completed, and condensate was routed over an electrical panel.

MILITARY WORKING DOG KENNEL
Fort Worth, Texas

The 6,100 SF facility is a combination indoor/outdoor Military Working Dog (MWD) Kennel and MWD Support Facility with a covered walkway connecting the two facilities. The MWD Kennel supports the operations at the Naval Air Station Joint Reserve Base in Fort Worth, Texas.

The Naval Air Station Joint Reserve Base Fort Worth is a joint defense facility of the U.S. Army Corps of Engineers and plays a pivotal role in the training and equipping of air crews and aviation ground support personnel. CxGBS provided Holistic Commissioning the HVAC, HVAC controls, lighting controls, and the domestic hot water system for the MWD facility.

MARSHALL FLIGHT CENTER - ASTRIONICS LAB
Huntsville, Alabama

Built in 1957 and having undergone numerous renovations over the years, this 323,500 SF Astrionics Laboratory office and laboratory building was not meeting occupant or laboratory requirements to support the NASA mission. With significant moisture intrusion as well as indoor air quality issues, and with energy consumption levels three times that of comparable buildings on the Marshall Space Flight Center campus, CxGBS® was hired to reduce energy consumption and improve building performance to meet the NASA Mission.

SELECTED MONITORED-BASED COMMISSIONING EXPERIENCE

ALBRO-FALCONER-MANLEY SCIENCE CENTER

Atlanta, Georgia

The Albro-Falconer-Manley Science Center is a 154,000 SF, beautiful, state-of-the-art research and training facility on the campus of Spelman College. The building houses the biology, chemistry, physics, mathematics, and computer sciences departments. It is a site for intellectual exchange and scientific creativity. CxGBS® performed Retro-commissioning and Monitoring-based commissioning for this facility. During the investigation phase of the project, many issues were identified that caused unnecessary energy use within the facility. The monitoring-based commissioning provided information needed to lower costs of Ownership.

MISSISSIPPI STATE UNIVERSITY

Starkville, Mississippi

Since 2006, CxGBS has provided commissioning services for a variety of projects on Mississippi State University's 7 million SF campus located in Starkville, Mississippi. Services have included Holistic Commissioning, Building Enclosure Commissioning, Monitoring-Based Commissioning, Retro-Commissioning, Lighting and Lighting Controls Commissioning for both new construction and existing buildings. Among its many facilities, this campus includes: athletic centers and practice facilities, gymnasiums, coliseums, stadiums, field houses, dormitories, classroom buildings, administration buildings and a central plant. The largest single project on the campus is the Wise Veterinary Center, a 300,000 GSF complex for which CxGBS has performed services over multiple phases.

C3 ACADEMIC BUILDING—GA GWINNETT COLLEGE

Lawrenceville, Georgia

This new $10.7 million, three-story building houses classrooms, offices, and support functions. Surrounded by a combination of light-gauge steel frame, masonry-clad cavity wall, and curtain wall systems, the building mechanical systems included an air-cooled chiller, VAV rooftop units, and VAV fan-powered parallel terminal units. CxGBS perform Monitored-Based Commissioning and Holistic Commissioning on the building enclosure, HVAC, HVAC controls, plumbing, electrical, and lighting control systems during design, construction, and warranty phases.

ASHRAE HEADQUARTERS

Atlanta, Georgia

CxGBS was contracted by the American Society of Heating, Refrigeration & Air Conditioning Engineers (ASHRAE) to perform Retro-Commissioning, Measurement and Verification (M&V), and Monitoring-Based Commissioning on the Building Envelope, HVAC, HVAC Controls, Plumbing, Electrical & Renewable Energy Systems of this 33,570 SF facility.

GSA Contract Holder
Contract GS-21F-0069X

GSA CONTRACT INFORMATION

DUNS #	14-508-7602
Tax ID #	20-3671791
GSA Schedule	03FAC
GSA Contract	GS 21F-0069X
Unique Entity ID	HMNSNDKS31N6
Security Clearance	Department of Homeland Security NACI through 2026

Facilities Maintenance and Management

SIN 871-202	Energy Management Strategies
SIN 871-206	Building Commissioning Services
SIN 871-207	Energy Audit Services

NAICS Codes

541690e	Engineering Consulting Services
541330	Engineering Services
561210	Facilities Support Services
561990	All Other Support Services

CAGE Code 3XCQ5

NIGP Codes

91841	Energy Conservation Consulting
91842	Engineering Consulting
92507	HVAC Engineers
92534	Energy Management Engineering
92536	Engineering Services
92556	Inspecting, Structural/Engineering
96114	Commissioning of Facilities

PSC/FSC Codes

B540	Building Technology Studies
B543	Energy Studies
C213	Inspection Services
C219	Other A/E Services
R425	Engineering & Technical Services

References

Randy Turner
Project Manager, Mississippi Bureau of Buildings
(601) 359-5021
randy.turner@dfa.state.ms.us

Lindsey Cottingham
Project Manager, Georgia Institute of Technology
(404) 433-4268
lindsey.cottingham@facilities.gatech.edu

Nathan Carpenter
Project Manager, Georgia Gwinnett College
(678) 407-5819
ncarpenter@ggc.edu

Jay Lanning
Director of Facilities, AMB Foundation
(404) 367-2148
mlanning@ambfo.com

GENERAL SERVICES ADMINISTRATION PROJECT EXPERIENCE

SIDNEY R. YATES BUILDING RENOVATION

WASHINGTON, D.C.

This 190,000 SF building was originally constructed to house the Bureau of Engraving & Printing, the Sidney R. Yates Building has served as home to many different federal agencies over the past hundred years. Placed on the National Register of Historic Places in 1978, the building was modernized in the 1980s and in 1990 became the permanent home of the U.S. Forest Service.

CxGBS® provided enhanced commissioning services for the renovation of the Forest Service Headquarters which includes offices and a child development center. Working with the project team, CxGBS commissioned HVAC, HVAC controls, plumbing, electrical, and lighting control systems for this historical building.

The project presented constraints in terms of high but varied ceiling configurations, irregular and inconsistent floor plans, and challenges to preserve the historic structure. CxGBS worked with the mechanical and controls contractor to determine the cause of the control issues with the fan coil units, which were not activating with changes in temperature. Additionally, all work was completed within a tight seven-month renovation schedule.

HAROLD D. DONOHUE FEDERAL BUILDING & COURT HOUSE

Worcester, MA

General Services Administration (GSA) contracted CxGBS® through M. E. Group, Inc. to coordinate the retro-commissioning effort for the Harold D. Donohue Federal Office Building and Courthouse (DFB). Originally opened in 1932, the building has served the people of Worcester for over seventy-five years. It underwent its last major renovation in 1995. CxGBS investigated and providing recommendations for optimizing building performance through identifying energy efficiency improvements and demand reduction strategies, indoor air quality and occupant comfort improvements, and operational improvements. After thorough investigation and review of the systems in the building, CxGBS compiled a report detailing the retro-commissioning efforts, the calculated energy usage of the building, recommended strategies for energy reduction, and the estimated cost and energy savings of implementing the strategies.

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www.CxGBS.com

770-831-6760

770-831-6761

Sales@CxGBS.com

HEADQUARTERS

H. Jay Enck, CTO

HJEnck@CxGBS.com

100 Hartsfield Centre Parkway

Suite 500

Atlanta, GA 30354

PENNSYLVANIA BRANCH OFFICE

2200 Stoney Point Road

East Berlin, PA 17316

MISSISSIPPI BRANCH OFFICE

1000 Highland Colony Parkway

Building 5000, Suite 5203

Ridgeland, MS 39157

TEXAS BRANCH OFFICE

901 North Mopac Expressway South

Building 1, Suite 300

Austin, TX 78746