



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

State of West Virginia
Centralized Expression of Interest
Architect/Engr

Proc Folder: 2045819

Doc Description: CEOI - Camp Dawson Operations Building UPS Replacement Desig

Reason for Modification:

Proc Type: Central Purchase Order

Date Issued	Solicitation Closes	Solicitation No	Version
2026-08-19	2026-09-08 13:30	CEOI 0603 ADJ2700000002	1

BID RECEIVING LOCATION

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

VENDOR

Vendor Customer Code:

Vendor Name : ZMM Architects and Enigneers

Address :

Street : 222 Lee Street West

City : Charleston
WV

State : Country : Zip : 25302

Principal Contact : Adam Krason

Vendor Contact Phone: 304.342.0159 Extension: 234

FOR INFORMATION CONTACT THE BUYER

David H Pauline
304-558-0067
david.h.pauline@wv.gov

Vendor
Signature X 

FEIN#

550676608

DATE 9/8/26

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

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.

(Printed Name and Title) Adam Krason, Principal

(Address) 222 Lee Street West, Charleston, WV 25032

(Phone Number) / (Fax Number) 304.342.0159

(email address) ark@zmm.com

CERTIFICATION AND SIGNATURE: By signing below, or submitting documentation through wvOASIS, I certify that: I have reviewed this Solicitation/Contract 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contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation/Contract for that product or service, unless otherwise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 this bid or offer was made without prior understanding, agreement, or connection with any entity submitting a bid or offer for the same material, supplies, equipment or services; that this bid or offer is in all respects fair and without collusion or fraud; that this Contract is accepted or entered into without any prior understanding, agreement, or connection to any other entity that could be considered a violation of law; 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.

By signing below, I further certify that I understand this Contract is subject to the provisions of West Virginia Code § 5A-3-62, which automatically voids certain contract clauses that violate State law; and that pursuant to W. Va. Code 5A-3-63, the entity entering into this contract is prohibited from engaging in a boycott against Israel.

ZMM Architects and Engineers

(Company)


(Signature of Authorized Representative)

Adam Krason, Principal

(Printed Name and Title of Authorized Representative) (Date)

304.342.0159

(Phone Number) (Fax Number)

ark@zmm.com

(Email Address)



EXPRESSION OF INTEREST

To Provide Professional Architecture/
Engineering Services

**WVARNG Camp Dawson
Operations Building**

UPS Replacement Design

ADJ2700000002

September 4, 2026

ZMM.COM

September 4, 2026

David H. Pauline, Buyer
Department of Administration, Purchasing Division
2019 Washington Street, East
Charleston, WV 25305



Subject: Camp Dawson Operations Building UPS Replacement Design - ADJ2700000002

Mr. Pauline:

ZMM Architects and Engineers is pleased to submit our qualifications to provide professional architectural and engineering design services for the replacement of two Uninterruptible Power Supply (UPS) systems in the Operations Building at Camp Dawson.

Established in 1959, ZMM is a West Virginia-based, full-service architectural and engineering firm with more than 75 professionals. We provide all building-related design services in-house, including architecture, engineering (structural, mechanical, civil, and electrical), landscape architecture, interior design, and construction administration. Our longstanding relationship with the West Virginia Army National Guard (WVARNG), combined with extensive experience at Camp Dawson, gives us a strong understanding of the Guard's facilities, processes, and expectations.

To further strengthen our team for this highly specialized electrical project, ZMM will partner with Lizardos Engineering Associates D.P.C. as a specialty electrical consultant. This collaboration expands our electrical bench strength and brings additional experience in critical electrical infrastructure, electrical distribution, emergency power, and uninterruptible power systems. ZMM will serve as the prime consultant and single point of responsibility, leading project management, client coordination, and multidisciplinary design.

ZMM has significant experience at Camp Dawson, including the Robert C. Byrd Regional Training Institute (RTI), the Joint Interagency Training and Education Center (JITEC), the Mountaineer Challenge Academy Jobs Challenge Facility, and renovations of Buildings 106, 202, 245, 246, and 301. Our extensive WVARNG experience also includes the Jackson County AFRC, Glen Jean AFRC, Tackett Family Readiness Center, Morgantown Readiness Center, Logan-Mingo Readiness Center, Buckhannon Readiness Center, Marshall County Readiness Center, and the Construction and Facilities Management Office (CFMO), among many other projects throughout West Virginia.

This experience gives our team an important advantage for the Operations Building UPS Replacement project. We understand the critical nature of the communications and computer infrastructure served by these systems and the importance of thoroughly evaluating existing conditions, current and future power demands, equipment interfaces, and installation requirements. Our approach will emphasize reliability, constructability, maintainability, and a carefully planned transition to the new systems while supporting continuity of operations.

Thank you for considering ZMM for this important project. We appreciate the opportunity to demonstrate our qualifications and look forward to continuing our service to the WVARNG and Camp Dawson.

Respectfully submitted,
ZMM Architects and Engineers

A handwritten signature in blue ink, appearing to read 'A. R. Krason', followed by a horizontal line.

Adam R. Krason, AIA, NCARB, LEED AP, ALEP
Principal

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A

FIRM PROFILES

ABOUT ZMM ARCHITECTS AND ENGINEERS

ZMM was founded in 1959 in Charleston, West Virginia by Ray Zando, Ken Martin, and Monty Milstead. Since the inception of the firm, ZMM has been dedicated to providing an integrated approach to building design for our clients.

ZMM delivers this integrated approach by providing all building-related design services, including architecture, engineering (civil, structural, mechanical, and electrical), landscape architecture, interior design, and construction administration with our in-house team. Our integrated design approach makes ZMM unique among architecture/engineering firms, and helps to ensure the quality of our design solutions by providing more thoroughly coordinated construction documents.



ZMM has maintained a diverse portfolio since the founding of the firm. Early commissions included higher education projects for West Virginia University and Concord College, WV State Capitol Complex Buildings 5, 6, & 7, and armories for the West Virginia Army National Guard.

Maintaining a diverse practice for more than 60 years has provided ZMM with extensive experience in a variety of building types, including educational facilities, governmental facilities (military, justice, correctional), healthcare facilities, recreation facilities, commercial office space, light industrial facilities, and multi-unit residential buildings.

The original partners transferred ownership of the firm to Robert Doeffinger, PE and Steve Branner in 1986. Mr. Doeffinger and Mr. Branner helped guide and expand the firm to 35 staff. David Ferguson, AIA, and Adam Krason, AIA, LEED-AP joined in ownership of the firm 20 years ago. Randy Jones joined the firm in a leadership role when ZMM acquired Blacksburg-based OWPR Architects & Engineers in 2020 to create a regional design firm that employs more than 70 highly-skilled professionals.

ZMM has become a leader in sustainable / energy-efficient design, and a trusted resource on complex renovation projects. ZMM's unique renovation project approach and ability to



About ZMM Architects and Engineers (continued)

ZMM's unique renovation project approach and ability to provide comprehensive design services has also led the firm to be selected to improve landmark buildings, including the Charleston Coliseum & Convention Center, the Clay Center for the Arts and Sciences, the West Virginia Culture Center, and the West Virginia State Capitol Building. Additional significant projects designed by the firm include the Explorer Academy (Cabell County Schools), the Logan-Mingo Readiness Center, the Manassas Park Community Center and Natatorium, the design of the Fourth High School (Frederick County Public Schools), the new Harrington Waddell Elementary School (Lexington City Schools), the new Ranson Elementary School and Shepherdstown Elementary School (Jefferson County Schools) both include geothermal systems, CAMC Teays Valley ICU, and Ridgeview Elementary School (Raleigh County Schools). ZMM has also provided design services on more than 300 school projects throughout the region.

ZMM's building-related design services include the following.

Pre-Design

Educational Facility Planning
Existing Building Evaluation
Space Planning
Master Planning

Programming
Feasibility Studies
Site Evaluation, Analysis, + Planning
Construction Cost Estimating

Design

Architectural Design
Interior Design
Lighting Design

Sustainable Design
Landscape Architecture

Engineering

Civil Engineering
Mechanical Engineering
Energy Consumption Analysis

Structural Engineering
Electrical Engineering
Net-Zero Buildings

Post-Design

Construction Administration
Life Cycle Cost Analysis

Value Engineering
Post-Occupancy Evaluation

Today, as a member of Aeterna Group, we continue to be our clients' trusted, regional partner, backed by the expanded expertise and resources of a national network of brands. We remain committed to delivering innovative, high-quality design solutions that meet budget and schedule needs while building lasting client relationships. At ZMM, it's about more than architecture. It's about building your legacy.



ABOUT LIZARDOS ENGINEERING ASSOCIATES D.P.C

Lizardos is a recognized leader in providing Engineering services including mechanical, electrical, structural, plumbing, fire protection / life safety engineering services for the design and construction of facilities for commercial, health care, educational, residential, pharmaceutical, laboratory, transportation and municipal buildings.

Since 1965, Lizardos has been dedicated to the delivery of engineering excellence for clients through a consistent commitment to innovation, professional service, sustainable design and the enduring operation of completed projects. The firm is managed by 11 principals and licensed to perform design services throughout the United States.



For more than 60 years, Lizardos has designed well over 6000 projects including design for new facilities, and extensive renovation of existing facilities.

Lizardos offers a full range of engineering services including condition assessments, programming, master planning, feasibility studies, conceptual planning, budgeting, detailed design, contract document preparation, cost estimating, construction administration and commissioning.

Further, the firm offers a totally integrated design approach to building system services which includes sustainability/LEED® consulting, commissioning, energy modeling, energy management and planning, utility incentive consulting, energy audits and utility billing analysis.

Our staff's experience includes work performed for various clients including, but not limited to:

Altice
Brookhaven National Lab
Catholic Health Services
Canon
Cold Spring Harbor Lab
Columbia University
Cornell University
CUNY Schools
Dormitory Authority

Hofstra University
JP Morgan Chase
Nassau Community College
New York University
Northwell Health
NYC DEP
NYC Health + Hospitals

NYP
NYU Langone Health
NuHealth
MLB Network
Mount Sinai Health
MSKCC
PANYNJ
RXR Realty
Storage Facilities

Suffolk County
Suffolk Community College
SUNY Stony Brook Medicine
SUNY Schools
Town of Oyster Bay
Wildlife Conservation Society
Verizon

LIZARDOS

Lizardos In House Services

Planning, Facility Assessment Design

Master Planning	Facility Condition Analysis
Construction Documents	Feasibility Studies
Life Cycle Studies	Operating/Maintenance Manuals

Schematic Design
Cost Estimates

Mechanical

HVAC	Air Flow Diagrams
Laboratory Ventilation	Humidification/Dehumidification
Building Automation Systems	Boiler/Refrigeration/Central Plants

Underground Piping
Pressurization Plans
Critical Infrastructure

Electrical

Electric Service / Distribution	High / Medium Voltage
Emergency Power	Uninterruptible Power
Fire Alarm	Lightning Protection/Grounding
Data Centers	Surveillance/CCTV/Card Access

Motor Controls
Interior and Exterior Lighting
Arc Flash
Security IT/Telecom

Plumbing | Fire Protection | Life Safety

Water Service	Storm Drainage Systems
Fire Detection/Suppression	Hot and Cold Water Supply
Fire Sprinkler Systems	Gas Service

Site Water Distribution
Sanitary and Waste Systems

Process Engineering

Process Flow Diagrams	Process Automation
P&ID Development	Point-to-Point Wiring
Utility Flow Diagrams	

Instrumentation and Controls
Loop Diagrams

Compliance Services

Commissioning	Retro-Commissioning
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Validation

LEED | Energy Services

Sustainability Consulting	Energy Management/Planning
Energy Modeling	Energy Billing Analysis
Photovoltaic Design	

State/Federal Utility Rebates
Energy Audits

Construction Services

Project Administration	Design/Build Partnership
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Owners Representative

Other Services

Building Renderings	Expediting
HVAC Shop Drawing Preparation	

BIM Management

LIZARDOS



B

RELEVANT EXPERIENCE



JOINT INTERAGENCY TRAINING AND EDUCATION CENTER (JITEC)

LEED
GOLD

LOCATION KINGWOOD, WV	SIZE 283,000 SF	COMPLETION 2013	COST \$100M	AWARDS 2011 AIA WV HONOR AWARD
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ZMM, in association with AECOM, provided architectural and engineering design services for JITEC, an Army National Guard campus-style facility for training and operational mission support.

Sited on 30 acres near Camp Dawson, this project included the design of a new operations building, expansion of the billeting facility, renovation of the training facility, and creation of a new base access control point (ACP) and visitor's center. The vision behind the site design and updated master plan is that of a college campus atmosphere. The facility is designed to meet all anti-terrorism/force protection criteria and has achieved LEED Gold Certification. The operations building is prominently sited as the main focal point upon entering Camp Dawson and consists of four distinct areas: the Joint Operations Center (JOC), a suite of secure training rooms, base headquarters and JITEC administrative offices, and a server and telecommunications room.

Built to SCIF standards, the JOC contains a state-of-the-art command center, housing 48 permanent work stations in a theater-style configuration, facing a large video wall, flanked by conference rooms and offices for both officers and support staff. The billeting (hotel) expansion's lobby design provides a hotel atmosphere, underscored by the Liberty Lounge, an upscale bar and restaurant area, with wood finishes salvaged from the gymnasium floor of the former Preston County Armory.





JACKSON COUNTY ARMED FORCES RESERVE CENTER

LOCATION	SIZE	COMPLETION	COST
MILLWOOD, WV	75,000 SF	2011	\$20M

The building design was inspired by the adjacent Georgian-style Order of the Eastern Star facility.

The primary user for the WVARNG will be DET 1 821st Engineering Company, supported by a FSC of the 1092nd. USAR occupants include PLT AMMO 261 OD and PLT 1 (Postal) and PLT 6 (Postal) of the 44th Personnel Company. An expanded drill hall serves as a convention and meeting space. The relationship between the structures became crucial to the site layout. Once the aesthetic of the building was established, the massing of the facility was defined by breaking down the facility into smaller mass elements. The larger programmatic elements, such as the drill hall and the storage areas, employ an aesthetic that more closely implies their function.

The layout of the facility includes a main entry with the recruiting, family support, and administrative areas located on separate sides. A transverse wing houses all functions that have the potential for public use, while all primary military spaces developed along a similar perpendicular wing. This allows for separate entries to be developed for public functions, while the remainder of the facility can be secured. The layout also creates a large central courtyard, or parade field, that would be located at lower grade to define the edge facing the river. This edge is defined by a canopy that connects storage and locker areas to the expanded drill hall.





MORGANTOWN READINESS CENTER

LOCATION MORGANTOWN, WV	SIZE 54,000 SF	COMPLETION 2013	COST \$22M
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The Morgantown Readiness Center is a unique military facility. While supporting traditional military functions including the 1-201st Field Artillery, a significant portion of the building was designed for the 249th Army Band.

The Readiness Center contains a performance hall, pre-function spaces, as well as a variety of training and rehearsal areas. The stage is a large rehearsal space with an adjacent elevated recording area. A large operable partition separates the auditorium from the drill hall. Acoustically, this challenge was met by creating a drill hall with an irregular shape contained within a rectilinear, sloped barrel arch form.

The facility is located on an abandoned airport runway approximately 20 miles from Camp Dawson. As troops will often travel through the Readiness Center, the facility needed to function as a "gateway." This was accomplished by utilizing similar materials and a tower-like feature to mark entry.

The Morgantown Readiness Center is also a sustainable building. The U-shaped layout of the facility improves access to daylighting and views, while also limiting public access to the Guard's administrative and storage areas. The final result is a harmonious composition that reflects both its function and the environment.





LOGAN-MINGO READINESS CENTER

LOCATION HOLDEN, WV	SIZE 54,000 SF	COMPLETION 2015	COST \$12M	AWARDS 2017 AIA WV MERIT AWARD
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The design of the Logan-Mingo Readiness Center was developed by examining both the program and building site, and developing strategies to design a facility that is functional, responds to site, security, and aesthetic parameters, while requiring minimal maintenance.

The building layout was developed by working closely with the end users to determine the appropriate configuration of building spaces to maximize the efficiency of the operations, and to respond to the unique missions of the 150th Armored Reconnaissance Squadron and the 156th Military Police (LNO) Detachment. This was accomplished through clear separation of public and private areas within the facility, unique office configurations related to training requirements, and the addition of state-funded additional spaces.

The exterior (and in many cases, the interior) aesthetic of the facility was driven by the location of the Readiness Center within an industrial park on a reclaimed surface mined site. The decision led to the use of reinforced cast-in-place retaining walls that became both a functional and visual focus. Similar walls are used to anchor the facility at the Distance Learning Center, while a cast-in-place retaining wall and natural stone serves as a part of the Anti-Terrorism/Force Protection design.





STONY BROOK UNIVERSITY HOSPITAL IT DATA CENTER REMEDIATION DESIGN

LOCATION
STONY BROOK, NY

SIZE
VARIOUS

COMPLETION
ETC. 2028

Stony Brook University Hospital (SBUH) is Long Island's premier academic medical center. SBUH serves as the region's only tertiary care center and Regional Trauma Center.

Lizardos served as prime consultant, providing MEP engineering, architectural and structural engineering, commissioning, environmental services, cost estimating, and construction administration for the remediation of a data center on Level 3 of the Health Sciences Center at Stony Brook University Hospital.

The project was driven by a National Electrical Code (NEC) compliance requirement: the existing configuration housed emergency power and normal power within the same room, necessitating the replacement and relocation of older Automatic Transfer Switch (ATS) units into newly dedicated spaces. The scope included design of a new 250 kW UPS, 600A ATS serving the UPS/Critical branch and a 400A ATS serving equipment loads, along with load rewiring and reconfiguration. The design also addressed building codes, egress requirements, and ADA compliance. Design deliverables included 60% design documents and 100% biddable construction documents. Construction administration services covered RFI responses, shop drawing reviews, progress meetings, site inspections, and project close-out. The project was executed with a multi-disciplinary subconsultant team that included MWBE, WBE, MBE, and SDVOB-certified firms.





MEMORIAL SLOAN KETTERING CANCER CENTER

LOCATION	SIZE	COMPLETION
NORTH BERGEN, NJ	145,000 SF	2020

The Regional Cancer Care Center received new UPS and cooling for the IT closets.

As part of the overall MEP design for the new Regional Cancer Care Center, Lizardos designed the uninterruptible power supplies and cooling for the IT Closets.

The 145,000 SF Cancer Center employs the latest technology for outpatient cancer care including Radiation Oncology, treatment and diagnostics, chemical infusion, patient monitoring, MRI and CT scans. The file servers and processors in the IT Closets gather, store and process data for the Electronic Medical Records (EMR) system and administration and billing. Lizardos designed centralized UPS and individual Liebert chilled water units for the IT Closets.





SUFFOLK COUNTY DEPARTMENT OF PUBLIC WORKS

LOCATION	COST	COMPLETION
RIVERHEAD, NY	\$2.8M	2021

The Riverhead County Center Power Plant received extensive electrical upgrades.

Lizardos prepared contract documents for an electrical upgrade to the Riverhead County Center Power Plant. The electrical work performed included the following:

- Replacement of the paralleling board for the three (3) emergency generators
- Replacement of the 1200 Amp, 15k medium voltage switchgear distributing 13.2 kV power to the Complex
- Installation of an ASCO Power Management System throughout the Complex
- Installation of various 15kV medium voltage selector switches to facilitate the installations
- Two (2) temporary emergency generator installations to provide temporary power while the new generator paralleling board was being installed



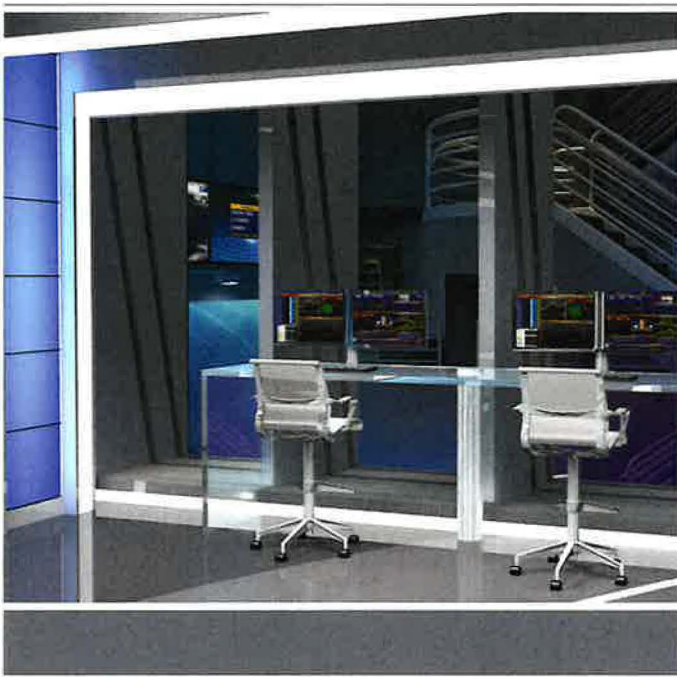
NASSAU COUNTY POLICE DEPARTMENT

LOCATION
WESTBURY, NY

COMPLETION
EST. 2028

Redundancy Upgrades to the NCPD Critical Operations Power Systems (COPS)

- Lizardos Engineering provided electrical engineering design and construction administration services for a critical power infrastructure upgrade at 1194 Prospect Avenue in Westbury, New York. The project established a fully independent electrical system for the Nassau County Police Department radio network, separating it from the existing building systems to strengthen reliability for public safety operations.
- The work was structured across three phases: installation of a new 800-amp PSEG-LI electrical service, diesel generator, and redundant UPS system; distribution of new power to the Dispatch Floor and equipment room with circuit tracing of existing wiring; and installation of new power panels and cabling to each dispatch desk and equipment rack. Critical systems served include NCPD dispatch, radio equipment, radio telecom, and the fire com shelter.
- Services included site surveys, contract document development, electrical distribution design, manual transfer switch design, Nassau County Department of Health filing, bidding support, and full construction administration. Alternate scope items covered mechanical and fire protection, structural evaluation, architectural design, and civil engineering.



ALTICE, USA NEWS 12 BETHPAGE STUDIOS

LOCATION
BETHPAGE, NY

COMPLETION
APRIL 2019

COST
\$12M

Lizardos Engineering served as the design engineer for a comprehensive renovation of over 100,000 square feet of studio and office space for Altice USA at their Bethpage facility. The scope of work spanned mechanical, electrical, plumbing, and fire alarm systems, representing a fully integrated engineering effort across all building disciplines.

The mechanical scope included the design of new air handling units and packaged boiler rooms, as well as chillers, complete with ductwork and piping distribution systems engineered to serve the renovated spaces. These systems were designed to meet the demanding operational requirements of a modern studio and office environment, ensuring reliable climate control and air quality throughout the facility.

On the electrical side, Lizardos Engineering designed new lighting systems and lighting controls for all spaces within the renovation. The electrical scope also encompassed power distribution for all new equipment, including HVAC systems, IT infrastructure, furniture, lighting, and receptacles. This comprehensive approach ensured that every aspect of the facility's power needs was addressed within a single, coordinated design effort.

Fire protection was addressed through the design of new fire alarm devices for all renovated spaces, integrated as an extension of the existing building fire alarm system. This approach allowed for a seamless transition between the existing infrastructure and the newly renovated areas while maintaining full code compliance.

The plumbing scope included the design of new cold water, hot water, and sanitary distribution systems serving all new toilet rooms incorporated into the renovated space. Each system was carefully coordinated with the architectural layout to support the functional demands of the updated facility.

Across all disciplines, Lizardos Engineering delivered a fully coordinated design solution that transformed the Altice USA Bethpage facility into a modern, high-performance studio and office environment.



C

TEAM QUALIFICATIONS



ADAM KRASON

AIA, LEED AP, ALEP

Principal

Mr. Krason has served in the capacity of Architect and Project Manager for a variety of projects at ZMM. This experience includes Military, Educational (K-12 and Higher Education), Office, Justice (Courthouses, Correctional, Justice Centers), and Multi-Unit Residential projects. Mr. Krason's responsibilities include programming, design, documentation, coordination of the architectural and engineering team, as well as construction administration. Mr. Krason began his career in 1998, working on a variety of educational, commercial office, and correctional projects throughout Ohio, West Virginia, and North Carolina.

Mr. Krason has been an advocate of sustainable design and energy efficiency and has participated and presented at sustainable design seminars throughout the region. Mr. Krason is responsible for firm management, business development, and corporate philanthropy at ZMM. In addition to his role at ZMM, Mr. Krason is actively engaged in the community, serving on a variety of statewide and local civic and non-profit boards.

EDUCATION

Bachelor of Architecture
The Catholic University of America, 1998

Bachelor of Civil Engineering
The Catholic University of America, 1997

LICENSURE

Virginia, West Virginia, Ohio, Kentucky,
Maryland, New Jersey, North Carolina,
Louisiana

AFFILIATIONS

Association for Learning Environments

WV Board of Architects, President (2019 - Current)

American Institute of Architects,
Strategic Council (2033/23)

Charleston Area Alliance, Board Chair

Goodwill Industries of Kanawha Valley,
Past Board Chair

Clay Center, Board of Directors

WV Symphony Orchestra, Board of Directors

Charleston Urban Works, Board of Directors

Charleston Municipal Planning Commission

Charleston Historic Landmarks Commission

Education Alliance, Board Chair (2022/23)

PROJECT EXPERIENCE

WV State Laboratory - So. Charleston, WV

WV Department of Agriculture Laboratory Evaluations - Guthrie, WV

Capital Sports Center - Charleston, WV

Shawnee Sports Complex - Institute, WV

The Clay Center for the Arts and Sciences (Multiple Projects) -
Charleston, WV

State Office Building #5, 10th Floor Renovation - Charleston, WV

Charleston Coliseum and Convention Center - Charleston, WV

Claudia L. Workman Fish and Wildlife Education Center - Alum Creek,
WV

Wood County Justice Center - Parkersburg, WV

Wood County Resiliency Center - Parkersburg, WV

Construction and Facilities Management Office (WVARNG) -
Charleston, WV

Joint Interagency Training and Education Center (WVARNG) -
Kingwood, WV

Girl Scouts of Black Diamond Council - Charleston, WV

Goodwill Prosperity Center - Charleston, WV



NATHAN SPENCER

AIA

Senior Architect, Project Manager

Mr. Spencer is responsible for coordinating the efforts of the design team in preparing thorough and clear design documents. He has experience in all phases of design working on a wide range of building types including military, educational, office, justice, and residential. He has worked on several projects that are currently pursuing LEED certification. In addition to production, Mr. Spencer, is also experienced in 3D modeling.

Nate has worked on several preliminary concept study models as well as high quality renderings and 3D models later in the design process. Mr. Spencer is also experienced in high quality physical models.

EDUCATION

Bachelor of Architecture
University of Tennessee, 2007

LICENSURE

West Virginia

AFFILIATIONS

WV Chapter, American Institute of Architects,
Member

PROJECT EXPERIENCE

Kenova AFRC SCIF Building - Kenova, WV

Parkersburg Readiness Center (not built) - Parkersburg, WV

Logan-Mingo Readiness Center - Holden, WV

Jackson County AFRC - Millwood, WV

Joint Interagency Training and Education Center (JITEC) - Kingwood, WV

Buckhannon Readiness Center - Buckhannon, WV

Marshall Readiness Center - Moundsville, WV

AASF #1 and #2 Hangar Additions - Wheeling, WV

Mountaineer Challenge Academy South - Montgomery, WV

Morgantown Readiness Center - Morgantown, WV

Highland Hospital - Charleston, WV

Charleston Coliseum & Convention Center - Charleston, WV

Shawnee Sports Complex - Institute, WV

Tucker County Courthouse Annex - Parsons, WV

Judge Black Courthouse Annex - Parkersburg, WV

Intuit Prosperity Hub - Bluefield, WV



JOHN PRUETT

PE, LEED AP

Senior Mechanical Engineer

Mr. Pruett is responsible for overseeing the design of the HVAC systems, ensuring that the HVAC systems meet the program requirements, and long-term needs of the owner. He performs heating and cooling load calculations and recommends the type of systems to be incorporated into the building. Mr. Pruett coordinates with other disciplines to integrate the HVAC systems into the building. Mr. Pruett has participated on several LEED registered projects. One of his key contributions to these projects is conducting energy analyses and recommending energy use reduction alternatives. Mr. Pruett began his engineering career with a manufacturing company in 1994. In 1998, he made a career change and joined an engineering consulting firm. He has a broad range of experience in HVAC systems design, including government, education, office buildings, hotels, restaurants, a convention center and several natatoriums. Having served in the Marines for 14 years, Mr. Pruett also led a design team for a "virtual memorial" for the birthplace of the U.S. Marine Corps.

EDUCATION

Bachelor of Science
Purdue University, West Lafayette, IN, 1993

LICENSURE

West Virginia, Virginia, Indiana, Maryland,
Louisiana

LEED Accredited Professional

AFFILIATIONS

American Society of Heating, Refrigerating
and Air-Conditioning Engineers (ASHRAE),
Member

United States Marine Corps - 14 Years

PROJECT EXPERIENCE

WVDNR District 5 Headquarters - Alum Creek, WV

WV State Police Headquarters - South Charleston, WV

Wood County Resiliency Center - Parkersburg, WV

WV State Capitol Renovations - Charleston, WV

General Services Division Surplus Property - Dunbar, WV

WV Housing Development Fund Office Building - Charleston, WV

Tucker County Courthouse Renovations - Parsons, WV

Gilmer County Courthouse Renovations - Glenville, WV

St. Margaret's Judicial Center 3rd Floor Renovations - Martinsburg, WV

Jackson County Maintenance and Transportation - Ripley, WV

Jackson County EMS Building - Ripley, WV

WV Army National Guard

- Camp Dawson Building 245
- Camp Dawson Building 246
- Camp Dawson Building 301
- Camp Dawson Mail Facility
- Marshall County Readiness
- Camp Dawson Job Challenge Academy



JAMES LOWRY

PE, BCxA

Mechanical Engineer

James has been a member of the ZMM team since 2018. He has extensive experience in all phases of design and project management in a wide range of building types including industrial, educational, commercial, and health care.

James received his Bachelor of Science in Mechanical Engineering from West Virginia University Institute of Technology. He is a professional engineer licensed in West Virginia, Pennsylvania, Ohio, and Maryland. He is American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Building Commissioning BCxP certified.

James has been volunteering with ASHRAE. At a local level, he has provided leadership as the president of the local chapter WV ASHRAE. On the national level, he advises on Technical Committees (TC) 9.7 Educational Facilities and 4.1 Load Calculations, and is the current programs chair for TC 4.1.

EDUCATION

Bachelor of Science in Mechanical Engineering, West Virginia University Institute of Technology, 2004

LICENSURE

West Virginia, Pennsylvania, Ohio, and Maryland

ASHRAE Building Commissioning BCxP Certified

AFFILIATIONS

American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)

PROJECT EXPERIENCE

WVARNG - WV

- Mountaineer Challenge Academy South Renovations

- Kenova SCIF

- Camp Dawson Building 202

- STF Building B

WV State Capitol Building #6 - Charleston, WV

Capitol Guard House - Charleston, WV

Charleston Fire Department Fitness Center Assessment - Charleston, WV

GSD ASHRAE Building Assessment - Charleston, WV

GSD Consulting Survey-Elect Media - HVAC - Charleston, WV

The Greenbrier Chiller and HVAC Projects - White Sulphur Springs, WV

Marshall University - Huntington, WV

- Drinko Library Mechanical and Electrical Study

- Replacement Multizone HVAC

- Prichard Hall Chiller Replacement

- Drinko/Science Building

- Smith Hall Cooling Tower Replacment

Charleston Area Medical Center (Memorial) 6th Floor Fit-out, Boilers, Laboratory Renovations - Charleston, WV

Charleston Area Medical Center (General) Chiller Plant One-Line, and Chiller Replacement - Charleston, WV



FRANKIE KANTSIOS

PE

Electrical Engineer

As an electrical engineer, Mr. Kantsios is consistently motivated to adapt to the team's needs in assessing and finalizing the project on time. He is an experienced professional with a proven record of managing projects from concept to completion while supporting the unique needs for the specific project at hand. By carrying out engineering and design services for a diverse field of projects since 2013, Mr. Kantsios has expanded his knowledge and understanding of the industry. He has been actively involved in the design of a wide array of new structures and renovations to include K-12 educational buildings, higher education buildings, healthcare facilities, office buildings, banks, restaurants, hotels, automotive dealerships and service centers, apartment complexes and dorms, industrial facilities and warehouses, and athletic facilities. Mr. Kantsios excels at creating effective solutions and developing opportunities that further establish organizational goals.

EDUCATION

Bachelor of Science
Old Dominion University, 2019

Associate of Applied Science
New River Community College, 2016

LICENSURE

Virginia, West Virginia, Ohio

PROJECT EXPERIENCE

WV Regional Technology Park - Charleston, WV
- Street Lighting Replacement

West Side/ Elk City Street Lighting Replacement - Charleston, WV

WV General Services - Charleston, WV
- Building 31 Parking Garage Lighting and Security Replacement
- Building 35 Lightning Protection Replacement
- Building 37 HVAC Replacement and Energy Improvements

Remington (TC Energy) Office Building - Charleston, WV

Goodwill Industries of Kanawha Valley - Charleston, WV

HOPE Community Center - Charleston, WV

Trace Fork Soccer Complex Improvements - Charleston, WV

Nicholas County Schools - Nicholas County, WV
- Glade Creek Elementary School

Raleigh County Schools - Raleigh County, WV
- Shady Spring Elementary School Access Road

Mineral County Schools - Mineral County, WV
- New Frankfort PK-4 School Site Design

Jefferson County Schools - Jefferson County, WV
- New Ranson Elementary School
- New Shepherdstown Elementary School



KARSEN SHANNON

Electrical Designer (EIT)

Mr. Shannon is a certified Engineer in Training (EIT) with 1.5 years of experience as a commercial electrical designer, delivering innovative, efficient, and cost-effective solutions for diverse projects. Specializing in schools and technical career centers, Mr. Shannon excels in collaborating with multidisciplinary teams, including HVAC, plumbing, architectural, civil, and interior designers, effectively communicating with designers inside and outside the firm. Known for optimism, punctuality, and adaptability, Mr. Shannon ensures seamless integration of electrical systems to meet project demands and enhance functionality, while training under an experienced, licensed electrical professional engineer (PE).

EDUCATION

Bachelor of Science in Electrical Engineering
West Virginia University Institute of
Technology, 2023

AFFILIATIONS

The Golden Bear Alumni Association
Tau Beta Pi - Engineering Honor Society

PROJECT EXPERIENCE

Capital Sports Center - Charleston, WV

Remington (TC Energy) Office Building - Charleston, WV

Edgewood Country Club - Charleston, WV

WV Consolidated Laboratory - Charleston, WV

Wood County 911 Center Fence Area - Parkersburg, WV

WVDNR Cooper's Rock Residence and Linens Building - Bruceton Mills, WV

Woody Williams Center for Advanced Learning and Careers -
Barboursville, WV

Calhoun-Gilmer Career Center - Grantsville, WV

Marshall University Multiple Projects - Huntington, WV

West Virginia State University - Institute, WV
- Hamblin Hall Elevators
- Sullivan Hall Elevators

WV School of Osteopathic Medicine - Lewisburg, WV

Roane-Jackson Technical Center - Leroy, WV
- HVAC
- Electrical Lab Building

Hurricane High School HVAC - Hurricane, WV

Mountwest CTC Deferred Maintenance - Huntington, WV



MIKE FLOWERS

CPD

Senior Plumbing Designer

Mr. Flowers is responsible for the design of Plumbing systems, ensuring that the systems are designed to meet the needs of the owner and utilize the latest plumbing technologies to provide the most energy efficient design possible. Mr. Flowers has participated on several LEED registered projects; one of his key contributions to these projects is selecting plumbing fixtures and accessories in his design that require less utility consumption, so significant utility savings are passed on to the owner and the environment as well.

Mr. Flowers has had extensive experience in the field of construction where he frequently visits ZMM's current projects under construction and thoroughly checks the contractors work to ensure compliance with project specifications and construction documents.

EDUCATION

Associate in Mechanical Drafting and Design;
Ben Franklin Career and Technical Center

Associate in Electronics Technology, Putnam
Career and Technical Center

Associate of Science; 1988, West Virginia
State University

Completed Dale Carnegie course in Effective
Communications and Human Relations and
Skills for Success

LICENSURE

Certified Plumbing Designer

PROJECT EXPERIENCE

WVARNG - WV

- Morgantown Readiness Center
- Logan-Mingo Readiness Center
- Jackson County AFRC
- Mountaineer Challenge Academy
- Buckhannon Readiness Center
- Buildings 202, 246, and 301
- Camp Dawson Mail facility

WV State Capitol Senate Bathroom Renovations - Charleston, WV

Tucker County Courthouse - Annex - Parsons, WV

Wood County Justice Center - Parkersburg, WV

WV State Police Headquarters Building Renovation - So. Charleston, WV

Goodwill of the Summit - Parkersburg, WV



RALPH ALDORASI

PE, LEED GA, SENIOR VICE PRESIDENT

PRINCIPAL IN CHARGE - MEP ENGINEERING

Ralph Aldorasi, P.E., Principal at Lizardos, has more than four decades of electrical engineering experience. That includes, medium voltage distribution/substations, building distribution, interior and exterior lighting/daylighting, motor controls, emergency power, uninterpretable power (UPS), load analysis / short circuit analysis, ARC flash assessments /hazard analysis, fire alarm / smoke detection, security / CCTV / card access / surveillance, data center design, power monitoring/ SCADA, IT/network / data systems, and lightning /grounding systems.

EDUCATION

B.S.E.E. - Polytechnic University

LICENSURE

Professional Engineer New York,
New Jersey, Connecticut, Florida,
Georgia, Massachusetts,
Pennsylvania, Rhode Island, Arizona
and Puerto Rico

LEED® Green Associate

Certification
NFPA 2012 NFPA 99
Health Care Facilities
Training Series

PROJECT EXPERIENCE

Port Authority of NY and NJ

SUNY Stony Brook Medicine

Altice USA

Mount Sinai Icahn Medicine

Metropolitan Transit Authority

Purdue Frederick

Major League Baseball (MLB)

Brookhaven National Laboratory

Cablevision

Time Warner, Inc.

Catholic Health Services Mercy Medical Center



DIRK ANDERSON

PE, LEED AP, ASSOC. VICE PRESIDENT

QA/QC

Dirk Anderson, P.E., Principal at Lizardos Engineering, has more than 21 years of experience in the design, construction and conditional assessment of electrical systems in new and existing facilities. As project manager and electrical engineer, Dirk has designed electrical systems for healthcare, educational, municipal and commercial clients. Currently he is designing electric vehicle (EV) infrastructure and charging stations throughout Suffolk County.

His experience includes master planning, building/facility assessments, engineering studies, medium voltage and low voltage power systems design and construction administration. Mr. Anderson is a certified Fire Protection Engineer and a LEED accredited professional.

EDUCATION

B.S.E.E. - New York Institute of Technology, 2004 Electrical and Computer Engineering

B.E.I.T. - University of Technology, Jamaica, 2001 Industrial Technology

LICENSURE

Professional Engineer - New York, New Jersey, California, West Virginia, Louisiana, Missouri, Florida, Rhode Island, Maryland, NCEES

Certification:
Fire Protection Engineering
Technology/Fire Alarm Systems

NFPA 2012 NFPA 99
Health Care Facilities
Training Series

PROJECT EXPERIENCE

Town of Islip

Queensborough Community College

Memorial Sloan Kettering Cancer Center

SUNY Downstate Medical Center

Nassau County

Port Authority of NY and NJ

SUNY Farmingdale

New York University

New York Presbyterian Lower Manhattan Hospital



D

PROJECT APPROACH

PROJECT UNDERSTANDING AND PROJECT APPROACH

Project Understanding

Based upon ZMM's understanding of the information contained in the request for expression of interest, the project involves the upgrade and replacement of two Uninterruptible Power Supply (UPS) systems in the Operations Building at Camp Dawson. The existing systems serve communication rooms, servers, and computer systems that require uninterrupted power during electrical outages. The current systems are approaching obsolescence, making their replacement essential to maintaining reliable operation of these critical systems.



The project requires more than simply replacing existing equipment with new units. The design team must thoroughly investigate the existing installation and evaluate the power usage of each UPS system, anticipated future demand, opportunities for improved efficiency, and the feasibility of alternative uninterrupted power strategies that accomplish the required level of reliability. The scope also includes the removal and replacement of existing UPS units, battery cabinets, monitor stations, sync cabinets, and associated hardware, while addressing warranty requirements and any necessary utility relocations.

ZMM recognizes that this is a highly electrical and systems-focused project with significant implications for the continued operation of the WVARNG Command elements supported by the Operations Building. A successful design must provide a reliable, maintainable, and constructible solution while carefully addressing how the existing systems will be transitioned to the new equipment.

To further strengthen our electrical team for this highly specialized project, ZMM will partner with Lizardos Engineering Associates D.P.C. as a specialty electrical consultant. Lizardos expands the depth and bench strength of the electrical resources available to the project, providing additional experience with critical electrical infrastructure and uninterruptible power systems. ZMM will remain the prime consultant, leading all project management, client coordination, and multidisciplinary design efforts.

Approach

Existing Conditions Investigation

Our first step will be a comprehensive investigation of the existing UPS systems and the infrastructure that supports them. ZMM and Lizardos will meet with WVARNG personnel at Camp Dawson to confirm the project scope, understand operational requirements, and identify constraints associated with maintaining uninterrupted service.

The investigation will include a detailed review of:

Project Approach and Understanding (continued)

- Existing UPS units and their configuration
- Battery cabinets and associated battery systems
- Monitor stations, sync cabinets, and related equipment
- Electrical service and distribution serving the UPS systems
- Existing loads and power usage
- Critical equipment supported by each system
- Available capacity and anticipated future loads
- Existing utility locations and infrastructure
- Equipment access, removal, and replacement requirements
- Architectural and building system modifications required to support the work

Our team will also review available record documents and coordinate with Camp Dawson personnel to understand the operational importance of the equipment served by each UPS system. This investigation will establish a clear baseline for determining the appropriate replacement strategy.



Electrical Analysis and System Evaluation

Because the reliability of the electrical infrastructure is central to this project, ZMM's electrical team, supported by Lizardos, will conduct a detailed evaluation of the existing power systems and the requirements of the connected loads.

The analysis will consider current electrical demand as well as anticipated future needs to ensure that the replacement systems provide appropriate capacity without unnecessarily oversizing equipment. We will evaluate potential improvements in UPS technology and efficiency and consider how alternative system configurations may provide the required level of uninterrupted power.

The evaluation will focus on:

- Existing and projected electrical loads
- Required UPS capacity and runtime
- System reliability and operational redundancy
- Existing and future distribution requirements
- Battery technology and replacement considerations
- Monitoring and system communications
- Coordination with emergency and standby power systems, where applicable
- Maintainability and access for future service
- Opportunities to improve energy efficiency
- Compatibility with existing building infrastructure and critical equipment

Project Approach and Understanding (continued)

Our objective will be to provide the WVARNG with an engineered solution that is appropriate for the facility's operational requirements and provides dependable service for years to come.

Replacement and Transition Planning

Replacing critical power equipment within an active Operations Building requires careful attention to the transition between existing and new systems. The design will address not only the final equipment configuration, but also how the replacement can be accomplished while minimizing risk to the critical systems served by the UPS equipment.

ZMM and Lizardos will work with the WVARNG to develop a practical replacement strategy that considers equipment shutdown requirements, sequencing, temporary measures, system testing, and final commissioning. The final construction documents will clearly communicate the required phasing and coordination so contractors understand the importance of maintaining continuity of operations throughout construction.

Where appropriate, the design will address:

- Sequencing of equipment removal and installation
- Required outages and coordination procedures
- Temporary power or temporary system requirements
- Protection of critical loads during the transition
- Testing and startup requirements
- Coordination with manufacturers and warranty requirements
- Final acceptance and turnover procedures

Multidisciplinary Coordination

Although electrical design is the primary focus of this project, the solicitation requires a complete, coordinated design that addresses all disciplines affected by the work.

ZMM will provide the architectural, mechanical, plumbing, structural, and other services required to support the electrical design. Our in-house multidisciplinary team will coordinate closely with Lizardos throughout the design process to identify and address any impacts to the building, equipment spaces, utilities, ventilation, structural support, access, or other building systems.

This integrated approach will help ensure that the final construction documents address the complete scope of work rather than focusing solely on the replacement equipment.

Design Development and Construction Documents

Following the existing conditions investigation and system analysis, ZMM will lead the development of the recommended design and prepare coordinated construction documents suitable for bidding through West Virginia State Purchasing procedures.

As required by the solicitation, drawings, specifications, and cost estimates will be submitted at 35% Design, 65% Design, 95% Construction Documents, and 100% Final Construction Documents.

Each submission will provide an opportunity for WVARNG review and input. Comments will be incorporated into subsequent phases, and the cost estimate will be updated at each milestone to help maintain alignment between the design and the available construction budget.

Project Approach and Understanding (continued)

Bidding and Construction Administration

Once the construction documents are approved, ZMM will assist the WVARNG through bidding and construction. Our services will include responding to bidder questions, preparing required addenda, reviewing submittals, responding to RFIs, participating in construction meetings and site visits as required, and assisting through substantial and final completion.

ZMM will maintain overall responsibility for construction administration and project coordination, with Lizardos available to support specialized electrical and critical power issues as needed. Our team will work closely with the WVARNG and contractor to help ensure that equipment is installed and transitioned into service in accordance with the design intent and project requirements.



PROJECT MANAGEMENT PLAN

ZMM will serve as the prime consultant and single point of contact for the WVARNG. Our team will be led by Adam Krason, AIA, and Nathan Spencer, AIA, with John Pruett, PE, leading ZMM's engineering effort. Together, they bring extensive experience working with the WVARNG and an understanding of the Guard's facilities, standards, requirements, and processes. Resumes for these team members and others who will support the project are included in this submission.

ZMM will lead all aspects of the project, including project management, communication with the WVARNG, design coordination, schedule management, quality control, and delivery of project milestones. For this electrical-intensive project, our in-house engineering team will be supported by Lizardos Engineering Associates D.P.C. as a specialty electrical consultant. Their involvement expands the depth and bench strength of the electrical resources available to the project and provides additional experience with critical electrical infrastructure and UPS systems.

ZMM will maintain responsibility for coordinating all disciplines and integrating Lizardos' specialized electrical expertise into a complete, coordinated solution for the Operations Building. Our team has successfully collaborated on multiple projects for the WVARNG, giving us a strong foundation for delivering this project efficiently and in accordance with the Guard's established expectations.

Our team will begin the project with a kickoff meeting to confirm the scope, project objectives, communication protocols, operational constraints, and schedule. Throughout the design process, we will maintain regular coordination with the WVARNG and provide clear points for review and decision-making.

Project Approach and Understanding (continued)

1. Clear Communication

ZMM will maintain consistent communication with the WVARNG and coordinate all disciplines and specialty consultants. As prime consultant, ZMM will provide clear direction and serve as the primary point of contact throughout the project.

2. Early Identification of Risks

Existing conditions, operational constraints, utility issues, and equipment replacement challenges will be identified early so they can be addressed before they affect the project schedule or budget.

3. Integrated Technical Coordination

ZMM will lead coordination between its in-house multidisciplinary team and Lizardos, integrating specialized electrical expertise into the overall project solution.

4. Milestone-Based Decision Making

The 35%, 65%, 95%, and 100% submissions will provide structured opportunities to review the design, cost, and scope before progressing to the next phase.

5. Continuity of Operations

Throughout the project, the team will recognize the critical nature of the systems supported by the UPS equipment and will coordinate closely with the WVARNG regarding construction sequencing and system transition requirements.

ZMM's extensive experience working with the WVARNG and at Camp Dawson provides our team with an understanding of the standards, requirements, and processes that will support efficient project delivery.

ZMM QUALITY CONTROL PLAN

Quality control begins with assembling a team whose experience directly aligns with the technical requirements of the project. For the Operations Building UPS Replacement project, ZMM's multidisciplinary building design team will be supported by Lizardos as a specialty electrical consultant, expanding the depth of electrical expertise and resources available to the project.

ZMM will maintain responsibility for the overall quality control process. Quality control will occur continuously throughout the design process through regular coordination among the project team and formal reviews at each major milestone.

1. Confirming Project Requirements

The project team will establish a clear Basis of Design that documents the existing conditions, critical system requirements, design criteria, operational constraints, and project objectives. This information will guide design decisions throughout the project.

2. Existing Conditions Verification

Because the project involves the replacement of existing critical infrastructure, the team will place particular emphasis on verifying existing conditions. Equipment configurations, electrical loads, utility connections, physical access, and related infrastructure will be investigated before major design decisions are finalized.

3. Ongoing Technical Coordination

ZMM will coordinate regular interdisciplinary reviews among its in-house design team and Lizardos. Particular attention will be given to equipment interfaces and the requirements for removal, installation, testing, and future maintenance.

4. Formal Design Phase Reviews

Formal QA/QC reviews will occur at each major phase of the design process as follows.

- 35% Design: Confirmation of existing conditions, design direction, and major system decisions

Project Approach and Understanding (continued)

65% Design: Coordination of equipment, distribution, building modifications, and construction approach

95% Construction Documents: Comprehensive technical and constructability review

100% Construction Documents: Final review to confirm that comments and quality control items have been addressed

Construction Administration: Review of submittals, field conditions, and installation issues

ZMM's QA/QC review process includes technical review, interdisciplinary coordination, constructability review, and evaluation of project schedule and budget.

5. Construction Phase Quality Support

During construction, ZMM will remain actively involved to respond to questions and review contractor submittals. Lizardos will support ZMM's team on specialized electrical and critical power issues as needed. The team will carefully review proposed equipment and system information to confirm compliance with the design intent and project requirements.

ZMM COST CONTROL PLAN

Cost control will begin during the earliest stages of the project. The initial investigation and electrical analysis will help the team understand the scope of equipment replacement and identify potential infrastructure modifications before the design progresses too far.



At each design milestone, ZMM will update the project cost estimate as required by the solicitation. The estimates will be reviewed in conjunction with the design to identify potential cost concerns and opportunities for adjustment before construction documents are finalized.

Our cost control approach will include the following.

Establishing a Clear Scope Early

A detailed existing conditions investigation will help avoid unnecessary assumptions and reduce the potential for unforeseen conditions during construction.

Project Approach and Understanding (continued)

Evaluating Alternatives

During the electrical analysis, the team will evaluate appropriate alternatives for system configuration, capacity, efficiency, and installation. Recommendations will consider both initial construction cost and the long-term operational needs of the WVARNG.

Monitoring Costs Throughout Design

Cost estimates will be prepared and revised at 35%, 65%, 95%, and 100%. The design team will compare each estimate to the established project budget and address significant variances as the design progresses.

Designing for Constructability

The team will consider equipment access, removal, installation, sequencing, and building modifications throughout the design process. Addressing these issues during design can reduce construction complexity and help avoid costly changes in the field.

Maintaining Flexibility

Where appropriate, the construction documents will identify practical options that allow the WVARNG to make informed decisions regarding scope and budget without compromising the reliability and operational requirements of the critical systems.

ZMM has a history of successfully delivering projects for the WVARNG under challenging budget and schedule constraints. For this project, ZMM will lead a coordinated team that combines our longstanding knowledge of the WVARNG and Camp Dawson with the additional electrical bench strength provided by Lizardos. Our objective is to deliver a reliable, practical, and cost-conscious solution for the Operations Building UPS replacement.



E

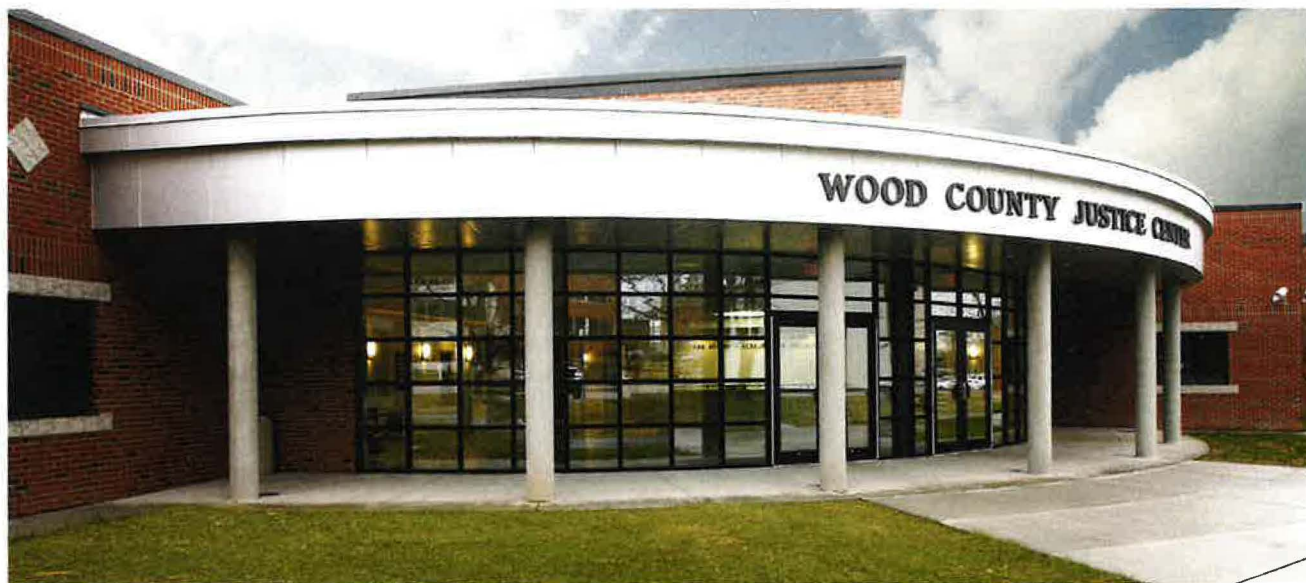
CLIENT REFERENCES

CLIENT REFERENCES

Blair Couch, Commission President
Wood County Commission
1 Court Square
Parkersburg, WV 26101
304.834.0306 cell

Robert Kilpatrick, Director
State of West Virginia, General Services Division
Michigan Ave
Charleston, WV 25311
304.352.5491

Brett McMillion, Director
West Virginia Division of Natural Resources
324 4th Avenue
So. Charleston, WV 25302
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