



EXPRESSION OF INTEREST

**Commissioning Services
WVARNG Buckhannon Readiness Center
Phase II Addition**

**West Virginia Department of Administration
West Virginia Army National Guard**

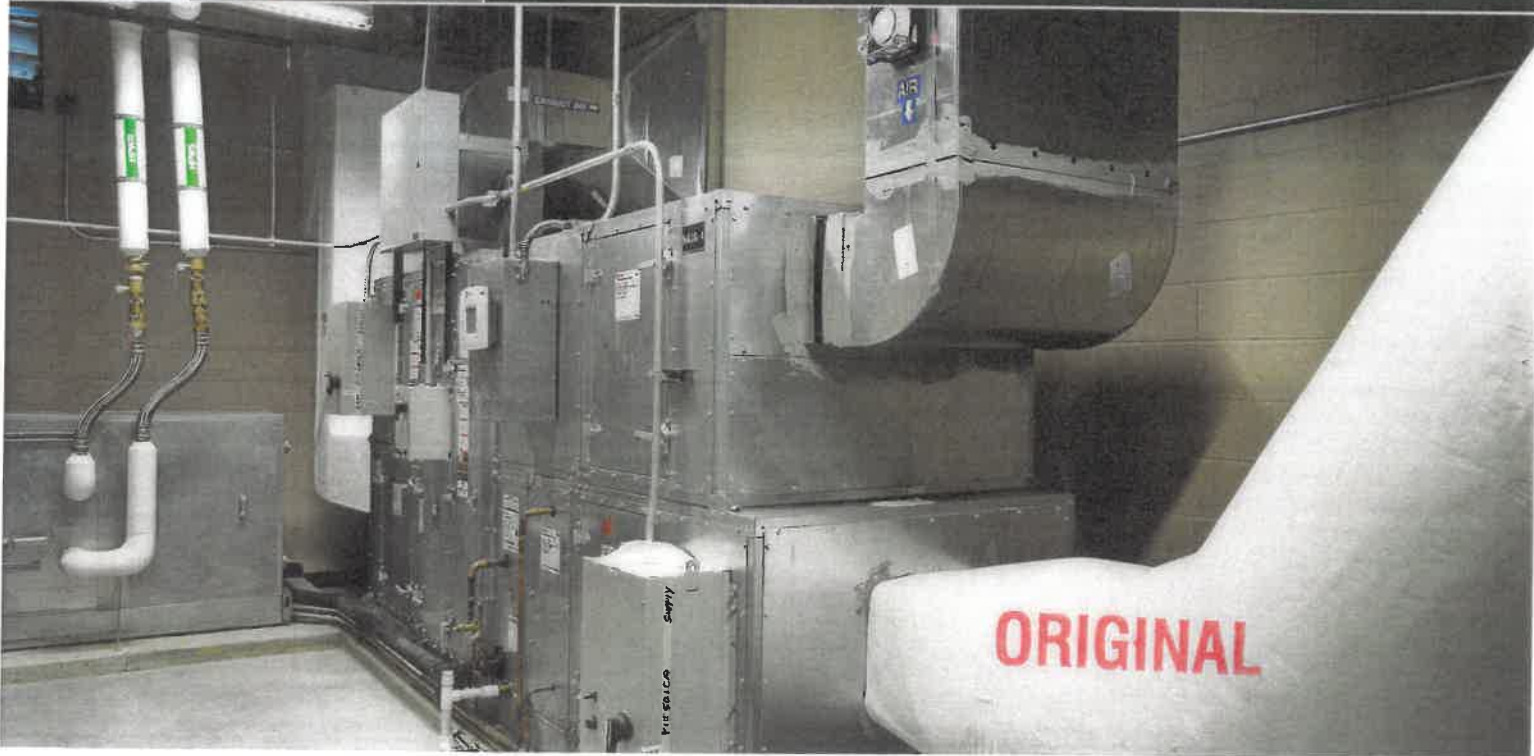
Solicitation No.:
CEOI ADJ210000006

September 3, 2020



engineering | architecture | geospatial

**GRW | 801 Corporate Drive
Lexington, KY 40503
859.223.3999**





engineering | architecture | geospatial

Expression of Interest

Commissioning Services

WVARNG Buckhannon Readiness Center Phase II Addition

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WV Department of Administration WV Army National Guard

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September 3, 2020

Ms. Tara Lyle, Buyer Supervisor
Department of Administration, Purchasing Division
State of West Virginia
2019 Washington Street East
Charleston, WV 25305-0130

**RE: Commissioning Services WVARNG Buckhannon Readiness Center Phase II Addition
Solicitation No.: CEOI 0603 ADJ2100000006**

Dear Ms. Lyle and Selection Committee Members:

Achieving the goals you've established for the Commissioning Services at the Buckhannon Readiness Center Phase II Addition is greatly dependent upon selecting the right A/E design partner. GRW would like to work with you on your project – and we believe we offer you the right experience and expertise to successfully deliver the results you require.

Experience and Familiarity. Our combined team of GRW and Facilities Commissioning Group (FCG), is ready begin this work. In addition to our experience and understanding of the requirements detailed in the Expression of Interest document, our team offers you previous commissioning work experience on Phase I of the Buckhannon Readiness Center. GRW is a full-service A/E design consulting firm that has been working with clients like you on similar projects throughout the region for more than 50 years. Our project team's experience with the National Guard in West Virginia is substantial (**Sections 1.0, 2.0, 3.0**)

GRW and its subsidiary Chapman Technical Group (offices in St. Albans and Buckhannon, WV) also have extensive experience in developing projects through the WV Purchasing Division. Our experience with the WVARNG and the State's Purchasing Division will help ensure effective and efficient project delivery.

We Are Committed to Your Success. Taking care to meet your goals for your budget and schedule is a priority, as it is on every GRW project. The ultimate measure of success is how well the completed projects meet your needs and aspirations. To this end, our project team is committed to establishing an inclusive, methodical and logical approach to the design process. **See Section 4.0.**

Thank you for your consideration and for the opportunity to work with you. We look forward to the next step in your selection process where we can present our additional ideas toward the successful completion of your project.

If you have questions about our qualifications or any other items, please feel free to call or email.

Respectfully submitted,

A handwritten signature in black ink that reads "William J. Maynard".

Monty Maynard, PE, LEED AP BD+C
GRW Senior Vice President

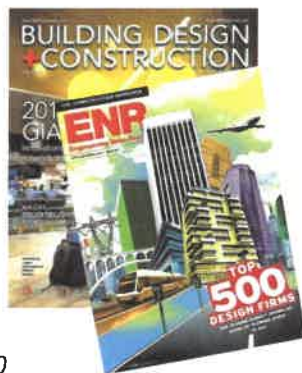
859-223-3999, ext. 262
mmaynard@grwinc.com

1.0 GRW Introduction

About GRW

Founded more than 50 years ago, GRW is an employee-owned architectural, engineering and geospatial services firm with more than 200 employees.

At GRW, we have the ability to address your projects from nearly every angle. Because of our in-house capabilities, we can more easily tailor our approach allowing our teams to deliver more quickly, with greater potential for more accurate cost estimates, and fewer change orders.

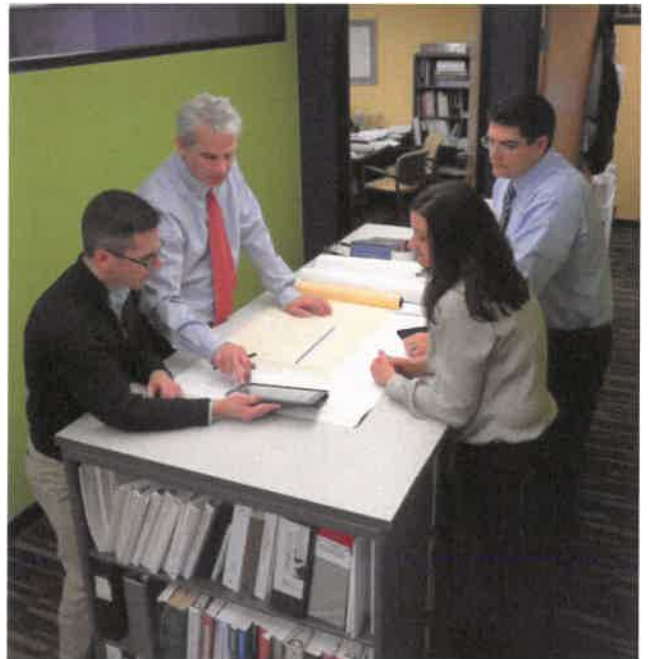


Among our achievements, GRW is listed in *Building Design and Construction's Giants 300*

report as one of the nation's top Architecture-Engineering firms. Also, since 1972, GRW also has been recognized nationally as a top producing firm by *Engineering News-Record*.

We Know West Virginia

GRW and its subsidiary **Chapman Technical Group** (offices in St. Albans, *at right*, and Buckhannon, WV) have extensive experience in developing projects through the WV Purchasing Division. For many years, we have designed, bid, and constructed numerous, major Division of Natural Resources projects throughout the state. The West Virginia Division of Highways (DOH) recently began working with the State's Purchasing Division for building projects, and our \$10 million equipment shop building for District One was the first project that the DOH bid through the WV Purchasing Division. Our knowledge and experience of the State's purchasing procedures made this an easy transition for all stakeholders. Although every agency has its own particulars with regard to bidding projects, our experience with the West Virginia Purchasing Division will help ensure effective and efficient project delivery.

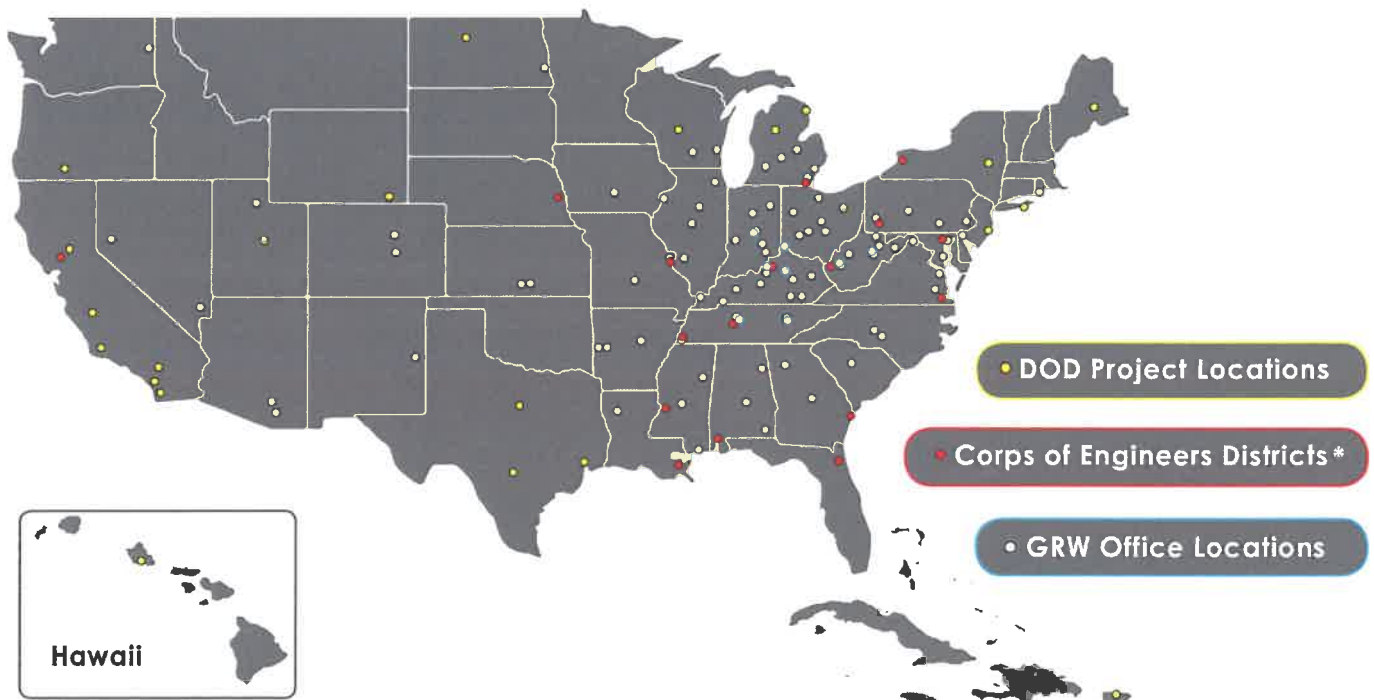


Department of Defense Experience

GRW brings to the table a wide ranging body of military experience that includes work for the National Guard, U.S. Army, U.S. Air Force, the U.S. Army Corps of Engineers, and the Naval Facilities Engineering Command (NAVFAC). These projects include renovation and new construction work, as well as military master plans, and a broad range of geospatial services.



The map below provides a general geographic overview of where we have provided services to the military.



* U.S. Army Corps of Engineers work encompasses multiple IDIQs and task orders in 18 Districts
OCONUS Locations: Kadena Air Base, Okinawa, Japan, and Camp Lemonnier, Djibouti

GRW's Experience: West Virginia National Guard – Partial List

GRW has a long history of experience with the West Virginia Army and Air National Guard. Details about several of these projects are shown in Section 2.0.

West Virginia ARNG Readiness Center Commissioning Projects, WV – LEED Fundamental

Commissioning for four building construction projects: Buckhannon AFRC - Phase I, 38,000 SF and \$13,150,000 construction cost; Morgantown Readiness Center, 58,520 SF and \$20,500,888 construction cost; Moorefield Readiness Center, 57,256 SF and \$17,725,351 construction cost; and Logan Readiness Center, 58,520 SF and \$14,296,326 estimated construction cost. Scope included all commissioning, coordination and documentation required for LEED certification on the HVAC systems and networked controls, the lighting control systems and the domestic hot water distribution systems. **Client Contact:** MAJ Daniel Clevenger, CFMO, (304) 561-6446, daniel.w.clevenger.mil@mail.mil

West Virginia ARNG Camp Dawson Ranges at Briery Mountain, Kingwood, WV – Project includes design and construction of new Hand Grenade Familiarization Range and Live Fire Exercise Breach (LFE) Training Range at Briery Mountain Training area to conform site to government standard Breach Range Design Requirements. Included design of access road to the remote site, electrical connections, breaching structures, open covered range operations and control shelter, storage building, dry latrine, covered viewing stands, and parking area.

Client Contact: MAJ Robert Kincaid, Jr., Range Operations Manager, (304) 791-4459, robert.j.kincaid.mil@mail.mil

West Virginia ARNG Martinsburg Secure Facility, Martinsburg, WV – Renovations to 2-story area (6,200 SF per level) to provide new secure office space and related support spaces for specific using agency. Includes HVAC replacement; new interior finishes (including raised access flooring), structural roof deck and roofing system, elevator and fire stairs, building security and cameras, and site security fencing, sliding vehicular security gates, exterior parking; and site utility and storm drainage improvements. **Client Contact:** Matthew Reynolds, Deputy Branch Chief - Design & Construction, (304) 561-6568, matthew.t.reynolds18nfg@mail.mil

West Virginia ARNG Camp Dawson Live Fire Exercise Shoot House, Kingwood, WV – Design for innovative re-use of a recently-acquired former industrial complex adjacent to Camp Dawson to provide a \$2 million Live Fire Exercise Shoot House, including shoot house to be housed in a metal warehouse, operations / storage, after action review (AAR) facility, ammunition breakdown facility, warehouse restroom renovation, access road and parking area, and utility services. Completed conceptual design for LFSH facility with final design and

construction of LFSH completed by selected vendor (design / build); balance of facilities delivered with traditional design / bid / build approach. **Client Contact:** MAJ Robert Kincaid, Jr., Range Operations Manager, (304) 791-4459, robert.j.kincaid.mil@mail.mil

West Virginia ARNG Relocation of Camp Dawson Electrical Power and Communications Lines, Kingwood, WV – Study and design for 4-phase

construction program to relocate overhead electrical power lines and communications lines (telephone, data, etc) to underground duct banks in order to eliminate historic problems associated with overhead services. Phase 1: 3000 LF of power line relocation to new underground duct banks, with the associated replacement of pole-mounted transformers with pad-mounted transformers (1000 KVA to 50 KVA). Phase 2: Relocation of communications service to new underground duct banks along Phase 1 route. Phases 3 & 4: Relocation of approximately 2000 LF of overhead power lines and overhead communications lines to new duct banks, respectively. **Client Contact:** MAJ Robert Kincaid, Jr., Range Operations Manager, (304) 791-4459, robert.j.kincaid.mil@mail.mil

West Virginia ARNG Joint Armed Forces Reserve Center and Area Maintenance Support Activity, Ripley, WV –

Preparation of a Program Planning Document Charrette (PPDC) for replacement of two local armories and a USAR center with aging facilities and site limitations, with a new, \$17 million Joint Armed Forces Reserve Center and support facilities on a 94-acre site. Resulting plans include an Armed Forces Reserve Center (60,927 SF), unheated storage (6,000 SF), area maintenance support (4,500 SF) and helipad. **Client Contact:** MG Melvin Burch, (304) 561-6458, melvin.burch@us.army.mil

West Virginia ARNG Camp Dawson Volkstone Training Area Utility Upgrade, Kingwood, WV

– Expansion of sewer (1,996 LF), water (1,996 LF) and electric (1,797 LF) to all existing and future buildings, unit training equipment site (UTES) and wash rack locations. Also includes design of Forward Operating Base (FOB) including 20 14' x 16' wooden buildings, new bath house for approximately 200 people and pavilion. **Client Contact:** MAJ Robert Kincaid, Jr., Range Operations Manager, (304) 791-4459, robert.j.kincaid.mil@mail.mil

West Virginia ANG 130th Airlift Wing Master Plan Update and CIP, Charleston, WV

– Engineering consulting for preparation of a Web-Enabled Master Plan Update and GeoBase Common Installation Picture (CIP) for the 130th Airlift Wing in Charleston to evaluate benefits and impacts associated with acquiring additional airfield property for aircraft parking, operations, and maintenance facilities to meet current and future proposed missions.

Identified constraints and opportunities that apply to the 130th AW aircraft parking, operations and maintenance areas, including Anti-Terrorism/Force Protection (AT/FP) measures; quantified existing and required airfield facilities; developed new alternatives for long- and short-range plans; and created plan tabs that depict constraints and opportunities, long- and short-range development plans, land use and circulation plan, real estate plan, and facility utilization plan.

Client Contact: Capt Harry Netzer, Deputy BCE, (304) 341-6649, harry.g.netzer.mil@mail.mil

West Virginia ANG 130th Airlift Wing Communications Duct, Charleston, WV

– Concept Development Report to select a preferred concept for a new duct system for routing the base's communications network to a new Communications Facility. New fiber optic cable for base network will consist of two ITNs (Information Transfer Nodes); ITN-1 in the new Communications Facility and ITN-2 in new hangar, Building 407. Duct bank will carry fiber optic lines, television and coaxial cabling; allows looping of current system; and provides redundancy of assets. A 4-duct and a 12-duct PVC conduit system with inter-duct is proposed. **Client Contact:** LtCol Rick Thomas, Base Civil Engineer

West Virginia ANG 130th Airlift Wing Aboveground Fuel Storage Dispensing Facility, Charleston, WV

– Design for a new aboveground fuel station for the installation's government-owned vehicles, comprising two

new aboveground tanks (1 diesel, 1 unleaded gasoline) and a new dispensing system, replacing an older fuel station that included underground fuel storage tanks.

Client Contact: LtCol Rick Thomas, Base Civil Engineer

West Virginia ANG 130th Airlift Wing LOX Storage Relocation, Charleston, WV

– Type A and B design and construction administration services to relocate LOX function to south end of flight line to meet operational and installation development plan requirements. Facility includes covered storage facility with adjacent tank storage canopy; elevated pads and spill containment structure for storage tanks; paved entry road; protective fencing; and utilities (electric and communications). **Client Contact:** Capt Harry Netzer, Deputy BCE, (304) 341-6649, harry.g.netzer.mil@mail.mil

West Virginia ANG 130th Airlift Wing Squadron Operations Facility Repair, Charleston, WV

– Design services for \$3 million renovation and energy-efficient improvements to 25,765 SF facility with history of remodeling activities resulting in a building that inadequately serves its users (Administration and Operations, Base Operations, Command Post, and Life Support and Fitness Center). Work included Charrette to develop alternative floor plans. Selected design allows for efficient use of space; HVAC, electrical and fire protection systems upgrade; and roof repairs. Designed to achieve USGBC LEED Certified rating, meet all ANG Sustainable Design criteria and utilize

MILCON/SRM split funding. **Client Contact:** Capt Harry Netzer, Deputy BCE, (304) 341-6649, harry.g.netzer.mil@mail.mil

West Virginia ANG 167th Airlift Wing Basewide Sewer Line Repair, Martinsburg, WV – Planning, design and construction administration services for replacement of sanitary sewer system, circa 1954. Pipe included combination of various construction materials including vitrified clay pipe (VCP) with dilapidated sections allowing high rates of inflow and infiltration during storm events. **Client Contact:** Col Rodney Neely, MSG Commander, (304) 616-5198

West Virginia ANG 130th Airlift Wing Security Forces Squadron Facility Renovation and Expansion, Charleston, WV – Complete architectural and engineering Type A, B and C services for \$2 million renovation of 5,395 SF SFS facility (B142) including addition of 2,500 SF administrative and training space to better serve unit. Project (MILCON/SRM split funded) increases space and improves mission performance and operational efficiency for command and administrative functions in ways that are energy efficient, code compliant and in accordance with current ANG policies. Project meets LEED Silver design criteria, and all AT/FP and ADAAG requirements. **Client Contact:** Capt Harry Netzer, Deputy BCE, (304) 341-6649, harry.g.netzer.mil@mail.mil

West Virginia ANG 130th Airlift Wing Building 107 Renovation, Charleston, WV – Scope of work included design services (LEED Silver design criteria) for two separately funded (MILCON/SRM) sub-projects to repurpose existing unoccupied hangar into space for the Aeromedical Evacuation Squadron (AES). Repairs and building repurposing includes: new interior spaces within existing facility to accommodate new functions; building exterior repairs, new interior finishes; mechanical and electrical systems upgrade; fire alarm and fire protection systems repair; and site/building revisions to meet ATFP standards. **Client Contact:** Capt Harry Netzer, Deputy BCE, (304) 341-6649, harry.g.netzer.mil@mail.mil

West Virginia ANG 167th Airlift Wing C-17 Fuel Cell Hangar Modifications, Martinsburg, WV – Fast-track design of fuel cell hangar modifications required to meet 167AW's change in mission from C-5 to C-17 aircraft. **Client Contact:** Major Emerson Slack, Deputy Base Civil Engineer, (304) 616-5233, emerson.c.slack.mil@mail.mil

West Virginia ANG 167th Airlift Wing C-17 Maintenance Hangar Modifications, Martinsburg, WV – Fast-track design of maintenance hangar modifications required to meet 167AW's change in mission from C-5 to C-17 aircraft. **Client Contact:** Major Emerson Slack, Deputy Base Civil Engineer, (304) 616-5233, emerson.c.slack.mil@mail.mil

West Virginia ANG 167th Airlift Wing C-17 Corrosion Control Hangar Modifications, Martinsburg, WV – Fast-track design of corrosion control hangar modifications required to meet 167AW's change in mission from C-5 to C-17 aircraft. **Client Contact:** Major Emerson Slack, Deputy Base Civil Engineer, (304) 616-5233, emerson.c.slack.mil@mail.mil

West Virginia ANG 167th Airlift Wing C-17 Composite Material Shop, Martinsburg, WV – Fast-track design of composite material shop to the existing corrosion control hangar required to meet 167AW's change in mission from C-5 to C-17 aircraft. **Client Contact:** Major Emerson Slack, Deputy Base Civil Engineer, (304) 616-5233, emerson.c.slack.mil@mail.mil

West Virginia ANG 167th Airlift Wing Munitions Storage, Martinsburg, WV – New munitions inspection building, five magazines (all pre-manufactured modular units), new concrete pads (2,865 SF), all-weather pavement (5,566 SF) for vehicular access, gate/fencing, utilities, exterior lot lighting, communications, and security for the munitions area. **Client Contact:** Major Emerson Slack, Deputy Base Civil Engineer, (304) 616-5233, emerson.c.slack.mil@mail.mil

GRW Team Commissioning Agent: Facility Commissioning Group

With offices in Lexington, KY, and Indianapolis, IN, FCG has performed successful commissioning services for more than 685 projects during the past 22 years. The firm demonstrates verifiable performance for HVAC, HVAC controls, lighting controls, low voltage (fire alarm, security and intrusion detection, communications, and data), domestic hot water, and building envelope systems.

FCG's services afford clients an unbiased perspective of system installation, operation and performance, and monitors specified systems service and training events. The commissioning process does not alter the responsibilities of design professionals, installing contractors or their vendors, but rather augments the efforts of these parties toward the common goal of achieving a quality product that promotes the delivery of a safe, healthy environment for building occupants by turning over functionally tested systems with appropriate documentation and training for owners and operators.

FCG's corporate standards derive from the most up to date industry references available for building systems commissioning. ASHRAE Guideline 0 and the ACG Commissioning Guideline serve as the basis for our development of procedures and protocols. Utilizing personnel who have earned Commissioning Authority (CxA) and Commissioning Technician (CxT) certification

assures that our clients receive highly qualified professionals succeeding at executing team approach commissioning process.

Facility Commissioning Group bridges the gaps between the Owner, the Design Team, the Construction Team and Vendors using a proven process, which we outline in detail in Section 4.0.



Facility Commissioning Group

Facility Commissioning Group employs ASHRAE Standard 202 – 2013: Commissioning Process for Buildings and Systems; ASHRAE Guideline 0 – 2005: The Commissioning Process and ASHRAE Guideline 1.1-2007: The HVAC&R Technical Requirements for the Commissioning Process, ASHRAE Guideline 3: Exterior Enclosure Technical Requirements for The Commissioning Process as the bases of our process and our work conforms to the best practices outlined

in the Associated Air Balance Council Commissioning Group (ACG) Commissioning Guideline – 2005.

Facility Commissioning Group is a member of the U.S. Green Building Council and our commissioning process adheres to the requirements of the Leadership in Energy and Environmental Design (LEED) Green Building Rating System – specifically to Energy and Atmosphere (EA) credits Fundamental Commissioning of the Building Energy Systems and Enhanced Commissioning.



2.0 Project Experience

These projects demonstrate both GRW's and FCG's experience projects similar to the assignment for the Buckhannon Readiness Center Phase II Addition. We've highlighted our previous work as team members (**see also Table 1 on the last page of this section**), as well as our experience with the WVARNG and other military clients.

Readiness Center Commissioning Projects

West Virginia Army National Guard | Charleston, WV

GRW was contracted by the West Virginia Army National Guard to provide LEED Fundamental Commissioning for four building construction projects: 1) the **Buckhannon**, WV AFRC - Phase I, 38,000 SF and \$13,150,000 construction cost, 2) the **Morgantown**, WV Readiness Center, 58,520 SF and \$20,500,888 construction cost, 3) the **Moorefield**, WV Readiness Center, 57,256 SF and \$17,725,351 construction cost, and 4) the **Logan**, WV Readiness Center, 58,520 SF and \$14,296,326 estimated construction cost.

GRW managed the commissioning services for these projects and subcontracted with Facility Commissioning Group to provide field work and documentation services for all four projects.

The scope of services included all commissioning required for LEED certification on the HVAC systems and networked controls, the lighting control systems and the domestic hot water distribution systems, including coordination with providing contractors, documentation of all installations and testing, coordination of owner training and assistance with LEED submittals.

Contractor Performance Assessment Report (CPAR) (from Contracting Officer Matthew Corcoran)

- ✓ **Quality:** Exceptional/Outstanding Overall Job
- ✓ **Schedule:** Exceptional/Outstanding Overall Job
- ✓ **Cost Control:** Exceptional/Outstanding Overall Job
- ✓ **Management:** Exceptional/Outstanding Overall Job
- ✓ **Regulatory Compliance:** Exceptional/Outstanding Overall Job

Client Contact: MAJ Daniel Clevenger, CFMO, West Virginia Army National Guard, (304) 561-6446, daniel.w.clevenger.mil@mail.mil



Regional Training Institute, USP&FO Office/Warehouse & Combined Support Maintenance Site (Phase 2) Construction Services

Ohio Army National Guard | Columbus, OH

GRW provided a variety of engineering services during the construction of a 123,000 SF, \$13.9 million Regional Training Institute, a 69,880 SF, \$7.5 million USP&FO Office/Warehouse, and a 97,635 SF, \$19.3 million Combined Support Maintenance Site – Phase II Addition, all located at the Defense Supply Center Columbus (DSSC). These services were provided as a Delivery Order under a nationwide IDIQ contract between GRW and the National Guard Bureau.

This assignment included commissioning services for each facility, in which GRW served as the Government's independent Commissioning Agent, providing LEED fundamental and enhanced commissioning to ensure that the major building systems and several other building components and equipment items perform in accordance with the design intent and the project's requirements. This involved overseeing the installation, testing, start-up and operation of these systems as well as the training programs provided for the Government's O&M staff. Coordination with each contractor's systems sub-contractors, the design A/E firms and the Government's staff was also provided to ensure economical and efficient performance of the commissioned facilities.

GRW subcontracted commissioning field work and documentation to qualified commissioning agents, including Facilities Commissioning Group, Lexington, KY.

In addition, GRW provided routine construction observation services as the construction of each project progressed. These services, which augmented those provided by the Government and the design A/E firms, included unannounced construction site visits at routine intervals by GRW's civil and structural engineers during the initial construction period, and by



"Thanks for your assistance! You have been a huge asset to this project." Comment from SFC William C. Knox, DIMR Project Manager, Ohio ARNG

mechanical, electrical and communications engineers and architects during the later phases. These GRW staff members reported their findings to the Government, attended on-site progress meetings, and coordinated with the design A/E firms to evaluate the contractor's progress.

To provide documentation of construction progress as well as to maintain a digital record of items of work that would later be hidden by construction activities, a sub-consultant was retained by GRW on behalf of the Government through this Delivery Order. These services included weekly digital photography of each facility, with the photos linked to the floor plans and site plans as construction progresses. These photographs will serve as a permanent as-built record in the event it later becomes necessary to locate a plumbing line under a floor or a conduit inside a wall cavity.

Client Contact: Lt. Col. Greg Rogers, Deputy CFMO, Ohio Army National Guard, (614) 336-7194, gregory.rogers1@us.army.mil

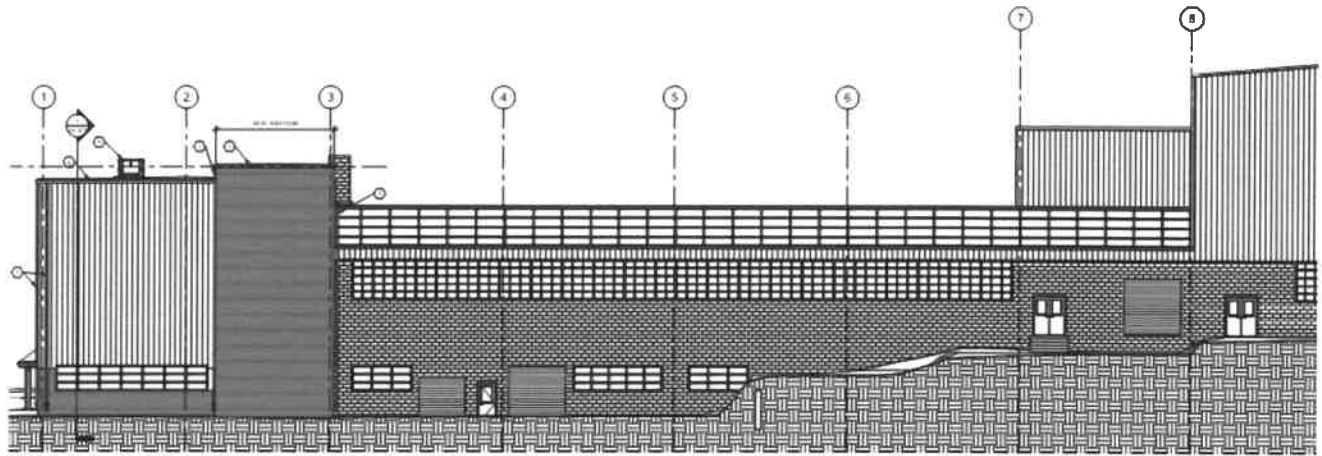
Martinsburg Secure Facility

West Virginia Army National Guard | Charleston, WV

GRW is designing renovations for a secure facility located adjacent to the Eastern WV Regional Airport in Martinsburg, WV. The purpose of the renovation is to provide new secure office space, and related support spaces, for a specific using agency. The main renovated area is on two upper levels, containing approximately 6,200 SF per level. The scope includes:

- Demolition of existing interior finishes and other improvements within the renovation area
- Complete replacement of the existing non-operational HVAC system with a new energy-efficient system. New system consists of water source heat pumps (WSHP) connected to a new boiler and closed loop fluid cooler. A new water-cooled dedicated outside air unit with heat recovery was designed for required outside air to the building.
- Redundant HVAC systems for secure IT room and non-secure IT room. Each room is served by the WSHP system as well as ductless split systems.
- New DDC control system for all new equipment
- New interior finishes throughout the areas, including raised access flooring throughout the renovated areas
- New structural roof deck and roofing system
- New elevator and fire stairs
- New site security fencing, sliding vehicular security gates, exterior parking, walkways, site utility improvements, and storm drainage improvements
- New building security and cameras

Client Contact: Todd Reynolds, Deputy Branch Chief - Design & Construction, West Virginia Army National Guard, (304) 561-6568, matthew.t.reynolds18nfg@mail.mil



130th Airlift Wing SFS Facility Renovation and Expansion West Virginia Air National Guard | Charleston, WV

GRW was retained to provide complete architectural and engineering Type A, B and C services for renovating the existing 5,395 SF Security Forces Squadron facility and adding 2,500 SF of administrative and training space to the facility. This project uses MILCON/SRM split funding to deliver a renovated and expanded SFS facility, which provides increased space for command and administrative functions.

Completed in 2015, key program elements include:

- Expanded command/administrative space
- Arms vault
- Training rooms
- SIPRNet
- ATFP building/site security
- ADA compliance
- Geothermal
- Split MILCON/SRM funding
- Extensive communications infrastructure

This project meets LEED Silver measures for sustainable design.

HVAC systems were replaced in their entirety with a new packaged rooftop VAV system and electric reheat terminal units. A server rooms and arms vault were conditioned with precision cooling systems. Energy recovery was implemented for the ventilation system. The systems achieved 32% improvement over code to exceed the requirements of EPAAct.

GRW managed the commissioning services for these projects and subcontracted with Facility Commissioning Group to provide field work and documentation services.



Contractor Performance Assessment Report (CPAR) (from Contracting Officer Matthew Corcoran)

- ✓ **Quality:** Exceptional/Outstanding Overall Job
- ✓ **Schedule:** Exceptional/Outstanding Overall Job
- ✓ **Cost Control:** Exceptional/Outstanding Overall Job
- ✓ **Management:** Exceptional/Outstanding Overall Job
- ✓ **Regulatory Compliance:** Exceptional/Outstanding Overall Job

Client Contact: Maj. Emerson C. Slack, Deputy BCE (304) 616-5233 emerson.c.slack.mil@mail.mil or Capt Harry Netzer, West Virginia Air National Guard, (304) 341-6649, harry.g.netzer.mil@mail.mil

Crane Building 69 Renovation **Naval Surface Warfare Center | Crane, IN**

GRW provided design services for this design-build project at Building 69 at NSA Crane, IN. The work involved the more than half-million dollar renovation of an existing building into an office with lunchrooms and break out offices.

Completed in 2016, the facility was upgraded to meet energy and life safety code, new finishes, and mechanical and electrical systems. GRW's scope included architectural design, and mechanical/plumbing, electrical, and structural engineering services.

GRW also provided construction administration services and building commissioning services, subcontracted with Facility Commissioning Group.

Crane NSA Building 174 Complex Boiler Renovations

Naval Surface Warfare Center | Crane, IN

As the installing design-builder's lead consultant, GRW provided mechanical and electrical design, and construction administration services for the replacement of the heating systems at Building 174 and two other buildings at the Naval Support Activity Crane in Crane, IN. The project scope included:

- Demolition of the existing 20-year old steam heating system in two buildings (174 and 3299) and replacement with new hot water heating system
- Removal of the electric heat and the installation of two new hot water boilers and accessories in building 3397
- Connection of all three buildings (174, 3299 and 3397) with above-ground hot water pipe
- Extension of sewer, water and gas lines to Building 3397

The mechanical and electrical equipment installed in Buildings 174 and 3299 was required to be explosion-proof.

GRW also provided construction administration services and building commissioning services, subcontracted with Facility Commissioning Group to provide field work and documentation services.

Client Contact: Jim Duzan, Project Manager, Naval Surface Warfare Center, (812) 854-3398, James.Duzan@navy.mil

BGAD Personnel Support Facility **U.S. Army Corps of Engineers | Louisville, KY**

Located near Richmond, KY, the Blue Grass Army Depot (BGAD) encompasses approximately 14,600 acres, and is primarily involved with industrial and related activities associated with the storage and maintenance of conventional and chemical munitions. The Blue Grass Chemical Activity (BGCA), a tenant organization of the BGAD, is responsible for the safe, secure storage of the stored chemical weapons stockpile, which comprises 523 tons of nerve agents GB and VX, and mustard agent in projectiles, warheads and rockets.

As the lead A/E firm, GRW provided architectural design, and mechanical, electrical and site/civil engineering services, as well as quality control and project management for this BGAD design-build project. The building is a personnel support facility (PSF) for the BGCA.

GRW also managed building commissioning services (including field work and documentation services), subcontracted with Facility Commissioning Group to provide.

The \$2.5-million facility completed in 2015, supports user functions including field office activities, conference room areas, locker and changing areas, and laundry and storage space. Approximately 7,500 SF is dedicated to these functions. The construction is a pre-engineered metal building with functional design and materials.

Client Contact: Terry Stroschein, U.S. Army Corps of Engineers, Louisville District, (859) 625-1257, terry.e.stroschein.civ@mail.mil

Aliceville Federal Correctional Institution and Satellite Camp Federal Bureau of Prisons | Washington, DC

GRW led the design team, in conjunction with Caddell/Yates JV, for the design-build of a women's medium-security Federal Correctional Institution and minimum-security Federal Prison Camp located near Aliceville, Alabama. This \$196 million, LEED Silver certified, project has a gross building area of approximately 665,889 SF, and can house approximately 1,790 inmates. The FCI campus plan places the three, 4-story housing units, and program and multipurpose functions in a semi-circular campus layout enclosing a central secure compound.

A few of the prison's components include:

- Three 4-story dormitory buildings housing approximately 1,500 inmates (256,493 SF)
- One single-story segregation unit dormitory accommodating up to 48 inmates (19,105 SF)
- Food service (kitchen/dining) building (29,654 SF)
- Medical services building (12,324 SF)
- Warehouses/sanitation building (49,863 SF)
- Administrative buildings (48,264 SF)
- Recreational building (17,319 SF)
- Academic educational buildings (21,926 SF)
- Personal services building (17,491 SF)
- Industrial/vocational buildings (54,916 SF)
- Central utilities plant (12,647 SF)
- Vehicle maintenance building (8,126 SF)
- Physical and electronic security systems
- Utilities (potable and fire water mains, sanitary sewers, site electrical distribution and communication duct banks for 17 buildings)

One of the energy and environmental highlights is the use of a fully automated, energy recovering system that reclaims, filters, and treats laundry waste water from washing machines for reuse; reducing both energy and water consumption.

HVAC systems are monitored and controlled by a direct digital control (DDC) utility management control system (UMCS) utilizing stand-alone controllers in an open, distributed fiber-optic network, and this state-of-the-art system provides flexibility for future modifications or expansions, as required. The DDC system allows monitoring and control of all major



PPQ Comments (4/5/2018):

GRW handled routine construction administration functions such as submittal reviews and RFI responses smoothly and efficiently. GRW also responded to more than 1,600 design review comments in a timely fashion and was an integral part of keeping the project fast-tracked and on schedule. GRW was able to maintain continuity of professional service during the life of the project by retaining staff and establishing a project knowledge base from start to finish.

equipment included boilers, chillers, cooling towers, pumps, air handling units, VAV boxes, and exhaust fans from the central Operators Work Station, located in the Operator/Clerk Office in the Central Utility Plant.

GRW subcontracted commissioning of the building energy systems and documentation to qualified commissioning agents, including Facilities Commissioning Group, Lexington, KY.

Client Contact: Judah Organic, Design Compliance Programs Manager, Federal Bureau of Prisons, (202) 514-9566, jorganic@bop.gov

Fort Campbell - 101st Airborne Division Command and Control Headquarters



Location: Fort Campbell, KY
Client: Jerry L. Chandler, PE
U.S. Army Corp of Engineers
Louisville District
600 Dr. Martin Luther King, Jr. Place
Louisville, KY 40202
Jerry.L.Chandler@usace.army.mil
(270) 798-9465



Description: This 93,000 SF building is located at Fort Campbell, Kentucky. The new headquarters building provides a secure environment for state of the art, real time communication and control of US war fighters at remote locations that replaced 33 buildings scattered around the army post. This facility provides significant improvements in armed services connectivity built around high technology computerized systems for combat support as well as headquarters administration and high security planning.

Scope: The two-story facility utilized passive underfloor air distribution system with numerous air handling units employing unique face and bypass humidity control, sub-zone mixing, zone control and bio-emergency purge and isolation features that required intensive testing and review before reliable function was achieved. Following standard USACE protocol, construction phase commissioning implemented near the end of the construction phase documented numerous failures of system construction and control. Over a two-year turnover period following construction and installation of building systems, extensive commissioning activities and corrective action led to successful completion and operation of the building systems.

Stout Field - Joint Forces Headquarters



Location: Indianapolis, Indiana
Client: Greg Stephens
Mussett, Nicholas & Associates, Inc.
502 S. West Street
Indianapolis, IN 46225
317-631-9241
gstephens@m-n-a.com



Description: The Joint Forces Headquarters for the State of Indiana, located at Stout Field, serves as a peace-time mission for the assigned units. The 79,111 square foot renovation and 76,342 square foot addition were designed to provide a more efficient operation center by consolidating units associated with the Headquarters but located at other facilities or in other buildings on Stout Field. The Joint Forces Headquarters facility houses the Indiana Army National Guard Element, Joint Forces Headquarters, Indiana Air National Guard, INARNG Recruiting and Retention Battalion and the 38th Infantry Division Band. This project included a separate new 1,500 square ft. building for mail. The renovation affected existing buildings 1 (Joint Operations Center), 3 (Network Operations Center) and 9, which is a hangar with two-story office wings. This building dates back to World War II, is eligible for listing on the National Register, and was reviewed by the State Historic Preservation Office. The existing Building 1 added a sprinkler system throughout allowing for a new two-story addition. The addition included a new VIP/Dignitary entry as well as a new public entry. The HVAC design utilized packaged roof top units with water-cooled heat pumps served by a geothermal well field. VAV terminal units were utilized for zone controls. Existing boilers were replaced, and the project utilized occupancy controls for lighting.

Scope: Facility Commissioning Group provided Facility Commissioning Group provided Comprehensive Commissioning services in fulfillment of this LEED-NC v3 Silver Certified project for prerequisite and enhanced LEED commissioning on this project including HVAC, Domestic Hot Water, Lighting Control, Emergency Power, Power Distribution, UPS, Life Safety, Data/Communication, Security, and Building Envelope systems.

Table 1: FCG Federal Maintenance Facilities

#	PROJECT	GRW Project	LOCATION
1	Camp Atterbury - Department of Public Works		Columbus, IN
2	Bluegrass Army Depot – Personnel Support Facility	X	Richmond, KY
3	Boone National Guard Center - Army Aviation Support Facility		Frankfort, KY
4	Defense Supply Center Columbus - Combined Support Maintenance Shop Phase II	X	Columbus, OH
5	Defense Supply Center Columbus – USPFO Warehouse	X	Columbus, OH
6	Fort Campbell - 101st Battle Command Training Center		Fort Campbell, KY
7	Fort Campbell - 106th & 129th Vehicle Maintenance		Fort Campbell, KY
8	Fort Campbell - 716th Military Police Battalion Headquarters		Fort Campbell, KY
9	Fort Campbell - Aviation BG BN Headquarters Ph. 3		Fort Campbell, KY
10	Fort Campbell - Aviation Transformation Complex (TEMF)		Fort Campbell, KY
11	Fort Campbell - Brigade Combat Team Complex		Fort Campbell, KY
12	Fort Campbell - Division Command and Control Facility		Fort Campbell, KY
13	Fort Campbell - Equipment Maintenance Complex		Fort Campbell, KY
14	Fort Campbell - Air Deployment / Mobilization Enhancement Facility		Fort Campbell, KY
15	Fort Campbell - Unit Maintenance Facility-Phase A-COF		Fort Campbell, KY
16	Fort Campbell - Grow the Force Unit Maintenance Facilities Phase B		Fort Campbell, KY
17	Fort Campbell - SOF Aircraft Maintenance Hangar		Fort Campbell, KY
18	Fort Campbell - SOF-Aquatic Survival Training Facility		Fort Campbell, KY
19	Fort Campbell - SOF Battalion Operations Complex Phase 2		Fort Campbell, KY
20	Fort Campbell - SOF Battalion Operations Complex Phase 3		Fort Campbell, KY
21	Fort Campbell - SOF Group Operations Complex Phase I		Fort Campbell, KY
22	Fort Campbell - Training Support Center		Fort Campbell, KY
23	Fort Campbell - Unit Ops-CID COF Renovation and Addition		Fort Campbell, KY
24	Fort Knox - Air Support Operations Squadron (ASOS) Facility		Fort Knox, KY
25	Fort Knox - Brigade/Battalion Headquarters Annex		Fort Knox, KY
26	Fort Knox - IBCT Co Op Facilities Phase 1		Fort Knox, KY
27	Fort Knox - IBCT Vehicle Maintenance Facility		Fort Knox, KY
28	Fort Knox – Warriors in Transition Small Co HQ Building	X	Fort Knox, KY
29	NAS Brunswick - Maintenance Hangar 6		Brunswick, ME
30	Naval Support Activity Crane – Replace Heating System Building 174	X	Crane, IN
31	Ohio National Guard – Defense Supply Center Columbus – Combined Support Maintenance Shop Phase II	X	Columbus, OH
32	Ohio National Guard – Defense Supply Center Columbus – United States Property and Fiscal Office	X	Columbus, OH
33	Stout Field - Joint Forces Headquarters		Indianapolis, IN
34	Vance Air Force Base - BRAC-Squadron Facilities		Enid, OK
35	West Virginia Army Reserve National Guard - Buckhannon Armed Forces Reserve Center	X	Buckhannon, WV
36	West Virginia Army Reserve National Guard – ADAL Security Forces Building B142	X	Charleston, WV
37	West Virginia Army National Guard - Moorefield Readiness Center	X	Moorefield, WV
38	West Virginia Army National Guard - Morgantown Readiness Center	X	Morgantown, WV
39	Wright Patterson Air Force Base – Building 622 Renovation	X	WPAFB, OH

3.0 Staff Qualifications

By choosing GRW and ESG team, you have access to some of the most qualified and knowledgeable military consultants in the region.

Bill Brewer, PE, LEED AP BD+C, will be the overall leader of the team and directly involved with you through every stage of the project. He regularly provides project leadership for complex building projects, and he has overseen commissioning projects, as well as additions and renovations to several West Virginia National Guard buildings.

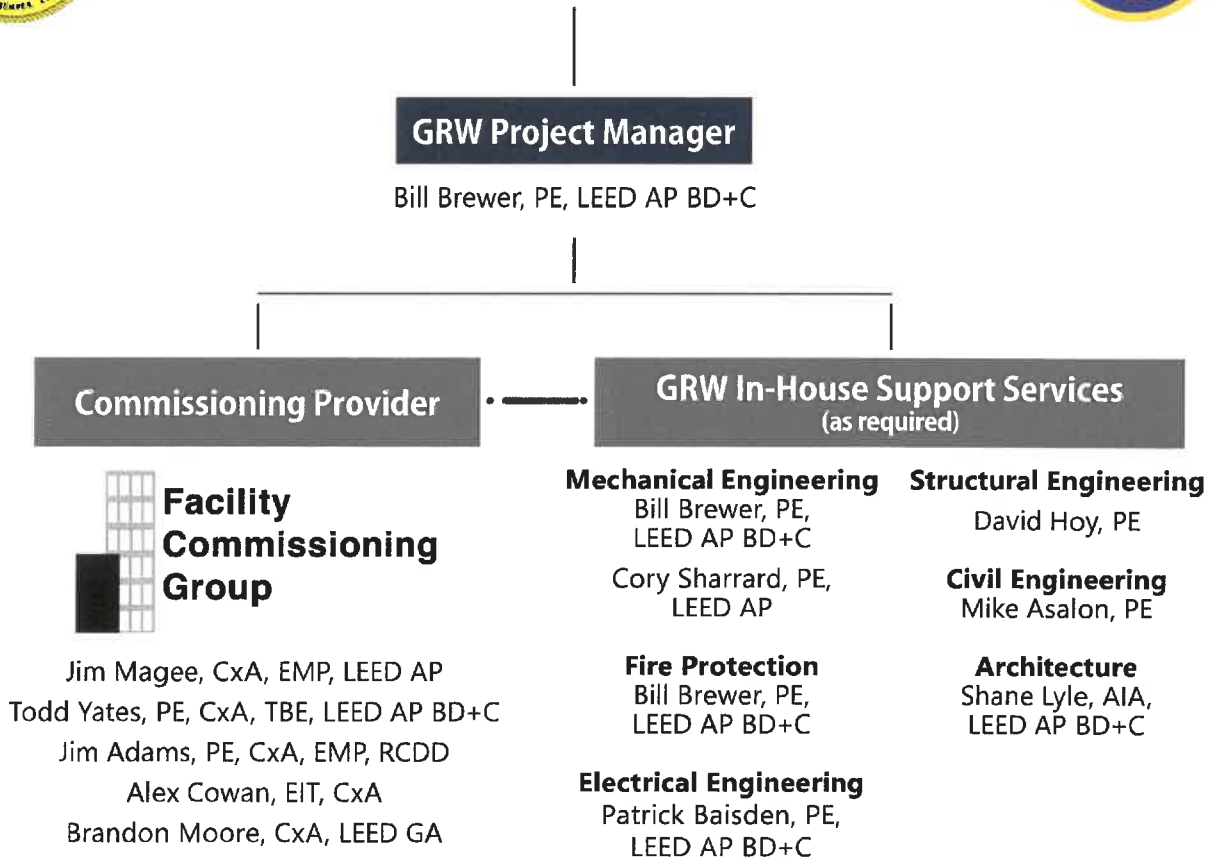
FCG's **Jim Magee, CxA** will serve as the onsite Commissioning Authority leading an integrated multi-

disciplinary team, including FCG's **Brandon Moore**, who will serve as Commissioning Administrator, and **Todd Yates**, who will serve as FCG's procurement official. More information about roles are provided in **Section 4.0**.

Our team's **discipline leaders** – and their backup team members – are equally experienced and will work closely with the team as required. Furthermore, our team's local knowledge and capacity has been strengthened by GRW's subsidiary, Chapman Technical Group, a 25-person St. Albans, WV-based firm. Structural engineer David Hoy works in that office.



West Virginia Department of Administration and West Virginia Army National Guard



Bill Brewer, PE, LEED AP BD+C | GRW Mechanical Engineer



YEARS OF EXPERIENCE:

With GRW: 21

Total: 49

EDUCATION

B.S., Mechanical Engineering,
1967, Case Western Reserve
University

REGISTRATION

Professional Engineer: KY, CA,
OH, NC, TN, NH, WV, IN, TX, MS,
GA, VA, MI, PA, KS

NCEES Member, allows
reciprocity with other states

Professional Member, Society of
Fire Protection Engineers

LEED Accredited Professional,
Building Design + Construction

PROFESSIONAL AFFILIATIONS AND TRAINING

American Society of Mechanical
Engineers

American Society of Heating,
Refrigeration and Air
Conditioning Engineers,
Bluegrass Chapter

International Code Council

Society of Fire Protection
Engineers

International Ground Source
Heat Pump Association

U.S. Green Building Council

American Council of
Engineering Companies

Certified Energy Auditor

Simplex-Grinnell Clean Agent
Training: "Clean and Green -
Ansul Sapphire and Inergen Fire
Suppression Agents"

RELEVANT PROJECT EXPERIENCE

West Virginia ARNG Readiness Center Commissioning Projects, WV – Project Manager. LEED Fundamental Commissioning for four building construction projects: Buckhannon AFRC - Phase I, 38,000 SF and \$13,150,000 construction cost; Morgantown Readiness Center, 58,520 SF and \$20,500,888 construction cost; Moorefield Readiness Center, 57,256 SF and \$17,725,351 construction cost; and Logan Readiness Center, 58,520 SF and \$14,296,326 estimated construction cost. Scope included all commissioning, coordination and documentation required for LEED certification on the HVAC systems and networked controls, the lighting control systems and the domestic hot water distribution systems.

Ohio ARNG Regional Training Institute, USP&FO Office/Warehouse and Combined Support Maintenance Site (Phase 2) Construction Services, Columbus, OH – Project Manager. Commissioning services and construction observation/documentation services for a 123,000 SF, \$13.9 million Regional Training Institute, a 69,880 SF, \$7.5 million USP&FO Office/Warehouse, and Phase 2 of a 97,635 SF, \$19.3 million Combined Support Maintenance Site, all located at the Defense Supply Center Columbus (DSSC).

West Virginia ANG 167th Airlift Wing Maintenance Mall (Building 307) Repair, Martinsburg, WV – Project Manager. Concept Development Report for C-5 aircraft complex which requires electrical modifications to meet needs of current occupants' activities, and investigation/resolution of temperature control in numerous locations.

Indiana ARNG 76th Brigade Combat Team Readiness Center, Lawrence, IN – Mechanical Engineer. Planning, design and construction administration services for a new 109,555 SF, 2-story Readiness Center and 8,300 SF unheated storage facility.

West Virginia ANG 167th Airlift Wing C-17 Maintenance Hangar Modifications, Martinsburg, WV – Mechanical Engineer.

West Virginia ANG 167th Airlift Wing C-17 Fuel Cell Hangar Modifications, Martinsburg, WV – Mechanical Engineer.

West Virginia ANG 167th Airlift Wing C-17 Corrosion Control Hangar Modifications, Martinsburg, WV – Mechanical Engineer..

West Virginia ANG 167th Airlift Wing C-17 Composite Material Shop, Martinsburg, WV – Mechanical Engineer.

West Virginia ANG 130th Airlift Wing Communications Facility, Charleston, WV – Mechanical Engineer.

Crane NSA Building 174 Complex Boiler Renovations, Crane NSWC, IN – Project Manager. Mechanical and electrical design, and construction administration services for design/build replacement of heating systems.

Crane NSA Building 69 Renovation, Crane NSWC, IN – Mechanical Engineer. The facility was upgraded to meet energy and life safety code, new finishes, and mechanical and electrical systems.

Kentucky ARNG Readiness Centers HVAC Replacement, Jackson and Williamsburg, KY – Project Manager. Design for HVAC systems renovation for two Army National Guard Readiness Centers in Jackson and Williamsburg, KY, totaling 32,000 SF, involving lighting (low mercury T5 lamps) and ceiling replacement and changes in electric services providing new high-efficiency air-cooled heat pumps for heating and cooling high-use areas and low-intensity gas infrared units for heating large drill halls cooled by air-cooled DX units, new duct work, and interior finish repair. Included web-based DDC control networks allowing monitoring, troubleshooting and adjustment of HVAC equipment from Frankfort HQ of KY ARNG.

West Virginia ANG 167th Airlift Wing Maintenance Mall (Building 307) Repair, Martinsburg, WV – Project Manager. Concept Development Report for C-5 aircraft complex which requires electrical modifications to meet needs of current occupants' activities, and investigation/resolution of temperature control in numerous locations. Report included detailed discussion of current electrical, architectural and HVAC system problems; recommendations to resolve large-system problems, as well as particular solutions for small areas; conceptual level drawings; conceptual level outline specification; and construction cost estimate.

Northpoint Training Center Replacement, Burgin, KY – Mechanical Engineer. Design and construction oversight services for fast-track project with multiple bid packages to rebuild prison facilities (41,646 SF total) following riot. Meeting LEED Certified Design Criteria, two new buildings include: Program Building (kitchen/dining, medical, canteen, multipurpose classrooms, library, and sanitation) and Visitation Building. Additional work involved security system renovation at six existing two-story dormitories, addition/renovation of the central control building, and a new campus emergency power generator.

Aliceville Federal Correctional Institution and Satellite Camp, Aliceville, AL – Mechanical Engineer. Design-build delivery of \$196 million, LEED Silver women's medium-security Federal Correctional Institution (70-acre site) and minimum-security Federal Prison Camp (20-acre site) totaling 665,889 SF, housing approximately 1,790 inmates. FCI includes three 4-story housing units and one single-story segregation unit dormitory. Complex includes following buildings: food service (kitchen/dining), medical services, warehouses/sanitation, administrative, recreational, academic educational, industrial/vocational, personal services, vehicle maintenance, and central utilities plant.

Crane NSA Building 3149 Mechanical Systems Renovation, Crane NSWC, IN – Project Manager. A/E design and construction administration services for spot cooling and boiler replacements encompassing primarily mechanical and electrical engineering.

Crane NSA Building 3234 Interior Mezzanine Addition, Crane NSWC, IN – Mechanical Engineer. Design services for design-build renovation providing a modular office space on the mezzanine, including stairway access and a lift for life safety access features. Also included architectural design, as well as new HVAC, electrical and lighting systems, and construction administration services.



Jim Magee, Principal

EDUCATION BSME, University of Kentucky

CERTIFICATIONS

EIT [REDACTED]
Certified Commissioning Authority (CxA) [REDACTED] ACG
Certified Energy Management Professional (EMP), [REDACTED] EMA
USGBC LEED Accredited Professional [REDACTED] LEED AP
OSHA 10-Hour Construction Safety and Health Course

AFFILIATIONS

AABC Commissioning Group (ACG)
Past President & current Director of Southeast Regional Chapter Building Cx Association (SERBCA)
Member #20 of Building Commissioning Association (BCA)
Co-author of AABC Commissioning Guideline for Building Owners, Design Professionals, and Commissioning Service Providers, and ACG Commissioning Guideline-2005
Voting Committee Member of ASHRAE Standard 202
Technical Advisory Committee Member of the ASHRAE Building Performance Alliance (BPA)
United States Green Building Council (USGBC)
International Society of Pharmaceutical Engineers (ISPE)
Technical Advisory Committee Member of IAS for Sustainability (Commissioning)
NIBS/DOE Commissioning Leadership Council

INDUSTRY EXPERIENCE BEGINNING: 1987

PROJECT EXPERIENCE

WVARNG Buckhannon Readiness Center, Buckhannon, WV

Project Cost: \$13,150,000.00 / 37,000 SF

Scope: Fundamental LEED v3 Commissioning for new construction of a building that houses three units of the West Virginia Army National Guard (WVARNG) as well as serve the public sector of Upshur County with a multi-purpose conference center.

WVARNG Morgantown Readiness Center, Morgantown, WV

Project Cost: \$18,500,000.00 / 54,000 SF

Scope: Fundamental LEED v3 Commissioning for new construction of a building to support the functions of the 201st field artillery and the 249th Army Band, which contains a performance hall, pre-function spaces and training/rehearsal areas.

WVARNG Logan-Mingo Readiness Center, Holden, WV

Project Cost: \$12,000,000.00 / 54,000 SF

Scope: Fundamental LEED v3 Commissioning for new construction of a building to serve the 150th Armored Reconnaissance Squadron and the 156th Military Police Detachment.

Fort Campbell - Division Command and Control Facility, Fort Campbell, KY

Project Cost: \$33,000,000 / 93,000 SF

Scope: Comprehensive HVAC Commissioning for new construction of a division headquarters building having state-of-the-art security and technology to meet today's military challenges.



V. Todd Yates, President

EDUCATION BSME, University of Kentucky

CERTIFICATIONS

PE in the Commonwealth of Kentucky [REDACTED]
PE in the State of Tennessee [REDACTED]
PE in the State of Indiana [REDACTED]
PE in the State of Alabama [REDACTED]
PE in the State of West Virginia [REDACTED]
Certified Commissioning Authority (CxA) [REDACTED] ACG
Certified Test and Balance Engineer (TBE) [REDACTED] AABC
USGBC LEED Accredited Professional [REDACTED] LEED AP BD+C

AFFILIATIONS

Associated Air Balance Council (AABC)
AABC Commissioning Group (ACG)
American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE)
United States Green Building Council (USGBC)

INDUSTRY EXPERIENCE BEGINNING: 1991

PROJECT EXPERIENCE

Stout Field – Joint Forces Headquarters, Indianapolis, IN

Project Size: 155,543 SF

Scope: The Joint Forces Headquarters for the State of Indiana, located at Stout Field, serves as a peace-time mission for the assigned units. This renovation and addition was designed to provide a more efficient operation center by consolidating units associated with the Headquarters but located at other facilities or in other buildings on Stout Field.

Indianapolis Public Schools Capital Improvements Program Phase I, II and III, Indianapolis, IN

Project Cost: \$693,000,000 / 6,500,000 SF

Scope: Comprehensive HVAC Commissioning for renovations and new construction of elementary, middle, and high schools funded by bonds issued by the city of Indianapolis. FCG performed Commissioning pursuant to LEED certification on 25 of the 27 Phase III projects.

Indiana University (IUB) – Ashton Apartment Complex, Bloomington, IN

Project Cost: \$80,000,000 / 400,000 SF

Scope: Comprehensive HVAC Commissioning for new construction of seven student housing buildings. The new complex will have a five-story commons building that provides programming and classroom space, while the housing buildings will be four stories. It consists of 803 beds and the majority of units have four-bedroom suites, each with its own kitchen, common area and two bathrooms.

Indiana University School of Medicine – Information Science Building, Indianapolis, IN

Project Cost: \$42,000,000 / 167,000 SF

Scope: Comprehensive HVAC Commissioning for new construction of a research facility that also includes restaurants and other shops to serve the occupants of the building and the general public.



Jim Adams, Vice President

EDUCATION BSEE, University of Kentucky

CERTIFICATIONS

PE in the Commonwealth of Kentucky [REDACTED]
PE in the State of Ohio [REDACTED]
Certified Commissioning Authority (CxA) [REDACTED] ACG
Certified Energy Management Professional (EMP), [REDACTED] EMA
RCDD (Registered Communications Distributions Designer) [REDACTED]
CPTED (Crime Prevention Through Environmental Design)
OSHA 30-Hour Construction Safety and Health Course

AFFILIATIONS

AABC Commissioning Group (ACG)
BICSI Building Industry Consulting Service International
American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) #8198793

INDUSTRY EXPERIENCE BEGINNING: 1991

Design, operation, maintenance, and commissioning of electrical distribution, lighting, life safety, emergency power generator and automatic power transfer systems as well as fire alarm and various low-voltage systems.

PROJECT EXPERIENCE

Eastern Kentucky University – New Science Building, Richmond, KY

Project Cost: \$83,000,000 / 234,000 SF

Scope: New construction of a facility with laboratory classrooms and offices. The facility also features an atrium and greenhouse to draw attention to the environment and serve as teaching tools. With this emphasis on the environment EKU has utilized a sustainable design for this facility. Mr. Adams was responsible for specification development and design of the physical access control and DVMS (digital video management system) through the contract document phase of this project.

Eastern State Hospital, Lexington, KY (LEED Silver)

Project Cost: \$129,000,000 / 323,000 SF

Scope: New construction of a mental health care facility that is a state-of-the-art facility providing specialized programs such as for veterans with substance abuse and mental illnesses. Mr. Adams was responsible for specification development and design of the physical access control, DVMS, and emergency notifications systems through the contract document phase of this project.

Western Kentucky Univ. – College of Education & Behavioral Sciences, Bowling Green, KY (LEED Gold)

Project Cost: \$35,000,000 / 119,000 SF

Scope: New construction of a building that will house administrative, classroom, library and clinical spaces dedicated to literacy, psychology, and counseling programs.. Mr. Adams was responsible for Physical Security, Access Control design and contract administration.



Alex Cowan, Commissioning Provider

EDUCATION

Masters in Mechanical Engineering, University of Louisville

CERTIFICATIONS/TRAINING

Engineer in Training, EIT
Certified Commissioning Authority (CxA), ACG
OSHA 30 Hour Occupational Safety and Health

INDUSTRY EXPERIENCE BEGINNING: 2015

PROJECT EXPERIENCE

St. John's Lutheran Church, Lexington, KY

Project Cost: \$4,200,000 / 20,000 SF

Scope: Comprehensive Commissioning for new construction of a church that consists of a new sanctuary and fellowship center to comply with IECC 2012 Section C408 for HVAC commissioning.

Morehead State University - Student Service Facility (Adron Doran), Morehead, KY

Project Cost: \$50,000,000 / 197,000 SF

Scope: The newly renovated Adron Doran University Center, features a 100-seat theatre, modern decorative touches, the second largest Starbucks in Kentucky, three additional popular restaurant chains, and a campus pub and lounge area. Students asked for more dining options and more collaboration space. The renovation to ADUC increases student services and amenities on campus and nearly doubles the size of the facility.

Kentucky International Convention Center (KICC), Louisville, KY

Project Cost: \$207,000,000 / 1,000,000 SF

Scope: The renovated KICC houses nearly 1 million square feet of space across three main floors. During its two-year closure, the west end of the building was demolished and rebuilt with large windows and skylights, providing a focus on glass, open space, modern technology and natural light. Inside, the new KICC has a little more than 200,000 square feet of contiguous exhibit hall space, a 40,000-square-foot main ballroom, 52 meeting rooms, a 175-seat tiered conference theater and a new kitchen that can accommodate as many as 15,000 meals per day.

Shaker Village of Pleasant Hill – Centre Family Dwelling and Meeting House, Harrodsburg, KY

Project Cost: \$4,000,000 / 40,000 SF

Scope: The project includes the exterior restoration of the Centre Family Dwelling and Meeting House buildings. The general scope of the exterior work includes brick and stone masonry pointing and repair, restoration carpentry, wood shingle roofing, wood window and door restoration and painting. HVAC Unit replacement was included in this project as well as an updated lighting control system.



Brandon Moore, Vice President

EDUCATION BA Accounting, Transylvania University

CERTIFICATIONS

Certified Commissioning Authority (CxA) [REDACTED] ACG
USGBC LEED Green Associate [REDACTED] LEED GA

AFFILIATIONS

AABC Commissioning Group (ACG)
United States Green Building Council (USGBC)

INDUSTRY EXPERIENCE BEGINNING: 2008

Brandon's involvement in the following projects includes project/LEED administration duties that entails commissioning plan/report production, document reviews, file distribution and file maintenance.

WVARNG Buckhannon Readiness Center, Buckhannon, WV

Project Cost: \$13,150,000.00 / 37,000 SF

Scope: Fundamental LEED v3 Commissioning for new construction of a building that houses three units of the West Virginia Army National Guard (WVARNG) as well as serve the public sector of Upshur County with a multi-purpose conference center.

WVARNG Morgantown Readiness Center, Morgantown, WV

Project Cost: \$18,500,000.00 / 54,000 SF

Scope: Fundamental LEED v3 Commissioning for new construction of a building to support the functions of the 201st field artillery and the 249th Army Band, which contains a performance hall, pre-function spaces and training/rehearsal areas.

WVARNG Logan-Mingo Readiness Center, Holden, WV

Project Cost: \$12,000,000.00 / 54,000 SF

Scope: Fundamental LEED v3 Commissioning for new construction of a building to serve the 150th Armored Reconnaissance Squadron and the 156th Military Police Detachment.

Fort Campbell – Brigade Combat Team Complex, Fort Campbell, KY

Project Cost: \$10,000,000 / 50,000 SF

Scope: Company operations facilities provide administrative and supply structures for unit personnel functions and storage of equipment. These facilities serve as the primary staging, training, and deployment center for personnel and their individualized gear and include an office building, open warehouse building, and exterior covered hardstand

West Virginia Air National Guard – ADAL Security Forces Building 142, Charleston, WV

Project Cost: \$3,000,000 / 8,000 SF

Scope: The new facility serves as the command center for the direction of security, law enforcement, crime prevention, investigation, training and information, as well as for personnel security and resource protection. It also serves as an armory and the site for unit supply.

Cory Sharrard, PE, LEED AP | GRW Mechanical Engineer



YEARS OF EXPERIENCE:

With GRW: 1
Total: 21

EDUCATION

B.S., Industrial Technology, 1996,
Murray State University

B.S., Mechanical Engineering,
1998, University of Kentucky

REGISTRATION

Professional Engineer: KY, IN,
OH, WV, NY, FL, TN

NCEES Member allows
reciprocity with other states

LEED AP

PROFESSIONAL AFFILIATIONS AND TRAINING

Kentucky Local Correctional
Facilities Construction Authority
Board (through 2023)

American Society of Heating,
Refrigerating and Air-
Conditioning Engineers
(ASHRAE) - Board of Governors,
Bluegrass Chapter

Kentucky Society of Professional
Engineers (KSPE) - Professional
Development Committee (Vice
Chair), Bylaws & Operational
Procedures Committee, Ethical
Practices Committee

Society of American Military
Engineers (SAME)

Society of Marketing
Professional Services (SMPS) -
Past President

Cory possess more than 20 years' experience with mechanical engineering including design of traditional water source heat pump (WSHP), geothermal WSHP, hybrid geothermal WSHP, variable refrigerant flow (VRV), split system, rooftop units, unit ventilators, variable air volume (VAV), and ice storage systems. Her experience includes numerous K-12, higher education, vocation school, detention center, church, and library projects.

RELEVANT PROJECT EXPERIENCE

West Virginia Division of Natural Resources Building 74 Renovation, , – Project Manager. Evaluation and recommendations for possible improvements and upgrades to building systems in three-story, 37,000 SF, masonry-construction facility that houses approximately 100 employees. Among the improvements selected for design are the replacement of the following: heating and cooling systems, windows, T5 lighting with LED fixtures, and replacement of ceilings and floor finishes.

West Virginia ARNG Martinsburg Secure Facility, Martinsburg, WV – Mechanical Engineer. Renovations to 2-story area (6,200 SF per level) to provide new secure office space and related support spaces for specific using agency. Includes HVAC replacement; new interior finishes (including raised access flooring), structural roof deck and roofing system, elevator and fire stairs, building security and cameras, and site security fencing, sliding vehicular security gates, exterior parking; and site utility and storm drainage improvements.

West Virginia Department of Highways District 1 Vehicle Maintenance and Equipment Shops Building, Charleston, WV – Mechanical Engineer. Approximate 35,000 SF facility includes: 8 heavy vehicle repair bays; 6 light vehicle repair bays; 2 welding bays; wash bay; small engine shop; parts and tire storage areas; offices; 2 cranes serving repair bays; 1 crane serving entire weld shop area; freight elevator; perimeter fencing; keycard entry system; and generator. Structure features cavity walls with concrete panel backup, petroleum resistant concrete floors, and metal roofing over rigid insulation, metal decking, and bar joists.

Clay County BOE Clay County High School Renovations, Clay, WV – Mechanical Engineer. Design and construction administration phase services for gymnasium and locker rooms, commons area, and HVAC system renovations; door/window replacement; and security/communications system improvements. Portion of construction will occur during summer months, but much will be completed while school is occupied.

Berea College Seabury Center Renovation, Berea, KY – Mechanical Engineer. Design services to renovate two existing racquetball courts into office suites for coaches and create separate entry for Athletics Department. Proposed design involves addition of flooring/ceiling system to create two-story office suite, as well as enclosure of portion of lobby with aluminum/glass wall at lower level to create reception space.

Petersburg Federal Correction Institution Food Service Building, Hopewell, VA – Mechanical Engineer. Demolition and replacement of existing aged 22,000 SF dining and food service building with new 23,500 SF medium-security facility completed in two phases to accommodate Owner's funding allocation. Includes new food preparation area (including kitchen, coolers/freezers, dry storage, food prep areas, and dishwash); main dining hall with serving line for approximately 400 persons; separate staff dining area for approximately 40 persons; dock and receiving area; new security fencing and gates; reconfiguration of existing site utilities; and complete integration of new security electronics system with existing campus-wide system.

Pulaski County Schools Bus Maintenance Garage, Somerset, KY – Mechanical Engineer. New 11,036 SF, pre-engineered metal building with three drive-through maintenance bays equipped with motorized, vertical lift sectional doors with space for six buses; tire room; work room; parts room; toilets; break room; waiting area; office; and mezzanine storage/mechanical area. Also included 3 in-ground, adjustable bus lifts; concrete floor with trench drains and oil/water separator; fire suppression system; centralized vehicle fluids system piped to 4 central dispensing locations; compressed air system; vehicle exhaust systems; overhead radiant system and ventilation in bus bays; and complete HVAC in office areas.

Berea College Facilities Maintenance and Auxiliary Maintenance Buildings, Berea, KY – Mechanical Engineer. New 37,445 SF pre-engineered metal Facilities Maintenance (FM) and 15,504 SF pre-engineered metal Auxiliary Maintenance (AM) buildings to unify and improve efficiency for Facilities Maintenance Departments. FM building includes office space; office support spaces; maintenance work areas for each department; multipurpose lunchroom/classroom for 60+ staff; toilet/shower/locker area; general work/storage area; additional mezzanine storage area with freight service elevator access; unit heaters and exhaust/air circulation systems in shop areas; HVAC in office areas via one central roof top unit; and building wide fire suppression. AM building includes: vehicle repair area with two, slab-supported lifts; vehicle wash bay; bus storage; campus recycling center with industrial cardboard bailer and paper shredder; offices; bathrooms; additional overflow storage area; and 30 electric cart maintenance vehicle charging/parking spaces. Both buildings have card reader access, motorized overhead doors, man doors, concrete floors with trench drains where applicable, and oil/water separator systems.

Fayette County Public Schools Facility Surveys, Lexington, KY – Mechanical Engineer.

Lewis County Schools Facilities Surveys, Tolleboro, KY – Mechanical Engineer.

Scott County Schools Facility Surveys, Georgetown, KY – Mechanical Engineer.

Frankfort Public Safety Facility and Emergency Operations Center, Frankfort, KY – Mechanical Engineer.

Patrick Baisden, PE, LEED AP BD+C | GRW Electrical Engineer



YEARS OF EXPERIENCE:

With GRW: 11

Total: 23

EDUCATION

B.S., Electrical Engineering, 1997,
University of Kentucky

REGISTRATION

Professional Engineer, Electrical:
KY, IN, WV, OR, NM, SC

NCEES Member allows
reciprocity with other
states LEED Accredited
Professional, Building Design +
Construction

RELEVANT PROJECT EXPERIENCE

West Virginia ANG 130th Airlift Wing Security Forces Squadron Facility Renovation and Expansion, Charleston, WV – Electrical Engineer.

Complete architectural and engineering Type A, B and C services for \$2 million renovation of 5,395 SF SFS facility (B142) including addition of 2,500 SF administrative and training space to better serve unit. Project (MILCON/SRM split funded) increases space and improves mission performance and operational efficiency for command and administrative functions in ways that are energy efficient, code compliant and in accordance with current ANG policies. Project meets LEED Silver design criteria, and all AT/FP and ADAAG requirements.

Indiana ARNG 76th Brigade Combat Team Readiness Center, Lawrence, IN – Electrical Engineer.

Planning, design and construction administration services for a new 109,555 SF, 2-story Readiness Center and 8,300 SF unheated storage facility..

West Virginia ARNG Martinsburg Secure Facility, Martinsburg, WV –

Electrical Engineer. Renovations to 2-story area (6,200 SF per level) to provide new secure office space and related support spaces.

West Virginia ARNG Camp Dawson Ranges at Briery Mountain, Kingwood, WV – Electrical Engineer.

Project includes design and construction of new Hand Grenade Familiarization Range and Live Fire Exercise Breach (LFEB) Training Range at Briery Mountain Training area to conform site to government standard Breach Range Design Requirements.

Aliceville Federal Correctional Institution and Satellite Camp, Aliceville, AL – Electrical Engineer.

Design-build delivery of \$196 million, LEED Silver women's medium-security Federal Correctional Institution (70-acre site) and minimum-security Federal Prison Camp (20-acre site) totaling 665,889 SF, housing approximately 1,790 inmates. FCI includes three 4-story housing.

West Virginia ANG 167th Airlift Wing Maintenance Mall (Building 307) Repair, Martinsburg, WV – Electrical Engineer.

Concept Development Report included detailed discussion of current electrical, architectural and HVAC system problems; recommendations to resolve large-system problems, as well as particular solutions for small areas; conceptual level drawings; conceptual level outline specification; and cost estimate.

West Virginia ANG 130th Airlift Wing Squadron Operations Facility Repair, Charleston, WV – Electrical Engineer.

Design services for \$3 million renovation and energy-efficient improvements to 25,765 SF facility. Designed to achieve USGBC LEED Certified rating, meet all ANG Sustainable Design criteria and utilize MILCON/SRM split funding.

West Virginia ANG 167th Airlift Wing Munitions Storage, Martinsburg, WV – Electrical Engineer.

West Virginia Department of Highways District 1 Vehicle Maintenance and Equipment Shops Building, Charleston, WV – Electrical Engineer.

Approximate 35,000 SF facility

Pulaski County Southwestern High School Addition and Renovation, Somerset, KY – Electrical Engineer.

Shane Lyle, AIA, LEED AP BD+C | GRW Architect



YEARS OF EXPERIENCE:

With GRW: 31

Total: 37

EDUCATION

Bachelor of Architecture (with honors), 1983, University of Kentucky

REGISTRATION

Registered Architect: KY, WV, TN, AL, GA, IN, TX, MS, SC, FL, MO, AZ, NM, CA, WA, KS

National Council of Architectural Registration Boards (NCARB) Certification

LEED Accredited Professional, Building Design + Construction

Certified Interior Designer: Kentucky

PROFESSIONAL AFFILIATIONS AND TRAINING

American Institute of Architects

Past President - AIA East Kentucky Chapter Board of Directors

American Correctional Association (ACA)

RELEVANT PROJECT EXPERIENCE

West Virginia ANG 130th Airlift Wing Security Forces Squadron Facility Renovation and Expansion, Charleston, WV – Principal. Complete architectural and engineering Type A, B and C services for \$2 million renovation of 5,395 SF SFS facility (B142) including addition of 2,500 SF administrative and training space.

West Virginia ARNG Martinsburg Secure Facility, Martinsburg, WV – Project Manager. Renovations to 2-story area (6,200 SF per level) to provide new secure office space and related support spaces.

West Virginia ARNG Joint Armed Forces Reserve Center and Area Maintenance Support Activity, Ripley, WV – Architect. Preparation of a Program Planning Document Charrette for replacement of two loal armories and a USAR center with aging facilities / site limitations, with a new, \$17 million Joint AFRC and support facilities on a 94-acre site.

West Virginia ARNG Camp Dawson Volkstone Training Area Utility Upgrade, Kingwood, WV – Principal. Expansion of sewer (1,996 LF), water (1,996 LF) and electric (1,797 LF) to all existing and future buildings, unit training equipment site (UTES) and wash rack locations.

West Virginia ARNG Camp Dawson Ranges at Briery Mountain, Kingwood, WV – Principal. Project design of access road to the remote site, electrical connections, breaching structures, open covered range operations and control shelter, storage building, covered viewing stands, parking.

West Virginia ANG 167th Airlift Wing Maintenance Mall (Building 307) Repair, Martinsburg, WV – Principal.

West Virginia ANG 167th Airlift Wing C-17 Maintenance Hangar Modifications, Martinsburg, WV – Project Manager.

West Virginia ANG 167th Airlift Wing C-17 Fuel Cell Hangar Modifications, Martinsburg, WV – Project Manager.

West Virginia ANG 167th Airlift Wing C-17 Corrosion Control Hangar Modifications, Martinsburg, WV – Project Manager.

West Virginia ANG 167th Airlift Wing C-17 Composite Material Shop, Martinsburg, WV – Project Manager.

West Virginia ANG 130th Airlift Wing Squadron Operations Facility Repair, Charleston, WV – Principal. Design services for \$3 million renovation and energy-efficient improvements to 25,765 SF facility.

West Virginia ANG 130th Airlift Wing Building 107 Renovation, Charleston, WV – Principal. Scope included design to repurpose unoccupied hangar into space for Aeromedical Evacuation Squadron (AES).

Aliceville Federal Correctional Institution and Satellite Camp, Aliceville, AL – Project Manager.

Ohio ARNG Joint Armed Forces Reserve Center and Field Maintenance Shop Complex, Springfield, OH – Architect.

Kentucky ANG 123rd Airlift Wing Contingency Response Group Facility, Louisville, KY – Principal-in-Charge.

Mike Asalon, PE | GRW Civil Engineer



YEARS OF EXPERIENCE:

With GRW: 5

Total: 15

EDUCATION

B.S., Civil Engineering, 2003,
University of Kentucky

REGISTRATION

Professional Engineer: KY

PROFESSIONAL AFFILIATIONS AND TRAINING

Kentucky Society of Professional
Engineers (KSPE)

RELEVANT PROJECT EXPERIENCE

West Virginia ARNG Martinsburg Secure Facility, Martinsburg, WV –

Civil Engineer. Renovations to 2-story area (6,200 SF per level) to provide new secure office space and related support spaces for specific using agency. Includes building security and cameras, and site security fencing, sliding vehicular security gates, exterior parking; and site utility and storm drainage improvements – and many other items.

Southeast Kentucky Correctional Center Renovation, Wheelwright, KY –

Civil Engineer. Renovations involved ADA, fire alarm, locking controls, fire suppression, and PREA upgrades, new smoke evacuation system.

Petersburg Federal Correction Institution Food Service Building,

Hopewell, VA – Civil Engineer. Demolition and replacement of existing aged 22,000 SF dining and food service building with new 23,500 SF medium-security facility completed in two phases to accommodate Owner's funding.

Frankfort Plant Board Administration Building, Frankfort, KY –

Construction Administration. New three-level, 46,000 SF administration building on 30-acre site

National Responder Preparedness Center Site Expansion, Greenville, KY

– Civil Engineer. Project includes paving, drainage, and fencing improvements at existing first responder training area, as well as new access road and driving course for expansion.

Frankfort Plant Board Headend Telecommunications Facility, Frankfort,

KY – Construction Administration. New 6,725 SF telecommunications "headend" facility designed to accommodate forces from natural disasters. Mechanical and electrical system redundancy included backup generator, UPS and DC plant to maintain facilities operations.

Blue Grass Army Depot Visitor Control Center and Battlefield Memorial Highway Revisions, Richmond, KY –

Project Manager. Design and construction administration services for design-build project at main visitor control center (VCC). VCC structures, signage, fencing, utilities, pavement, and pedestrian facilities improvements were also included.

FibroTex Manufacturing Facility Renovation and Expansion, Stearns, KY

– Civil Engineer. Design-build project including addition/renovation of approximately 80,000 SF to textile manufacturing facility.

East Kentucky Power Cooperative H.L. Spurlock Station Site Security Improvements, Maysville, KY –

Project Manager. Fast-track assignment included fencing, gates and turnstiles; security camera systems; traffic and personnel monitoring equipment; controls and hardware; and electrical power at Gates 1 and 2, and multiple roadway improvements.

CoreCivic Marion Adjustment Center Renovation, St. Mary, KY –

Civil Engineer. Site, security, electrical, and architectural improvements within 21,500 SF, 3-story structure.

Berea College Facilities Maintenance and Auxiliary Maintenance

Buildings, Berea, KY – Civil Engineer. New 37,445 SF pre-engineered metal Facilities Maintenance (FM) and 15,504 SF pre-engineered metal Auxiliary Maintenance (AM) buildings to unify and improve efficiency.

Dave Hoy, PE | GRW Structural Engineer



YEARS OF EXPERIENCE:

With GRW: 13

Total: 13

EDUCATION

B.S., Civil Engineering, 2006,
West Virginia University

REGISTRATION

Professional Engineer: WV, KY,
IN, TN, NC, OH, VA

PROFESSIONAL AFFILIATIONS AND TRAINING

American Society of Civil
Engineers

RELEVANT PROJECT EXPERIENCE

West Virginia ANG 167th Airlift Wing C-17 Maintenance Hangar

Modifications, Martinsburg, WV – Structural Engineer. Fast-track design of maintenance hangar modifications required to meet 167AW's change in mission from C-5 to C-17 aircraft.

West Virginia ANG 167th Airlift Wing C-17 Fuel Cell Hangar

Modifications, Martinsburg, WV – Structural Engineer. Fast-track design of fuel cell hangar modifications required to meet 167AW's change in mission from C-5 to C-17 aircraft.

West Virginia ANG 167th Airlift Wing C-17 Corrosion Control Hangar

Modifications, Martinsburg, WV – Structural Engineer. Fast-track design of corrosion control hangar modifications required to meet 167AW's change in mission from C-5 to C-17 aircraft.

West Virginia ANG 167th Airlift Wing C-17 Composite Material Shop, Martinsburg, WV

– Structural Engineer. Fast-track design of 7,600 SF composite material shop to the existing corrosion control hangar required to meet 167AW's change in mission from C-5 to C-17 aircraft.

West Virginia Department of Highways District 1 Vehicle Maintenance and Equipment Shops Building, Charleston, WV

– Structural Engineer. Approximate 35,000 SF facility includes: 8 heavy vehicle repair bays; 6 light vehicle repair bays; 2 welding bays; wash bay; small engine shop; parts and tire storage areas; offices; 2 cranes serving repair bays; 1 crane serving entire weld shop area; freight elevator; perimeter fencing; keycard entry system; and generator. Structure features cavity walls with concrete panel backup, petroleum resistant concrete floors, and metal roofing over rigid insulation, metal decking, and bar joists.

West Virginia Department of Highways District 1 State Road Commission Building, Charleston, WV

– Structural Engineer. Renovation of historic 40,000 SF building to house offices and support facilities.

Ritchie County School District Smithville Elementary School

Renovation/Addition, Smithville, WV – Structural Engineer. Demolition of two buildings in existing four-building complex and design of new classroom wing and kitchen addition adjacent to remaining buildings to create single facility under one roof. Also included access control and improved security, new HVAC systems, compliance with ADA/ABA requirements throughout, and renovated restrooms.

Lewis County Schools Jane Lew Elementary School Addition, Jane Lew, WV

– Structural Engineer. Addition includes five new classrooms, updated officer suite, and new building entrance and bus loop, along with new HVAC system for addition.

Clay County Schools New Bus Garage, Clay, WV

– Structural Engineer.

Clay County High School Renovation and Addition, Clay, WV

– Structural Engineer. Design and construction administration phase services for gymnasium and locker rooms, commons area, and HVAC system renovations; door/window replacement; and security/communications system improvements.

4.0 Approach & Methodology for Meeting Goals & Objectives | Project Management & Controls

The West Virginia Department of Administration along with the West Virginia Army National Guard are embarking on an important project to complete Commissioning Services for the Buckhannon Readiness Center Phase II Addition. **Following is a detailed discussion of our approach and methodology for meeting your stated goals and objectives for this project. This narrative also confirms our plans for project management, as well as quality and cost control.**

GRW Initial Actions for Award of Contract Package

Upon award of the commissioning services contract package GRW will immediately set out to thoroughly document our work scope and deliverables in the form of a “living” Commissioning Plan and associated contract documents. We will seek to engage with the Contract Officer and become re-oriented with WVARNG methods and procedures per our previous commissioning work on Phase I of the Buckhannon Readiness Center and requirements detailed in the Expression of Interest (EOI).

FCG will serve as a sub-consultant for this project to GRW and will provide commissioning services to bridge the gaps between the Owner, the Design Team, the Construction Team and Vendors using a process employing:

- Thorough review of design and submittal documents
- Progress and coordination meeting attendance
- Resolution Tracking Form
- System Verification Checklists
- Start-up involvement for equipment
- Functional Performance Tests
- O&M and as-built documentation corroboration
- Specified factory service and off-season mode testing enforcement
- O&M training facilitation and recording

- Integration of subsystems to perform as a cohesive overall system
- Point of contact references for warranty action
- A final commissioning report including an executive summary

Facility Commissioning Group (FCG)

maintains OSHA 10 and OSHA 30 certifications for site personnel and routine safety talks and webinars for our personnel that we will immediately augment training protocols for to integrate personnel to safety requirements of the project for our personnel. FCG management holds the well-being and safety of our personnel and those we interact with as the highest priority of our work efforts.

COVID-19 presents an evolving safety and security concern that GRW and FCG will address in our plans to comply with federal, National Guard, state and local workplace requirements in an ongoing manner to meet the changing virus transmission environment. We have provided essential services throughout this pandemic making us quite familiar with institutional and government provisions for working as safely as possible.



Cybersecurity

FCG utilizes cloud-based document and IT solutions to accomplish our work efficiently. FCG takes cybersecurity risks seriously with respect to client provided and project generated documentation. FCG cybersecurity policies align closely with NIST's Cybersecurity Framework and the recommended requirements set forth in NIST 800-171 Rev 2 – Protecting Controlled Unclassified Information in Nonfederal Systems and Organizations. FCG's network topology and cybersecurity approach has recently been updated in response to COVID-19 with a thorough review and update of related Standard Operating procedures (SOP's) and Methods of Procedure (MOP's).

Mobile Device Management (MDM) has been deployed on all devices and project data has been segmented into internal and external access via GRW's Newforma Project Center. Newforma can be accessed from within GRW's network by our staff or externally

via the Internet through secure web interface. Data is accessible through selectively controlled user access.



FCG will comply with project cybersecurity requirements related to documents and electronic communications on FCG's internal system/networks and has an extensive familiarity with a multitude of project management portals and tools. FCG has proven capabilities of delivering commissioning products directly to a Computerized Maintenance Management System (CMMS) and SCADA systems that can incorporate tagging identification of equipment. Our commissioning package deliverables will be focused on the needs of maintenance technicians to provide familiar ease of use for turnover directly translating into operational efficiencies.

Commissioning Project Approach Overview

GRW proposes the following overall technical approach to this project, including staffing, commissioning plan, deliverables, and quality control. Approach is continually tuned to create necessary adjustments for meeting Owner's Project Requirements (OPR) and project team needs in real time. Commissioning services will comply with contract document and process requirements listed in ASHRAE 189.1 Section 10.3.1.2.



GRW can provide large national A/E firm assets, such as advanced software and technology capabilities, abundant staff, and marketing departments, vast experience, and renowned/quality engineering, and detailed understanding of prevailing codes, standards and regulations.

This is further demonstrated in our organizational chart showing potential in-house architectural and engineering support services team members that can

be utilized.



FCG is a regional small business engineering firm exclusively focused on commissioning serving clients primarily in Kentucky, Indiana, Tennessee, and West Virginia from our Lexington, Kentucky

headquarters. Starting with unequalled personnel training and continuing education, FCG provides certified and licenses professionals delivered as an in-house commissioning provider group (CxPG) led by an ACG Certified Commissioning Authority (CxA). We combine our technical expertise with informed client prerogatives by developing professional relationships early on and building strong connections with the Owner and/or owner representatives.

FCG performs and delivers commissioning services from smart information platforms customized for security and user interfaces to meet project demands and deadlines without use of 3rd-party proprietary software, and we are fully capable of integrating our

methods with client or project team construction management software or computerized maintenance management systems (CMMS).



Bill Brewer, PE (GRW), will serve as the project manager for the commissioning process. Jim Magee, CxA (FCG), will serve as the onsite Commissioning Authority leading an integrated multi-disciplinary team composed of experienced professionals in mechanical, building automation, electrical/lighting, plumbing, renewable and building envelope disciplines to meet experience and technical requirements matching GRW and FCG skill sets with the



scope of systems to be commissioned as detailed in ASHRAE 189.1. Appropriately certified and credentialed specialists and technicians with professional experience, including Infrared Imaging, Test and Balance, Operations & Maintenance and mission critical methods of procedure will contribute to the overall GRW services effort.

Credentials of the specific individuals of GRW and FCG personnel are shown on the Organizational Chart in **Section 3.0**. The outline of anticipated duties for FCG personnel is as follows:

OUTLINE OF ANTICIPATED DUTIES

- **Jim Magee** will organize the commissioning team and will represent executive authority for document control and deliverables with oversight and communicating to Bill Brewer/GRW. Jim will supervise commissioning project management and coordination of Owner’s Project Requirements with the commissioning plan and site activities. Jim will oversee creation of the commissioning plan, system verification checklists and functional performance tests during the construction, acceptance, and warranty phases of the project.
- **Jim Adams** will be responsible for site project management and direction of the commissioning plan creation and site execution, directing field operations, developing commissioning protocols and document control. Jim will provide professional engineering services for Lighting,

Lighting Controls, technical support, System Verification Checklists and developing and performing Functional Performance Tests.

- **Todd Yates** will review HVAC, HVAC Controls, and provide professional engineering services as needed to support the commissioning process.
- **Alex Cowan** will provide expertise for the Building Automated Control System with site observations, sequence of operation verification and functional performance writing/testing for the related building systems of the project.
- **Brandon Moore** will provide administration for this project to include document distribution, commissioning work plan and report production and document control. Brandon will provide communication support for the commissioning team and implement a professional approach to the delivery of Facility Commissioning Group quality standards for this project.

The GRW CxPG proposed for this project is comprised of professionally licensed consultants – commissioning, mechanical, plumbing, electrical, IT, emergency power, energy management, fire protection, and architectural – as well as experienced building operators, construction professionals, seasoned controls specialists, certified TAB Engineers, former equipment service team managers, master tradesmen, a Level 1 certified thermography technician, and building envelope consulting and diagnostic testing specialists.

FCG offers a commissioning provider group that excels in experience and performance of the work required for successful and timely completion of this project:

- One (1) West Virginia licensed Mechanical professional engineers,
- One (1) Kentucky licensed electrical professional engineer,
- Five (5) ACG certified CxAs, and
- In-house specialists/technicians/administration/IT support infrastructure demonstrate detailed knowledge and experience with applicable life safety codes, regulations, and procedures analyzed and disseminated using customized management and communication means utilizing multi-disciplinary team skills integrated by proven commissioning process.

Commissioning Plan

Commissioning Plan (Cx Plan) development starts with our Expression of Interest (EOI) preparation and evolves from the contents of these responses and the accepted proposal. When we are awarded the privilege and responsibility to commission the systems stated in this EOI our Commissioning Administrator, Brandon Moore, will acquire documents and work with the CxA to build an equipment list and project schedule.



FCG Document Group prepares Document Directory Structure and the FCG procurement official, Todd Yates meets with Brandon Moore and the FCG Document Group and Jim Magee, the assigned CxA to transfer project information from procurement officials to the CxPG, including proposal details and complete scope requirements.

Commissioning (Cx) Plan development will address detailed:

- Commissioning Provider Responsibilities,
- Cx Authority Requirements During Design,
- Cx Requirements During Construction,
- Coordinated Commissioning and Testing Schedule,
- O&M Manuals and Training Plan, and
- Cx Requirements During the Occupancy Operations and Training Phase, all corresponding to ASHRAE 189.1 requirements.

Assimilation of this vast amount of information into an effective Commissioning Plan begins with CxPG engagement with design and then construction personnel and owner representatives to review and update an Owner's Project Requirements (OPR)

document at 50% design and conduct a second design review of the final contract documents. The OPR is very useful in back checking that the Basis of Design (BOD) documents capture project prerogatives, and that these details are carried through the construction, acceptance and occupancy phases of the project without distortion and modified as needed to meet evolving Owner and user needs.

This OPR maintenance is essential and requires communication and meetings to establish and refine so that it is a valid platform upon which Functional Performance Test pass/fail criteria can be established.

The OPR backbone encompasses accurate creation of deliverables such as design reviews, submittal reviews, start-up reports, systems verification checklists, functional performance tests, off season mode testing, training plans, systems manual, and near end of warranty review procedures. We offer a variety of electronic delivery platforms selected based on client document and security requirements.

FCG typically delivers the Cx Plan during a scheduled Construction Phase Commissioning Kick-Off meeting during the early rough-in stage of projects, and we monitor the plan implementation and updates throughout installation and acceptance testing whereupon the site plan elements are reassembled as components of the final Cx Report.

Follow-up will occur during normally scheduled site visits to review that the plan's prefunctional/ installation checklists are being completed by contractors as a prerequisite to conducting our functional performance testing.



Commissioning Meetings and Facilitation

This requires coordination between the Commissioning Authority, National Guard personnel, design team members and the construction project team. Bill will organize the provider group to communicate along appropriate lines within the project team and this might begin with the project manager for the West Virginia Army Reserve National Guard. In addition to attending pre-construction and preinstallation meetings, we will participate in construction progress meetings, and conduct a kick-off meeting and commissioning planning and execution meetings.

- a. **Construction progress meetings** – attend scheduled construction progress meeting as requested. For efficiency, site visits will be scheduled to coincide with these meetings if the progress of the work permits.
- b. **Kick-off meeting** - When the project is in the construction phase, GRW will conduct a kick-off meeting with the design and construction teams to discuss the commissioning scope and review the commissioning plan. The construction team will be asked to review the commissioning plan, checklists and test procedures to insure that they reflect fairly and accurately the requirements of the design documents. The purpose of this review will be to obtain buy-in from the contractors that they realize the commissioning process is only a tool that helps document they have met their contractual requirements for installation and completion of systems and preparation of the owner for occupancy. During the kick-off meeting we will coordinate our requirements for shop drawings so that we can efficiently review them as the shops are being cycled through the contractors and design team. We will also coordinate other review requirements such as the final TAB report. We will confirm protocols to be used in managing and following the commissioning process.
- c. **Commissioning planning and execution meetings** - Meetings will occur on an as needed basis, and will be scheduled to coincide with regular site visits to observe the work and to functionally test the systems.
- d. **Meeting coordination and minutes** - We will prepare agendas, attendance lists, arrange for meeting facilities, and notify in a timely manner participants for each commissioning event. We will act as chair at all commissioning events and monitor execution of agenda items. We will prepare minutes of the commissioning events and send copies to commissioning team members and attendees.

Diagnostic and Functional Performance Testing (FPT's)

FPT's benefit projects when applied in a timely planned appropriate manner and FCG are experts at designing testing protocols and verification procedures relying on manufacturer information and our engineering capabilities. Unlike the majority of commissioning firms, FCG embraces conducting diagnostic tests and functional testing by employing and training a variety

of technicians. This would include being physically on site for testing equipment to visually watch the function of the equipment as we perform testing. We have a complete testing equipment and instrumentation inventory available locally and we pride ourselves on troubleshooting and diagnostic success.

Project Schedule

We will participate with the Contractors in scheduling activities required for the commissioning process. The Commissioning Plan, identifies the construction activities that must be completed for the commissioning to be scheduled. We will ask that these activities be included in the construction schedule (if they are already not included).

Effective and timely communication of field results is crucial to moving the quality and project schedule forward. Therefore, conveying the information in a manner that can be received and understood, clearly

articulating consequences and options, dramatically increases the positive influences of the commissioning process.

Near substantial completion, many occupancy coordination issues need to be addressed while Functional Performance Tests continue. We provide frequent updated schedules during functional testing to highlight activities that may require specific environmental conditions or may impact building occupancy, coordinating to avoid interruptions of the hospital mission.

Documentation and Archiving

Documentation represents important aspects of the commissioning process that can reduce the value of the end product if not properly attended to by the CxA. Training Plans, Systems Manuals, and Owner's Project Requirements have inherent value to the owner only if properly assimilated into the facility department's workflow. FCG strives to coordinate with our client early to discern how commissioning deliverables can be leveraged to streamline inventory, bin control, asset management, preventative

maintenance scheduling and work order production. FCG employs creative approaches to support our clients during transition to operational sustainability. We take this seriously enough assign an entire division of our CxPG to assist with easing turnover stresses and proactively addressing accreditation and compliance issues in advance starting in design phase with preparing solid bid package documents and continuing through the project phases into sustained operation.

Mechanical Systems

FCG approach for these system(s) includes but is not limited to the following:

- Thorough design review of commissioned systems documentation (plans, specs, addendums, RFIs, SI's, CO's, etc.).
- Review submittals for compliance with Owner's Project Requirements, Basis of Design, Construction Documents, integration and compatibility of systems and equipment, testing provisions, and start-up, warranty, operation and maintenance provisions.
- Delivery of non-cumbersome system verification checklists via media appropriate for various commissioning team members (can vary from smart device, to files for paper delivery).
- Team oriented hands-on site performance working with contractors, owner representatives and management to implement successful acceptance phase testing.
- Diagnostic and Functional Performance Testing benefits when applied in a timely planned appropriate manner and FCG is expertly qualified at designing testing protocols and verification

- procedures relying on manufacturer information and our engineering capabilities.
- FCG embraces diagnostic tests and functional testing by employing and training a variety of technicians and experts. Our instrumentation and testing equipment inventory meet the needs of this project without renting or borrowing equipment.
- FCG possesses complete testing equipment and calibrated instrumentation inventory available in-house and we pride ourselves on troubleshooting and diagnostic success.
- FCG has familiarity with DDC controls and BAS front end computers enabling utilization of installed software capabilities to streamline test procedures and develop manufacturer and project specific test scripts.

Building Automation System (BAS)

FCG approach for these system(s) includes but is not limited to the following:

- Thorough review of the BAS controls submittal is critical to understanding both the architecture and the integration requirements that will affect the overall system performance and the testing procedures required to execute the SVC's and FPT's successfully.
- FPT's are built in a modular fashion to include project specific requirements and separate sections addressing requirements for hardware functionality (I/O operation) and software functionality (Sequence of Operations). This makes FPT scripts more useable by maintenance staff.
- Collecting and reviewing the point-to-point verification data sheets from the BAS vendor in conjunction with reviewing the completed SVC's will ensure the BAS is ready for FPT's.
- FPT's are conducted following equipment startup and checkout and Test and Balance (TAB). Verification of TAB readings and data is critical in proving the BAS is operating at optimal performance while reporting data from calibrated input devices.
- FPT's of central equipment and equipment serving critical spaces are conducted at a 100% sample rate. While unitary or terminal equipment serving common or non-critical spaces are strategically tested at a 20% sample rate. Our sample rate is 100%.
- Performing the FPT's through the BAS graphical interface ensures that the reported data mirrors the actual field data readings and helps to ensure reliability of graphical interface for troubleshooting operational issues in the future.

Lighting Controls

FCG approach for this system includes but is not limited to the following:

- IECC (International Energy Conservation Code) and ASHRAE 90.1 provide specific guidance unless otherwise specified on lighting controls functionality and plug load control.
- Plug load control is often times an extension of the lighting control systems and may require additional input from the end-user to avoid problematic installations.
- Preinstallation meeting coordination is essential and needs to be well attended and well documented. Distributed systems such as lighting controls lends itself to sampling as an effective testing method when the stipulated rate is increased if the failure rate is unacceptable.
- Discrete testing (testing between two separate systems) in this case between the lighting control system and BAS will be conducted before the Integrated Systems Test.
- Emergency Lighting (90-minute egress emergency lighting) duration testing will be performed as part of the Integrated Systems Test (IST). Emergency Lighting will be tested prior to IST.
- Intermediate documentation in the form of floor plan PDF markups of failed FPT tests has proven to be an effective method to convey issues to the contractor on distributed systems such as lighting controls. The RTF will still track those issues to resolution.



Building Envelope

FCG approach for these system(s) includes but is not limited to the following:

- FCG possesses extensive building envelope commissioning and diagnostic testing skills and experience to meet and exceed the requirements of this EOI.
- FCG has implemented UFGS, WBDG and USACE building envelope commissioning and diagnostic testing protocols on numerous projects applying appropriate ASTM and ISO standards to bear on 014600 and 07000 specification requirements.
- FCG employs an Indiana licensed architect, certified Level 1 Infrared Thermographer and trained door blower experts for building envelope projects.
- FCG prepares and distributes in advance, detailed system verification checklists covering pre, during and post building envelope diagnostic testing prerequisites and requirements.
- FCG has extensive experience evaluating exterior

enclosure installations and reviewing contractor installation techniques and tests.

- FCG embraces diagnostic tests and functional testing by employing and training a variety of technicians and experts. Our instrumentation and testing equipment inventory meet the needs of projects without renting or borrowing equipment.
- FCG possesses complete testing equipment and calibrated instrumentation inventory available in-house and we pride ourselves on troubleshooting and diagnostic success.
- FCG delivers detailed professional building envelope commissioning reports in electronic and paper formats per client preferences.



Quality Control

File Share Server (FSS) and FCG Document Directory Structure are the backbone of our commissioning process interface.

FCG Document Group directed by the CxA, supported the Cx Administrator and extensively utilized by CxPG members builds an appropriately secured network and creates a file directory containing electronic folders of document templates customized for the project divided into the three categories: Cx Management, Cx Deliverables and Record Documents that branches into the network of subdirectories, folders and files needed to execute the entire project from schematic design through warranty and operation.

Front end organization improves process efficiency and creates consistent recognizable professional documentation that guides site activities. CxPG members are trained on FSS backup, download/upload and security protocols for open access to current documentation.

CxPG members follow document control protocols requiring spell and format checks, peer review and CxA approval aimed at rapid delivery of clear accurate

Cx information. FCG deliverables are fully compatible with commercial commissioning software and construction management platforms.

Experience indicates improved implementation results from requiring practitioners of the specific elements of the Commissioning Plan to write or participate in writing documentation used for those tasks. FCG work product deliverables are created in-house using appropriate templates to facilitate formatting and methodology consistency, but always using project specific construction or bid package documents to develop design reviews, submittal reviews, system verification checklists, functional performance tests, training plans and all pertinent Cx documentation along with tracking and interfacing macros, which allow for continual feedback of commissioning services progress. Utilizing the robust FCG commissioning infrastructure, the CxA approves and directs delivery of commissioning tasks and documentation.

Project Documentation and Security

FCG takes cybersecurity risks seriously with respect to client provided and project generated documentation. FCG cybersecurity policies align closely with NIST's Cybersecurity Framework and the recommended requirements set forth in NIST 800-171 Rev 2 – *Protecting Controlled Unclassified Information in Nonfederal Systems and Organizations*. FCG's network topology and cybersecurity approach has recently been updated in response to COVID-19 with a thorough review and update of related Standard Operating procedures (SOP's) and Methods of Procedure (MOP's). Mobile Device Management

(MDM) has been deployed on all devices and project data has been segmented into internal and external access via SharePoint libraries for non-sensitive documentation; sensitive data is only accessible through VPN access to FCG's File Share Server (FSS) for selectively controlled user access.

FCG will comply with project cybersecurity requirements related to documents and electronic communications on FCG's internal system/networks and has an extensive familiarity with a multitude of project management portals and tools.

Training, Operation, and Maintenance

GRW and FCG's provider group brings with them decades of systems maintenance and operations (management and supervisory) experience and the associated skillsets working with maintenance staff, complying with required codes and sustaining employee training acuity. End-of-Project Integrated Systems Tests FCG employs on our projects affords additional training reinforcement and requires a high degree of coordination to execute involving the entire project team. FCG excels at conducting owner-oriented project team integrated training delivered from a project customized IT platform.

FCG's has initiated enhanced training protocols for current projects that need mitigation where social distancing cannot be achieved. Designating on-site classroom training utilizing video conferencing (VC) software and redundant communications allows for off-site attendance, on-site remote attendance and safely conducted training at the equipment locations by select end-users. This approach allows a select few to be in the room at the equipment, where a larger group can be in a nearby classroom via web conference and non-essential attendees can attend remotely. This allows a more robust conversation on the systems being trained on. Training methods of procedure are formulated to meet pandemic regulations.

Commissioning Report and Systems Manual are available to GRW clients in any print or electronic format from paper copies or searchable PDF's, to uploads to CMMS with inventory and work order data base population as required.



5.0 References

GRW understands that professional consulting begins as a relationship built on trust. We fully understand the importance of gaining your respect, proving our worth, and being there long after your successful project is completed. With repeat clients providing more than 90 percent of GRW's current workload, we believe this is a testament to our business philosophy of providing close, personal, high quality service. We invite you to contact our references to verify GRW's performance.

West Virginia Army National Guard

Matthew T. Reynolds
(304) 561-6568
matthew.t.reynolds18nfg@mail.mil

West Virginia Air National Guard

Maj. Emerson C. Slack, Deputy BCE
(304) 616-5233
emerson.c.slack.mil@mail.mil

Ohio Army National Guard

Lt. Col. Greg Rogers, Deputy CFMO
(614) 336-7194
gregory.rogers1@us.army.mil



Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

State of West Virginia
 Centralized Expression of Interest
 26 – Medical

Proc Folder: 770845

Doc Description: EOI- Buckhannon Phase II Addition-Commissioning Services

Proc Type: Central Purchase Order

Date Issued	Solicitation Closes	Solicitation No	Version
2020-08-17	2020-09-03 13:30:00	CEOI 0603 ADJ2100000006	1

BID RECEIVING LOCATION

BID CLERK
 DEPARTMENT OF ADMINISTRATION
 PURCHASING DIVISION
 2019 WASHINGTON ST E
 CHARLESTON WV 25305
 US

VENDOR

Vendor Name, Address and Telephone Number:

GRW
 801 Corporate Drive
 Lexington, KY 40503
 (859) 223-3999

FOR INFORMATION CONTACT THE BUYER

Tara Lyle
 (304) 558-2544
 tara.l.lyle@wv.gov

Signature X

FEIN #

61-0665036

DATE

9/1/2020

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION:

The West Virginia Purchasing Division, for the agency, the West Virginia Army National Guard, Construction and Facilities Management Office, is soliciting Expressions of Interest from qualified firms to provide professional engineering commissioning services related to the construction of an Addition to the Buckhannon Readiness Center, located in, Buckhannon, WV, per the attached documentation.

INVOICE TO		SHIP TO	
DIVISION ENGINEERING & FACILITIES ADJUTANT GENERALS OFFICE 1707 COONSKIN DR		BUILDING TRADES SPECIALIST BUCKHANNON READINESS CTR 929 BRUSHY FORK RD	
CHARLESTON	WV25311	BUCKHANNON	WV 26201-2497
US		US	

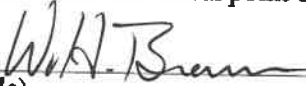
Line	Comm Ln Desc	Qty	Unit Issue
1	EOI- Buckhannon Phase II Addition-Commissioning Services		

Comm Code	Manufacturer	Specification	Model #
81101508			

Extended Description :

EOI- Buckhannon Phase II Addition- Commissioning Services per the attached documentation.

DESIGNATED CONTACT: Vendor appoints the individual identified in this Section as the Contract Administrator and the initial point of contact for matters relating to this Contract.



(Name, Title)
Bill Brewer, PE, LEED AP BD+C - Mechanical Engineer / Project Manager

(Printed Name and Title)
801 Corporate Drive, Lexington, KY 40503

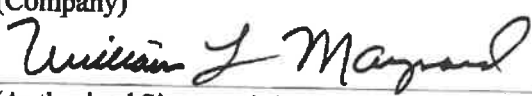
(Address)
859-223-3999, ext 426 / 859-223-8917

(Phone Number) / (Fax Number)
bbrewer@grwinc.com

(email address)

CERTIFICATION AND SIGNATURE: By signing below, or submitting documentation through wvOASIS, I certify that I have reviewed this Solicitation in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that I am authorized by the vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

GRW

(Company)
 GRW Senior Vice President

(Authorized Signature) (Representative Name, Title)

Monty (William) Maynard, PE, LEED AP BD+C GRW Senior Vice President

(Printed Name and Title of Authorized Representative)

9/1/2020

(Date)
859-223-3999, ext 262

(Phone Number) (Fax Number)

STATE OF WEST VIRGINIA
Purchasing Division
PURCHASING AFFIDAVIT

CONSTRUCTION CONTRACTS: Under W. Va. Code § 5-22-1(i), the contracting public entity shall not award a construction contract to any bidder that is known to be in default on any monetary obligation owed to the state or a political subdivision of the state, including, but not limited to, obligations related to payroll taxes, property taxes, sales and use taxes, fire service fees, or other fines or fees.

ALL CONTRACTS: Under W. Va. Code §5A-3-10a, no contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

EXCEPTION: The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. Code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Employer default" means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

"Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceeds five percent of the total contract amount.

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (W. Va. Code §61-5-3) that: (1) for construction contracts, the vendor is not in default on any monetary obligation owed to the state or a political subdivision of the state, and (2) for all other contracts, that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: GRW Engineers, Inc. (GRW)

Authorized Signature: William J Maynard Monty Maynard Date: 9/1/2020

State of Kentucky

County of Fayette, to-wit:

Taken, subscribed, and sworn to before me this 31 day of August, 2020

My Commission Expires August 1, 2022



NOTARY PUBLIC Louise Gorshall



Annual Membership Certificate

Awarded to

Facility Commissioning Group

as a member in good standing of the AABC Commissioning Group for the year

2020

This company has met all requirements for membership and is entitled to all rights and privileges thereof. This certificate is renewable on an annual basis and expires December 31, 2020.

A handwritten signature in blue ink, appearing to read 'Steven Ross'.

Steven "Rusty" Ross, P.E., CxA, EMP, *President*

A handwritten signature in blue ink, appearing to read 'Ray Bert'.

Ray Bert, *Executive Director*



hereby certifies that

James I. Magee, LEED AP
Facility Commissioning Group

has met all prerequisites demonstrating independence and the technical, management, and communications skills required to implement the commissioning process in new and existing buildings, and passed the necessary examination to be awarded this certificate in recognition of their qualifications as an ACG

Certified Commissioning Authority

Registration number: [redacted]. This certificate, valid only for the year 2020, is renewable on an annual basis upon meeting all requirements noted in the CxA Candidate Handbook.



[Signature]
Justin F. Garner, P.E., CxA
Certification Council Chair

[Signature]
Ray Bert
ACG Executive Director





hereby certifies that

V. Todd Yates, P.E.

Facility Commissioning Group (Indianapolis)

has met all prerequisites demonstrating independence and the technical, management, and communications skills required to implement the commissioning process in new and existing buildings, and passed the necessary examination to be awarded this certificate in recognition of their qualifications as an ACG

Certified Commissioning Authority

Registration number: [REDACTED]. This certificate, valid only for the year 2020, is renewable on an annual basis upon meeting all requirements noted in the CxA Candidate Handbook.



[Signature]

Justin F. Garner, P.E., CxA
Certification Council Chair

[Signature]

Ray Bert
ACG Executive Director





hereby certifies that

James W. Adams, P.E.
Facility Commissioning Group

has met all prerequisites demonstrating independence and the technical, management, and communications skills required to implement the commissioning process in new and existing buildings, and passed the necessary examination to be awarded this certificate in recognition of their qualifications as an ACG

Certified Commissioning Authority

Registration number: [REDACTED]. This certificate, valid only for the year 2020, is renewable on an annual basis upon meeting all requirements noted in the CxA Candidate Handbook.



[Signature]

Justin F. Garner, P.E., CxA
Certification Council Chair

[Signature]

Ray Bert
ACG Executive Director



RECOGNIZED PROGRAM

MEETS U.S. DEPARTMENT OF ENERGY GUIDELINES



ISO/IEC 17024
Personnel Certification
Program #1215



hereby certifies that

Alex T. Cowan
Facility Commissioning Group

has met all prerequisites demonstrating independence and the technical, management, and communications skills required to implement the commissioning process in new and existing buildings, and passed the necessary examination to be awarded this certificate in recognition of their qualifications as an ACG

Certified Commissioning Authority

Registration number: [REDACTED]. This certificate, valid only for the year 2020, is renewable on an annual basis upon meeting all requirements noted in the CxA Candidate Handbook.



[Signature]

Justin F. Garner, P.E., CxA
Certification Council Chair

[Signature]

Ray Bert
ACG Executive Director



RECOGNIZED PROGRAM

MEETS U.S. DEPARTMENT OF ENERGY GUIDELINES



ISO/IEC 17024
Personnel Certification
Program #1216



hereby certifies that

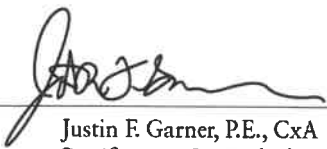
Brandon C. Moore
Facility Commissioning Group

has met all prerequisites demonstrating independence and the technical, management, and communications skills required to implement the commissioning process in new and existing buildings, and passed the necessary examination to be awarded this certificate in recognition of their qualifications as an ACG

Certified Commissioning Authority

Registration number: [REDACTED]. This certificate, valid only for the year 2020, is renewable on an annual basis upon meeting all requirements noted in the CxA Candidate Handbook.




Justin F. Garner, P.E., CxA
Certification Council Chair


Ray Bert
ACG Executive Director

