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April 6, 2022

Ms. Melissa K. Pettrey, Senior Buyer
Department of Administration, Purchasing Division
2019 Washington Street East
Charleston, WV 25304-0130

Subject: Building 3 Hydronic Boiler System Upgrade Project
GSD2200000004

Dear Ms. Pettrey:

ZMM Architects and Engineers is pleased to submit the attached information to demonstrate our experience and our qualifications to [illegible] professional design services for the Building 3 Hydronic Boiler System Upgrade Project. Est[illegible] full service A/E firm, and is noted for design excellence[illegible] experience at the West Virginia Cap[illegible] in resolving HVAC issues in collab[illegible] includes:

- Resolving building pressurizatic[illegible]
- Mapping existing mechanical s[illegible]
- Developing recommendations [illegible]-19.
- Providing recommendations t[illegible]ce rooms).
- Assisted in resolving HVAC c[illegible]
- Resolving heating and coolin[illegible]

04/06/22 11:19:46
WV Purchasing Division

In addition to the HVAC projects [illegible]y of local projects that involved remo[illegible]ding boiler systems from steam to w[illegible]MM assisted with a study to decent[illegible]eam plant (with a future conversio[illegible]s in Montgomery ZMM assisted the West Virginia Army National Guard [illegible]enge Academy – South by decoupling Maclin Hall fr[illegible]em. Additionally, ZMM has provided design services for State Office Buildings [illegible] hot water conversion.

ZMM has renovated buildings throughout the region and has a history of providing services on improvement projects to our state's landmark buildings, including the West Virginia State Capitol, the Culture Center, the Charleston Coliseum and Convention Center, State Office Buildings 5, 6, &7, and the Clay Center. Many of these projects, including our work on State Office Buildings 5, 6, & 7 and the Charleston Coliseum and Convention Center, included phased improvements to occupied buildings. Perhaps most importantly, the ZMM team has worked collaboratively with the Department of

Blacksburg
200 Country Club Drive SW
Plaza One, Building E
Blacksburg, Virginia 24060
540•552•2151

Charleston
222 Lee Street West
Charleston, West Virginia 25302
304•342•0159
www.zmm.com

Martinsburg
5550 Winchester Avenue
Berkeley Business Park, Suite 5
Martinsburg, West Virginia 25405
304•342•0159

Administration General Services Division on a variety of past projects on nearly every building at the Capitol Complex. We are hopeful that you observed our commitment to design quality, budget and schedule control, and client service demonstrated on these projects.

Thank you for taking the time to review the attached expression of interest that has been formatted per the requirements of the Expression of Interest. Additionally, please visit our website at zmm.com to see the full range of projects that we have designed, and to learn more about working with our team from a client's perspective. We appreciate your consideration for this important assignment and look forward to the opportunity to meet and discuss the project in greater detail.

Respectfully submitted,
ZMM Architects and Engineers

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

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: 1017124 **Doc Description:** EOI: Building 3 Hydronic Boiler System Upgrade Project **Proc Type:** Central Contract - Fixed Amt			**Reason for Modification:**
Date Issued	**Solicitation Closes**	**Solicitation No**	**Version**
2022-03-16	2022-04-06 13:30	CEOI 0211 GSD2200000004	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 Engineers

Address : 222 Lee Street, West

Street :

City : Charleston

State : WV **Country :** USA **Zip :** 25302

Principal Contact : Adam Krason

Vendor Contact Phone: 304.342.0159 **Extension:** 234

FOR INFORMATION CONTACT THE BUYER
Melissa Pettrey
(304) 558-0094
melissa.k.pettrey@wv.gov

Vendor Signature X AG RK **FEIN#** 550676608 **DATE** 4.5.22

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.

AG RK

(Name, Title)

Adam Krason, Principal

(Printed Name and Title)

222 Lee Street, West, Charleston, WV 25302

(Address)

(304) 342.0159 / (304) 345.8144

(Phone Number) / (Fax Number)

ark@zmm.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.

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.

ZMM Architects and Engineers

(Company)

AG RK

(Authorized Signature) (Representative Name, Title)

Adam Krason, Principal

(Printed Name and Title of Authorized Representative)

April 5, 2022

(Date)

(304) 342.0159 / (304) 345.8144

(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 exceed 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: ZMM Architects and Engineers

Authorized Signature: _____ Date: April 5, 2022

State of West Virginia

County of Kanawha, to-wit:

Taken, subscribed, and sworn to before me this 5 day of April, 2022.

My Commission expires April 16, 2023.

AFFIX SEAL HERE

Official Seal
Notary Public, State of West Virginia
Jessica Wolfe
501 Washington Street
St. Albans, WV 25177
My Commission Expires April 16, 2023

NOTARY PUBLIC _____

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ABOUT
ZMM ARCHITECTS & 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), 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, State Office Buildings 5, 6, & 7 on the State of West Virginia Capitol Campus, and armories for the West Virginia Army National Guard.

Maintaining a diverse practice for over 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 its present size of 35 people. Over the past 20 years David Ferguson, AIA, and Adam Krason, AIA, LEED-AP joined in ownership of the firm. In 2020, Randy Jones also joined in ownership of the firm when ZMM acquired Blacksburg-based OWPR Architects & Engineers to create a regional design firm that employs more than 50 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

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About ZMM Architects & Engineers (cont.)

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 State of 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), 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:

Pre-Design
Educational Facility Planning
Existing Building Evaluation
Space Planning
Master Planning
Programming
Feasibility Studies
Site Evaluation and Analysis
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

As ZMM looks to the future, we remain committed to the ideal of providing high-quality, client-focused design solutions that meet budget and schedule requirements. We listen, we respond promptly with innovative and efficient solutions, and we deliver quality projects and develop lasting relationships. You see us in **YOUR** community every day.

AWARD WINNING DESIGN

2020

AIA West Virginia Chapter: Merit Award
Achievement in Architecture for New Construction
Mountain Valley Elementary School
Bluefield, West Virginia

AIA West Virginia Chapter: Merit Award
Achievement in Architecture
Ridgeview Elementary School
Crab Orchard, West Virginia

2019

AIA West Virginia Chapter: Honor Award
AIA West Virginia Chapter: Citation Award
AIA West Virginia Chapter: People's Choice Award
Charleston Coliseum & Convention Center
Charleston, West Virginia

2018

AIA West Virginia Chapter: Citation Award
Unbuilt Project
Charleston EDGE
Charleston, West Virginia

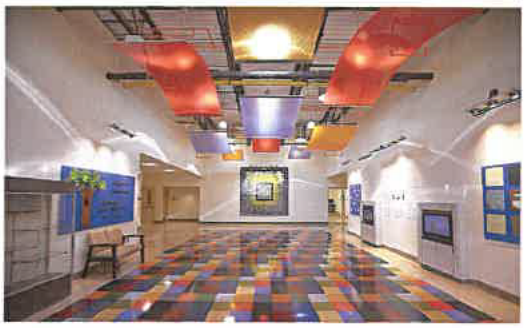
2017

AIA West Virginia Chapter: Merit Award
Achievement in Architecture
Explorer Academy
Huntington, West Virginia

AIA West Virginia Chapter: Merit Award
Achievement in Sustainability
Logan - Mingo Readiness Center
Holden, West Virginia

2016

AIA West Virginia Chapter: Merit Award
Achievement in Architecture in Interior Design
Christ Church United Methodist
Charleston, West Virginia



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AWARD WINNING DESIGN

AIA West Virginia Chapter: Merit Award
Achievement in Architecture
Gauley River Elementary School
Craigsville, West Virginia

2015

AIA West Virginia Chapter: Honor Award
Achievement in Architecture in Sustainable Design
Edgewood Elementary School
Charleston, West Virginia

AIA West Virginia Chapter: Merit Award
Achievement in Architecture
Kenna Pk-5 School
Kenna, West Virginia

2014

AIA West Virginia Chapter: Merit Award
Achievement in Architecture in Sustainable Design
Huntington East Middle School
Huntington, West Virginia

AIA West Virginia Chapter: Merit Award
Achievement in Architecture
Southern West Virginia Community & Technical College
Williamson, West Virginia

AIA West Virginia Chapter: Merit Award
Achievement in Architecture in Interiors/Graphics
Girl Scouts of Black Diamond Council
Charleston, West Virginia

2012

AIA West Virginia Chapter: Honor Award
Excellence in Architecture
West Virginia Housing Development Fund Building
Charleston, West Virginia

2011

AIA West Virginia Chapter: Honor Award
Excellence in Architecture in Historical Preservation
Southside Elementary/Huntington Middle School
Huntington, West Virginia

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Anticipated Concepts and Methods of Approach for Goals and Objectives

Building 3 Hydronic Boiler System Upgrade

Project Approach

ZMM will meet with GSD to determine their goals and ideas for the project and to determine the project timeline.

ZMM will review all drawings and applicable information with respect to utilities and building operations and make all site visits for measured integrations of boiler into available building space.

Provide an agreed upon schematic design for review and discussions to include boiler type, location, flue location, and changes to existing piping.

Proceed with Design Development and Construction Documents with multiple reviews at each stage. Provide an estimation of probable cost. Coordinate latest listed Purchasing Frontend and general conditions.

Provide Construction Administration to include shop design and on-site meetings with reports. Provide final close out inspection and documents.

To make sure the design services are on schedule; **ZMM will provide a written weekly project status report to the GSD designated project manager.**

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Goals and Objectives

Goal/Objective 1: Past Experiences with Converting Existing Heating Systems, Preferably from Steam to Water (see section 3)

- State Office Buildings #5 and #6, Charleston, WV

Goal/Objective 2: Experience with Locating Boiler Plants on Building Campuses. (see section 3)

- WV Regional Technology Park, So. Charleston, WV
- WVU Tech., Montgomery, WV
- Capitol Complex Campus, Charleston, WV

Goal/Objective 3: Experience Designing Construction of New Utilities on Existing Building Campuses (see section 3)

- WV Regional Technology Park, So. Charleston, WV
- WVU Tech., Montgomery, WV
- Capitol Complex Campus, Charleston, WV

Goal/Objective 4: Experience Designing Mechanical Repair Construction Projects Using the Procedures Equal or Similar to the State of WV's Procurement Procedures, and for Administering Projects for Which the Owner is a Government Entity (see section 4)

- Installation of Capitol Cafeteria: Capitol Complex Capitol Building 1
- Survey and Future Recommendations for HVAC Equipment – Capitol Complex – Capitol Building 1
- Report on Corrective HVAC Measures – Capitol Complex – Building 1
- Roof Replacement – Capitol Complex – Building 1
- HVAC Report and Recommendations to Correct HVAC System – Capitol Complex – Governor's Mansion
- Report and Recommendation to Correct HVAC Problems – Building 53 – Clarksburg, WV
- Governor's Guard Shack
- Building 5, 6 & 7 Assessment
- Building 5 & 6 Renovation (Multiple Floors)
- Culture Center Gift Shop
- Culture Center Great Hall Relighting
- WV Surplus Property
- Senate Toilet Upgrades
- Building 5, 6 & 7 Roof Replacement
- Building 5, 6 & 7 Window Replacement
- Building 5, 6 & 7 Re-Caulking
- HVAC Covid-19 Recommendations – Building 1

Items for Consideration to Meet Objectives #1-4

Flue Gas Venting – If boilers are in the basement, route flue underground to separate structure in parking lot with induced draft fan, or underground to Loading Pavilion, either vent inside to roof of building or add enclosure to the outside of the Pavilion. If boiler can be located in the Penthouse mechanical room, vent through roof.

Boiler Size – The net output of the steam to hot water design load is 16,000 mbtu. This load seems high, but the building has single pane glass and limited wall insulation. ZMM will perform a load calculation to verify the heating demand.

Boiler Type – With conventional boilers, 1 to 3 large boilers will be required for the load, If space is limited in the basement mechanical room, vertical boilers can be considered. Consider small modular boilers in the penthouse.

The hot water design is 180 degrees supply temperature, and 150 degrees return temperature. Coils, VAV reheat are sized at 180 degrees Fahrenheit. Evaluate equipment to determine if the equipment can operate at a lower temperature during moderate weather so that condensing boilers can be considered to operate at 140 degrees or lower as an energy savings measure.

If boilers are located in basement or ground level, they need to be rated at 100 psig or greater. If located in the mechanical penthouse they can be rated at 30 psig or greater.

Boiler Location – (1) Basement mechanical room, space permitting, (2) Loading Pavilion space permitting, (3) addition to Loading Pavilion for new boiler room. (4) the mechanical penthouse consideration for multiple modular boilers, structural capacity is a concern. If an addition to the loading pavilion is selected, ZMM has the architectural staff to design the addition to seamlessly tie into the existing structure.

Hot Water Piping Distribution – The steam to hot water converter distributes 180-degree hot water to three areas, two induction unit heat exchangers (NE zone and SW zone) and 180-degree water to the AHUs, Energy Recovery Unit (induction units supply) and to VAV boxes. Since HW will be available year-round, the two induction unit coil zones can switch over to heat at different times (ie. NE zone first and SW zone later). Study existing control strategies, and ways to mitigate the problems with the two pipe system. As a side note, better control between interior zone and exterior zone could be achieved by relocating the induction unit thermostats and sensors from the interior columns to the exterior chase insulated pilasters.

Natural Gas Services – The gas company indicates they have a 2 inch 60 psig plastic line from Piedmont Road through the parking lot to the rear of Building 3. Investigation is required to determine if the line exists and is active. This pipe size and pressure is adequate for Building 3 load.

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Selective Experience – Boilers and Utilities

Building 3 Hydronic Boiler System Upgrade

WV Regional Technology Park Steam Plant Analysis, So. Charleston, WV

The WV Regional Technology Parks Campus. The RTP inherited a high-pressure central campus steam system. ZMM worked collaboratively with WVRTP staff and various consultants to develop an analysis of the efficiency of the Tech Park steam plant. Based upon results of the analysis, the WVRTP decided to shutter the plant abandoning or removing underground steam line. ZMM routed the campus natural gas to individual building to supply individual heating plants.

ZMM designed and built a high-pressure steam plant in a separate 1,500 SF masonry building for building 740 with the intent of converting the building to hot water for HVAC system. The boilers were selected for conversion to hot water. Small high pressure process boilers were selected for pilot/plant Investigation. ZMM relocated outdoor chiller and chilled water lines in addition to rerouting the gas services for a free standing boiler plant.

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Charleston Coliseum and Convention Center, Charleston, WV

ZMM provided a new Central Plant to include new electrician service, new chilled water plant for the remodeled and additions to the CCCC. The existing Plant was kept in service while the new plant was constructed while maintaining full operation of the CCCC. Relocation of main gas service, sprinkler service entrance, and new electric service was included all while maintaining building services.




Sprinkler System for the Capitol Campus, Charleston, WV

ZMM designed the new sprinkler service entrance for Capitol Building 1. ZMM designed the new sprinkler service entrance for Buildings 5, 6, and 7 and have integrated the sprinkler system in Building 5, 6, and 7 as renovations proceed.

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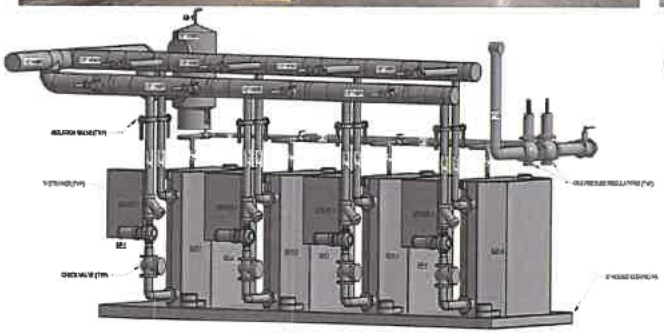
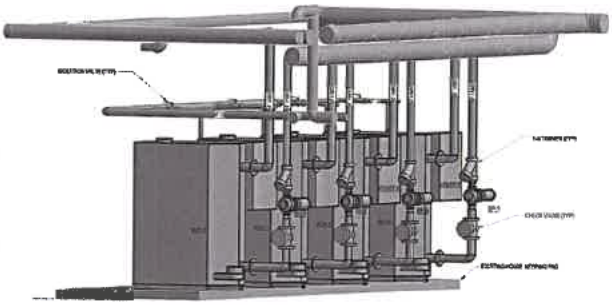
State Office Buildings #5 and #6 – Steam to Hot Water, Charleston, WV

ZMM designed the HVAC conversion from steam heating to HW heating. The project involved installation of new modular hot water condensing boilers, removal of steam service to HVAC system. New HW coils were provided to the rebuild of Air Handling Units. Project is being bid as a partial steam removal and alternate for 100% steam removal to stay within project funds.





Mountaineer Challenge Academy (former WVU Tech Campus), Montgomery, WV

Provided new hot water plant to decouple individual buildings from integrate systems. Provide new gas service sized to provide boiler expansion and new electric generator expansion. Involved in ongoing electric decoupling from a campus primary metering system to individual electric service entrances.

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WV State Office Buildings 5, 6, & 7, Charleston, WV

ZMM rerouted the two service entrance power feeds, working with APCO for Buildings 5, 6, & 7 Designed new service entrance switchgear and building to house the switchgear

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Additional Experience

WV General Services Division and WV State Purchasing

- Installation of Capitol Cafeteria: Capitol Complex Capitol Building 1
- Survey and Future Recommendations for all HVAC Equipment – Capitol Complex – Capitol Building 1
- Report on Corrective HVAC Measures – Capitol Complex – Building 1
- Roof Replacement – Capitol Complex – Building 1
- HVAC Report and Recommendations to Correct HVAC System – Capitol Complex – Governor's Mansion
- Report and Recommendation to Correct HVAC Problems – Building 53 – Clarksburg, WV
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- HVAC Covid-19 Recommendations – Building 1

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WV STATE OFFICE BUILDINGS 5, 6, & 7

LOCATION
CHARLESTON, WV

AWARDS
2011 AIA WV MERIT AWARD

Nearly 50 years ago, ZMM (as Zando, Martin & Milstead) designed the original West Virginia State Office Buildings 5, 6, and 7.

Over the past decade, ZMM has been assisting the State of West Virginia General Services Division with various improvements to the buildings. The improvements commenced with an overall building assessment that examined the condition of the buildings, as well as cost and phasing options for implementing various upgrades. Improvements that have been undertaken have ranged from substantial renovations to maintenance and repair projects, and include:

Major Renovations: ZMM Architects & Engineers provided design services for the renovation of the 10th Floor of Building 5 for the Office of Technology - a project that was recognized with a design award from the West Virginia Chapter of the American Institute of Architects. The project focused on demonstrating the potential that exists in State Office Buildings 5 and 6 if the floors are renovated in a more contemporary manner that moves the open office spaces to the perimeter, and pulls the offices adjacent to the building core. The project also involved close coordination with the State Fire Marshal, the introduction of a sprinkler service and fire pump into the building, demolition, hazardous material abatement, and FF&E coordination. The project was delivered considerably under the anticipated project budget.

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WV State Office Buildings 5, 6 & 7 (cont.)

The next phase of the renovation involved floors 7, 8, and 9 of Building 5 and floors 7 and 8 of Building 6. All of these floors have been fully renovated, including abatement, demolition, new construction, and updated life safety systems. ZMM has also provided design services for the renovation of the 2nd, 3rd, and 4th Floors of Building 6 for the Department of Education and Division of Personnel.

Roof Replacement: ZMM assisted the General Services Division with a roof replacement for all three buildings, utilizing a white EPDM roofing material, with consideration being given to sustainability. The existing ballast, roof membrane, and rigid insulation were also salvaged as part of the roof replacement project. Several unused mechanical penthouses, antenas, and other abandoned equipment were also removed.

Electrical Courtyard Improvements: ZMM Architects & Engineers assisted the General Services Division with a project to expand the electrical courtyard adjacent to Building 7, and simultaneously improve the electrical service entry to buildings 5, 6, and 7. This project required both historical (matching the existing granite panels), as well as very technical electrical engineering design considerations.

Door and Window Replacement: ZMM has assisted with two separate projects, one to replace the windows in Buildings 5 and 6, and the second to replace the doors at the entries to Buildings 5, 6, and 7. The window replacement included over 1,200 windows, as well as decorative extruded metal screen. These projects included building envelope and security considerations. The projects were designed and staged to minimize disturbance to the buildings' occupants.

Caulk Replacement: ZMM provided design services to remove and replace all of the caulk located between the limestone and precast panels on the exterior of Buildings 5, 6, and 7. The project also included cleaning of the building's exterior along with some repair work. The project was coordinated with the Capitol Building Commission.

Valve Replacement: ZMM assisted with a valve replacement project to isolate mechanical risers in Building 5 and 6. This technically intensive mechanical project gave the General Services Division greater control over the system, and helped to isolate various risers in the event of significant system failures in the future.

WEST VIRGINIA STATE CAPITOL

LOCATION
CHARLESTON, WV

COMPLETION
2007-2021

ZMM Architects & Engineers has completed a variety of improvement project to the State of West Virginia Capitol Building.

The improvements included a renovation to the lower-level food court, a roofing replacement, toilet renovations, and various HVAC improvements – including a project to increase safety during the Covid-19 pandemic. The food court renovations included a full-service kitchen, self-serve area, and seating for 300 people. ZMM worked with a kitchen consultant and provided demolition drawings, base architectural, mechanical, and electrical drawings. The project also included the design of the first phase of a wet pipe sprinkler system. In addition, ZMM also provided the documents to replace the Capitol medium-voltage transformers. ZMM met a stringent timeline for a critical construction completion date.

ZMM replaced the roof of the Capitol Building, which included the main buildings, connectors, and base of the dome. All roof system components were reviewed for integrity and ability to control moisture collection and removal. The components included in the project were parapet walls, railings, wall conditions, colonnades, roof penetrations, roof drains, roof equipment, and walking surfaces. Additional projects included improvements to the Senate toilets, a report that mapped all of the mechanical equipment in Capitol Building, and various mechanical improvements to make portions of the Capitol more safe for occupants during the pandemic.

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WV CULTURE CENTER
GREAT HALL LIGHTING & MUSEUM SHOP

LOCATION	SIZE	COMPLETION	COST
CHARLESTON, WV	12,000 SF	2011	$2M

ZMM provided design services to various improvements including the Great Hall lighting wiring system and the Museum Shop at the WV Culture Center, located at the WV State Capitol Complex.

The existing wiring and conduit system for the Great Hall lighting was approximately 35 years old and in need of drastic improvements. The existing conditions that were observed included the conduit and outlet boxes mounted on the underside of the existing grating above the ceiling, the dimming circuits shared a common neutral, and bad fixture connections and cables. ZMM performed a complete survey and drawings of the existing conduit, wiring, and dimming systems. The circuiting requirements were confirmed and ZMM proposed correction methods with a dimming equipment manufacturer. The project included: dimmer circuits, conduit, wiring, new twist lock receptacles, and cleaning of the fixtures.

In addition to the improvements to the Great Hall lighting, ZMM examined a variety of options to add both a café and Museum Shop to the facility. The West Virginia Division of Culture and History ultimately decided to repurpose an underutilized space adjacent to the Great Hall as a Museum Shop. The shop is currently operated by Tamarack.

ZMM ARCHITECTS ENGINEERS

GENERAL SERVICE DIVISION SURPLUS PROPERTY

LOCATION	SIZE	COMPLETION	COST
DUNBAR, WV	19,250 SF	2016	$4M

This project consists of a 19,250 SF pre-engineered metal building storage facility that includes 5,000 SF of administrative space.

The property originally had multiple structures that were scattered throughout the site. The layout of the buildings created a variety of issues for Surplus Property, and made it difficult for them to operate efficiently. The new pre-engineered metal building replaced the existing structures, which were located in the floodplain, and addressed several site issues, including proper drainage, traffic flow, and correct floor elevations in regard to current floodplain requirements. Since the existing site contained a large amount of fly ash, ZMM employed a unique approach to constructing the foundation system. Instead of completing a full excavation of the site, ZMM recommended installing the foundations by selectively demolishing the existing pavement to allow for the installation. This improved constructability, and led to an enhanced construction process.

The exterior of the pre-engineered building was designed to reflect the branding of the state agency, and the demolition of the existing structures, along with the new construction, was phased to maintain continuous operation of the facility.

ZMM ARCHITECTS ENGINEERS

Robert Doeffinger, PE

Role
Engineering Principal

Professional Registrations
Professional Engineer (WV, VA, PA, OH, TN, KY, NY, NH, ME, NC, SC, FL, NJ, GA)

As ZMM's Principal Engineer, Mr. Doeffinger is in charge of the engineering disciplines, it is his responsibility to ensure that the mechanical and electrical engineering components of ZMM's design are coordinated and integrated into the final product.

After graduate school in Architectural Engineering, Mr. Doeffinger joined ZMM. He has over 45 years design experience in mechanical and electrical systems for buildings. He has a broad range of engineering experience in education, industrial and manufacturing facilities, large retail, correctional and jails, office buildings, and military facilities.

Mr. Doeffinger is responsible for new design and retrofit of chilled water systems for all building types including large regional shopping malls. He is involved daily with the firm's selection of appropriate systems for all building types and performs life-cycle cost analysis and energy studies.

Mr. Doeffinger is a member of the American Society of Heating, Ventilation and Air-Conditioning Engineers. He is the current national Chairman of the Technical Committee on Heating and Air-Conditioning Load Calculation. He is involved in writing the National Standard on the Method of Calculation, which will shape the nature of the future building energy use for the nation.

Selective Project Experience
Charleston Coliseum & Convention Center, Charleston, WV
Mr. Doeffinger was the mechanical project engineer on the expansion and renovation to the Charleston Civic Center project. The $100M, 300,000 SF design-build project was a collaboration with tvsdesign and BBL Carlton. The design commenced in the spring of 2015, and construction was completed in October 2018. The mechanical design is expected to reduce the energy requirements defined by ASHRAE 90.1-2013 by an estimated 25% and extensive water savings will be shown. The project includes a new chilled and hot water central plant with extensive replacement and upgrades to the facilities existing mechanical systems. Multiple phases of construction will allow the Civic Center to remain operational throughout the construction progress.

Education
Master of Science Architectural Engineering, The Pennsylvania State University, 1976
Thesis: Air Change Measurements using a Tracer Gas Technique

Bachelor of Science Mechanical Engineering, West Virginia University, 1973

Employment History
2005 - Present, President, ZMM
1983 - 2005, Vice President and Engineering Principal, ZMM
1976 - 1983, Mechanical Engineer

Civic Affiliations
- 2019 Marshall University Honorary Alumni Award of Distinction College of Engineering
- 2021 Industrial and Professional Advisory Council – College of Engineering at The Pennsylvania State University
- ASHRAE – Member of the Technical Committee Load Calculations Data and Procedures for 25 years, serving as chairman. Presently Chairman of the Research Subcommittee
- Advisory Board for the Department of Electrical Engineering Technology, Bridgemont Community and Technical College
- City of Pt. Pleasant, WV – 2nd Ward Councilman for 20 years

State Office Buildings #5, 10th Floor Charleston, WV Mr. Doeffinger was the Project Engineer for this renovation project The renovation of the tenth floor of State Office Building #5 on the State of West Virginia Capitol Campus was recently completed for the Office of Technology. The renovation was designed to meet the United States Green Building Council's LEED for Commercial Interiors standard. The renovations also include a low profile cable management system which maximizes the flexibility of the space. To commence the project, ZMM conducted a detailed investigation of State Office Buildings 5, 6, & 7, which included recommendations for improvement of the facilities. The renovation of the 10th floor of Building #5 was the first major interior renovation project that responded to the recommendations.

West Virginia Capitol Complex - Buildings #5, 6, & 7, Charleston, WV Mr. Doeffinger was the Project Engineer for the in-depth analysis of Buildings #5,6, & 7 at the State Capitol Campus. The study included the preparation of as-built plans, as well as an analysis of all building systems, including: Life Safety; Vertical Transportation; Mechanical; Electrical; Data; Façade; Structure; and Roofing. The analysis also included a study related to potential hazardous materials in the facility.

West Virginia Regional Jails, Mr. Doeffinger was the Project Engineer on ten West Virginia Regional Jails. In 2009 he was responsible for the HVAC renovation on four regional jails, including the replacement of rooftop HVAC units and Building Automation Systems.

West Virginia Army National Guard, Joint Interagency Training & Education Center, Camp Dawson, WV Mr. Doeffinger was responsible for the mechanical engineering design of the 600 room billeting expansion to the Regional Training Institute at Camp Dawson. The project is served by a 4 - pipe hot and chilled water system with an energy recovery ventilation system. This project received LEED Gold Certification.

West Virginia Research, Education, and Technology – Building 704, South Charleston WV Mr. Doeffinger is the engineering principal-in-charge of preparing a life safety analysis of the building as well as design services to improve the exterior façade of Building 704 at the WV Research, Education, and Technology Park. Building 704 had previously been utilized as a campus maintenance facility by Union Carbide and DOW Chemical. Bridgemont began utilizing the facilities for instruction in the Spring of 2011.

West Virginia Regional Technology Park (WVRTP) - Building 740, South Charleston WV Mr. Doeffinger is the engineering principal-in-charge of the new Steam Plant for Building 740. This project involves designing and constructing the Interim Steam Heating System throughout Building 740.

Bridgemont (BridgeValley) Community and Technical College Davis Hall Renovation, Montgomery, WV Mr. Doeffinger led an architectural and engineering investigation into the condition of Davis Hall to help Bridgemont Community and Technical College to develop a scope for the current renovation project, as well as a plan to undertake deferred maintenance at the facility. The project scope included remedying several life safety deficiencies, as well as improvements to the building envelope.

NGK Oxygen Sensor and Spark Plug Plant, Sissonville, WV Mr. Doeffinger was in charge of engineering design of the 250,000 SF NGK facility. The most recent 130,000 SF expansion moved NGK's spark plug production for the west coast to West Virginia. For both the oxygen sensor plant and spark plug plant Mr. Doeffinger designed a cycle water system for the manufacturing equipment.

The Plaza at King of Prussia, Philadelphia, PA One of the largest retail centers in the USA. Mr. Doeffinger has performed engineering services for the past 20 years. The project consists of an 8,000 - ton chilled water plant and 1,500,000 cfm variable volume system for tenants and constant volume air system for common areas and an engineered smoke control system. The most recent project is a 100,000 square foot expansion of tenant spaces, a renovation of the food court, and a 1,250-ton chiller addition to the central chilled water plant.

Adam R. Krason, AIA, LEED AP, ALEP

ZMM ARCHITECTS ENGINEERS

Role
Architectural Coordinator

Professional Registrations
Registered Architect (WV, OH, KY, VA, MD, NJ)
LEED Accredited Professional
Accredited Learning Environment Professional
NCARB ([redacted])
Construction Specifications Institute (CSI)
Construction Documents Technician (CDT)

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 in West Virginia, participating in a variety of sustainable design seminars throughout the State, and serving on the West Virginia School Building Authority Green Schools Sub-Committee. Recently, Mr. Krason helped coordinate the "Making the Business Case for Sustainability" conference at the University of Charleston that included speakers from Armstrong Industries, American Electric Power, CB Richard Ellis, and Interface Raise. Mr. Krason also assisted Habitat for Humanity Kanawha and Putnam County develop a commercial recycling program to fill a void in the sustainable design infrastructure in West Virginia. Mr. Krason has noted that, "I became a LEED Accredited Professional because I believe that good design has value, and the ability to impact our daily lives. Sustainable design showcases the value of design through demonstrated improvements in the performance of the students and employees who occupy our buildings." In addition to his design and project management responsibilities, Mr. Krason serves on the Board of Directors and is responsible for business development at ZMM.

Project Experience
Charleston Coliseum & Convention Center, Charleston, WV
Mr. Krason served as principal-in-charge of the expansion and renovation to the Charleston Civic Center. The $75M, 283,000 SF design-build project is being completed as a collaboration

Education
Bachelor of Architecture, The Catholic University of America, 1998

Bachelor of Civil Engineering, The Catholic University of America, 1997

Employment History
2007 - Present, Principal, ZMM
2007 - Present, Board of Directors, ZMM
2003 - Present, Architect, Project Manager, ZMM
1998 - 2003, Architect, Project Manager, Charleston Area Architectural Firm

Civic Affiliations
- WV American Institute of Architects, President
- Habitat for Humanity Kanawha & Putnam County, Board of Directors 2011 - 2014
- WV Qualification Based Selections Council, President, 2012/2013
- Leadership WV 2010 - 2012
- Charleston Rotary
- West Side Main Street, Board of Directors 2008 - 2014
- City of Charleston Land Trust 2008 - 2014

with tvsdesign and BBL Carlton. Mr. Krason was responsible for the overall management of the design team, coordination with the client, and also has input critical project management decisions. The design commenced in the spring of 2015, and construction was complete in 2018.

Joint Interagency Training & Education Center (WVARNG), Kingwood, WV Mr. Krason was responsible for the preliminary programming, and participated in the schematic design of the 180,000 SF addition to the Regional Training Institute at Camp Dawson. Mr. Krason was also responsible for managing the production effort for the billeting (hotel) expansion, which increased the total billeting capacity at the JITEC to 600 rooms. This project received LEED Gold Certification.

Morgantown Readiness Center (WVARNG), Morgantown, WV
Mr. Krason was the project architect on the new Morgantown Readiness Center. This facility is a unique due to its location on an abandoned airport runway at the Morgantown Municipal Airport. The 54,000 SF Readiness Center occupies a 35-acre tract at the airport. This center supports traditional military functions including the 1-201st Field Artillery. A significant portion of the Morgantown Readiness Center supports the 249th Army Band. The Readiness Center contains a performance hall, pre-function spaces, as well as a variety of training and rehearsal areas.

Construction and Facilities Management Office Expansion (WVARNG), Charleston, WV
Mr. Krason was responsible for the programming, architectural design, and project management of the office expansion. The project included the renovation and addition to an existing pre-engineered metal building. The design, which was honored with a 2009 AIA Merit Award, focused the client's resources on a new entry and corridor that separated the existing office space from the addition.

State Office Building #5, 10th Floor Renovation (Office of Technology), Charleston, WV
Mr. Krason led an architectural and engineering team that completed a detailed assessment of State Office Buildings 5, 6, & 7. Once the assessment was complete, ZMM had the opportunity to implement the proposed improvements on the 10th Floor of State Office Building #5 for the Office of Technology. The renovations, aiming for LEED-CI Certification, re-oriented the layout by drawing all private offices into the building core, providing access to daylight and views for all employees. The design also utilized acoustical ceiling clouds and bulkheads to maximize the acoustical performance, while also increasing the volume of the space.

BridgeValley Community and Technical College - Davis Hall Renovation and Master Plan, Montgomery, WV Mr. Krason led an architectural and engineering investigation into the condition of Davis Hall to help BridgeValley Community and Technical College to develop a scope for the current renovation project, as well as a plan to undertake deferred maintenance at the facility. The project scope included remedying several life safety deficiencies, as well as improvements to the building envelope.

Edgewood Elementary School, Charleston, WV
Mr. Krason was the project manager on the new Kanawha County Elementary School on Charleston's West Side. The school is being designed as a 21st Century Learning Environment, with a focus on integrating technology into the delivery of the curriculum. Instructional areas will be located off of an open 'exploratorium' that is being designed to function like a children's museum, providing a variety of learning opportunities, and flexible educational spaces. The school will also visibly integrate sustainable design principles to serve as a teaching tool for the students. Mr. Krason worked with students from Watts and Robbins Elementary Schools in Kanawha County, assisting them in an effort to actively participate in the design process

Participated on the team that won the following awards and acknowledgements:
2020 WV AIA Merit Award Mountain Valley Elementary School, Green Valley, WV
2019 WV AIA Honor Award Charleston Coliseum & Convention Center, Charleston, WV
2018 WV AIA Citation Award Charleston EDGE, Charleston, WV
2017 WV AIA Merit Award Logan-Mingo Readiness Center, Holden, WV
2016 WV AIA Merit Award Christ Church United Methodist, Charleston, WV
2015 WV AIA Merit Award Edgewood Elementary School, Charleston, WV
2014 WV AIA Merit Award Girl Scouts of Black Diamond Council, Charleston, WV
2011 WV AIA Honor Award Joint Interagency Training and Education Center (JITEC), Kingwood, WV

John Pruett, PE, LEED AP

ZMM ARCHITECTS ENGINEERS

Role
Senior Mechanical Engineer

Professional Registrations
Professional Engineer (WV, VA, IN)
LEED Accredited Professional

Mr. Pruett is responsible for overseeing the design of the HVAC systems, ensuring that the HVAC systems not only meet the program requirements, but meet the 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. He coordinates with the other disciplines in order 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 career in engineering with a manufacturing company in 1994. In 1998, he made a career change and joined an engineering consulting firm as an HVAC design engineer. He has a broad range of experience in HVAC systems design, including K-12 schools, higher education facilities, office buildings, libraries, 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.

Project Experience
WVARNG Camp Dawson Building
WVARNG Camp Dawson Building 246
WVARNG Camp Dawson Building 301
WVARNG Camp Dawson Mail Facility
WVARNG Marshall County Readiness (Design)
WVARNG Camp Dawson Job Challenge Academy

Wood County Justice Center, Parkersburg, WV Mr. Pruett was responsible for the HVAC systems design for the LEED Silver project comprised of the judicial courts, Sheriff's department and holding cell area. The project utilizes high-efficiency custom air handling units, including an energy recovery unit for the holding cell area, which has helped reduce energy consumption on the project by 18% compared to a baseline analysis.

Tucker County Courthouse Annex, Parsons, WV
Mr. Pruett was the Mechanical Engineer for the Courthouse Annex renovation project and responsible for the HVAC

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

Employment History
2021- Present, Board of Directors, ZMM
2010 - Present, Project Engineer, ZMM
2007 - 2009, Sr. Mechanical Engineer, IN
2003 - 2007, Mechanical Engineer, IN
1999-2003, Project Engineer, Fort Lauderdale, FL

Civic Affiliations
- American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), Member
- United States Marine Corps – 14 Years

systems. The Annex is a 4-story, 21,000 Square Foot building that is adjacent to the Tucker County Courthouse. The annex will house spaces for the Circuit Court, Circuit Clerk, Family Court, Magistrate Court, Prosecuting Attorney, County Commission, County Clerk, Community Corrections, and Probation Office.

Huntington East Middle School, Huntington, WV Mr. Pruett was responsible for the HVAC systems design. This school features numerous sustainable features, including an air monitoring system for verifiable indoor air quality, variable refrigerant flow (VRF) systems for portions of the school that will operate year-round, preheating of the domestic hot water with the heating hot water return. Mr. Pruett also conducted an extensive energy analysis of the building and all of its systems to maximize the effect of each component, resulting in a projected reduction in energy consumption of 32% compared to a baseline analysis.

Edgewood Elementary School, Charleston, WV Mr. Pruett was the mechanical engineer on the new Kanawha County Elementary School on Charleston's West Side and responsible for the HVAC systems design. The school is being designed as a 21st Century Learning Environment, with a focus on integrating technology into the delivery of the curriculum. Instructional areas will be located off of an open 'exploratorium' that is being designed to function like a children's museum, providing a variety of learning opportunities, and flexible educational spaces. The school will also visibly integrate sustainable design principles to serve as a teaching tool for the students.

Cabell County Schools
Barboursville Middle School - Additions and Renovations
Huntington East Middle School
Huntington High School - Controls system replacement for
Explorer Academy
Cabell County Bus Garage
Southside Elementary/Huntington Middle School
Huntington High School – Cooling tower replacement
Cabell Midland High School - Cooling tower replacement
Martha Elementary School- Addition
Salt Rock Elementary Renovations
Cabell County Career & Technical Center – HVAC Replacement
Huntington High School Wrestling Room Addition
Milton PK - Additions and Renovations

Fayette County Schools
New River Primary / Oak Hill Middle School
Valley High School - Gym addition
Oak Hill High School – Renovations
Fayetteville PK-8 - Renovations
Midland Trail High School - Renovations
Valley PK-8 - Renovations
Meadow Bridge Elementary - Renovations
Divide Elementary - Additions and Renovations

Putnam County Schools
Hurricane High School - Renovations
Putnam Career & Technical Center – Welding Shop

Valley Health Systems, Wayne, WV
Mr. Pruett was the mechanical engineer on the new health clinic in Wayne, WV. ZMM prepared construction documents for a new, one-story medical building operated by Valley Health Systems of Huntington, WV. The building is 15,580SF on a 2-acre site including approximately 100 parking spaces. Valley Health Systems provides primary and preventative care to the medically underserved population of southern West Virginia. The new building will replace an existing undersized facility.

Rodney Pauley, AIA

Role
Project Manager

Professional Registrations
Registered Architect (WV)

Mr. Pauley is responsible for overseeing the daily design and production of the building, working in conjunction with in-house architectural, interiors and engineering staff to ensure the building not only meets the program requirements and budget, but meet the long-term needs of the owner. He also works directly with project principals to manage contracts, staffing and project deliverables. Mr. Pauley has a broad knowledge of building materials and services, building codes, and construction techniques, along with extensive experience in architectural detailing.

Mr. Pauley began his career in 1992 with an architectural firm in Atlanta, Georgia, and for the next 12 years rose to the Associate level by designing and managing a wide variety of project types including educational, retail, historic renovation, medical, and entertainment, specializing in office and speculative office design.

From 2005 through 2010, he worked at a number of Atlanta firms designing and managing office, high-rise condominium, and hotel projects. In 2010, Mr. Pauley moved back to Charleston, WV, to take a project management position with ZMM where he supervises the design and production of military, correctional and higher education projects.

Project Experience

Charleston Coliseum & Convention Center, Charleston, WV
Mr. Pauley served as project manager on the expansion and renovation to the Charleston Civic Center. The $75M, 283,000 SF design-build project was completed as a collaboration with tvsdesign and BBL Carlton. The design commenced in the spring of 2015, and construction was completed in the fall 2018.

WVSOM Tech Building Expansion (Testing Center), Lewisburg, WV
Mr. Pauley is currently the project manager on the design of the new testing center at WVSOM. The new testing center was designed to connect to the Tech Building to the CEC and will accommodate 220 students. The Testing Center does not have exterior windows, features from both buildings including masonry banding and natural stone elements were used to

Education
Bachelor of Architecture, University of Tennessee, 1992

Associate of Science, West Virginia Institute of Technology, 1986

Employment History
2010 - Present, Project Manager, ZMM
2008 - 2010, Project Manager, GA Firm
2006 - 2008, Project Manager, GA Firm
2005 - 2006, Sr. Project Architect, GA Firm
Jan. 2005 - Aug. 2005, Project Architect, VA Firm

Civic Affiliations
- American Institute of Architects, Member

provide human scale, while natural lighting is introduced in the concourse and pre-function space.

WV Lottery Headquarters, Charleston, WV
Mr. Pauley was the project manager and prepared construction documents for renovations to the existing WW Lottery Headquarters complex in Charleston, WV. Renovations to the existing 12-story office building include the demolition and reconstruction of three floors of tenant space and demolition and replacement of the existing roof along with various minor renovations throughout the office tower. The existing 5-story parking deck had extensive structural renovations. Renovations included: replacing bearing pads, patch & repair of concrete members and the addition of waterproofing protection. The existing warehouse under the parking deck was enlarged to provide additional storage space.

Pipestem Resort State Park Lodge, Pipestem, WV
Mr. Pauley is currently the project manager on the renovations to 88 guestrooms on first floor, bathroom expansions on the 7th floor, renovations to the dining area with a bar addition, renovations to all conference rooms, finish renovations in the lobby. ZMM will be replacing the ceilings and lightings in all public spaces and guestroom corridors in the main McKeever lodge building. Mountain creek lodge that sits below McKeever Lodge will receive a new roofing on the guestroom buildings and restroom will be renovated in the main tram building. The newly renovated lodge is set to open this summer 2021.

Morgantown Readiness Center, Morgantown, WV
Mr. Pauley was the project manager for the 58,000 square foot multi-use facility which includes assembly rooms, kitchen and dining facilities, military supply storage as well as locker rooms. The building is also designed to house the 249th Army Band and their associated practice and support spaces. This area is highlighted by a 150-seat auditorium and state-of-the-art main rehearsal stage. This project is aiming for LEED Silver Certification.

Beech Fork State Park, Lavalette, WV (unbuilt)
Mr. Pauley was the project manager for new lodge and conference center at Beech Fork State Park. The facility will include guestrooms and other guest-only facilities in one area and public functions such as the restaurant, lounge, gift shop, and conference rooms in another area. All guestrooms offer a lake view, a 2-story atrium opens up each end of the lobby with curtain-wall glazing, and an indoor pool provides a transparent connection to the outdoors. A high-performance envelope was designed to eliminate thermal bridging and the potential for condensation.

WVU Institute of Technology, Montgomery, WV
Mr. Pauley was the project manager responsible for owner coordination and construction document production for renovations to the Engineering Classroom Building at the WVU Institute of Technology campus in Montgomery, WV. The main project scope included various minor interior renovations to the existing 44,000 SF building in support of the Owner's replacement of the building's two elevators. Coordination was critical between ZMM, WVU, the owner's elevator supplier & installer and the WV Division of Labor.

Valley Health Systems, Wayne, WV
Mr. Pauley was the project manager on the new health clinic in Wayne, WV. ZMM prepared construction documents for a new, one-story medical building operated by Valley Health Systems of Huntington, WV. The building is 15,580SF on a 2-acre site including approximately 100 parking spaces. Valley Health Systems provides primary and preventative care to the medically underserved population of southern West Virginia. The new building will replace an existing undersized facility.

James W. Lowry, PE

ZMM ARCHITECTS ENGINEERS

Role
Mechanical Engineer

Professional Registrations
Professional Engineer (WV, PA, OH, MD)

Mr. Lowry is a registered Professional Engineer with design experience in:

- **Industrial**
Bayer Material Science, West Virginia Higher Education Policy Commission, Kuraray America, Armstrong Flooring, Covestro Laboratories.

- **Educational**
Renovations, evaluations and additions at Marshall University, West Virginia University Institute of Technology, Mercer County Schools and various other Schools and Universities statewide.

- **Commercial**
West Virginia Capitol Complex, West Virginia Parkways Authority

- **Heath Care**
Renovations, evaluations and additions at Cabell Huntington Hospital, Charleston Area Medical Center, Charleston Surgical Center, West Virginia Department of Health & Human Resources, Huntington VA Hospital and other various healthcare facilities statewide.

Relevant Experience
State Office Building #6 – Construction Administration
Keyser Middle School - HVAC and Roof
Pleasant Hill Elementary School – HVAC and Roof
Marshall University - Replacement Multizone HVAC
Marshall University - Prichard Chiller Replace 190
WVARNG - MCA South Renovations
Nitro Construction - DOW Modular Lab BLD
WVARNG - Kenova SCIF
Clay Center -Founders Lounge Dehumidify
WVHEPC - New River CTC Various Projects
WVARNG Building 202 Renovation
Goodwill Industries. - Expansion/Renovation (Teays Valley)
New River CTC - Welding Shop
Pipestem State Park Lodge - Renovations
Walker Machinery - Belle CRC Renovations

Education
BS, Mechanical Engineering, West Virginia University Institute of Technology, Montgomery, WV, 2004

Employment History
April 2018 - Present, Mechanical Engineer, ZMM
2015 - 2018, Mechanical Engineer, Pickering Associates

Civic Affiliations
- American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), President of West Virginia State Chapter

CAMC General Hospital - Replace Chillers
GSD - Capitol Guard House
WV Higher Education Policy Commission - Southern CTC Various Projects

Project Experience

Wood County Technical Center, Parkersburg, WV

Mr. Lowry was the Mechanical Project Engineer for this project. This project consists of renovations to 80% of the existing facility and an addition of 8 classrooms, one welding shop, multipurpose room and administration areas. The renovations included conversion of admin space to. classroom space, conversion of classroom space to pro-start kitchen space, conversations of existing welding shop to new broadcasting shop. Renovations to collision repair, auto mechanics and construction shops to bring them up to current codes and standards. Design of new HVAC system for all renovated areas, including specialized exhaust for the welding, painting, construction, and pro-start kitchen areas. Design of new HVAC systems for the addition classrooms, multipurpose area and admin areas.

WV Army National Guard, Kenova Secured Area, Kingwood, WV

Mr. Lowry was the Mechanical Project Engineer on the renovations of existing facility for the inclusion of a new sand alone secured area with the existing facility. Project conformed to all additional federal/military requirements for secured areas.

WV Army National Guard, Camp Dawson Secured Area, Kingwood, WV

Mr. Lowry was the Mechanical Project Engineer on the renovations of existing facility for the inclusion of a new sand alone secured area with the existing facility. Project conformed to all secured area with the existing facility.

Mountain State Oral Surgeons, Charleston, WV

Mr. Lowry was the Mechanical Project Engineer currently working with the developing contractor BBL Carlton renovations to the existing facility. The existing Office space will be converted to new patent care areas. We evaluated the applicable mechanical and plumbing codes and developed the plumbing construction drawings in conjunction with the Owner and BBL.

Project Experience with other Firms

Cabell-Huntington Hospital, Huntington, WV

Mr. Lowry was responsible for the evaluation and design of the existing facility chilled water distributions systems, design of a new 4600-ton chilled water plant, Development of phased construction plan to construct the new plant and distributions piping for tie-into the existing systems to minimize down time on the existing chilled water systems.

Armstrong Flooring, Beverly, WV

Mr. Lowry was responsible for the evaluation and design of the existing and the connection to existing mechanical systems to serve a new addition to the manufacturing facility. The new addition will consist of storing flooring product, loading docks, and admin area. The new area was designed to be heated via the existing steam systems and provided with humidification to protect the product. The work was designed in a manor to allow for phase of the construction without interruption to the facilities operations.

David Gunnoe, PE, CAP

Role
Electrical Engineer

Professional Registrations
Professional Engineer (WV, MI, VA, TX, MN)
ISA Certified Automation Profession (CPA)

Mr. Gunnoe has over 12 years of experience in power generation, material handling, and petrochemical process control. His technical expertise is in industrial electrical design with particular focus on industrial controls, automation, and instrumentation. He has been involved in every aspect of project completion from pre-planning, frontend design, detailed design, bidding, construction, and inspection all the way to final programming, system tuning, troubleshooting, commissioning, and long-term support.

Mr. Gunnoe now serves as an Electrical Engineer with ZMM and is responsible for all aspects of the electrical design process including interior and exterior lighting, power distribution, lightning protection, network system design, security systems, safety systems and fire alarms, low voltage control and automation systems, and equipment specifications. He also performs electrical inspections and assessments during construction and can consult and participate in troubleshooting efforts to remedy existing electrical issues.

Project Experience

- WV School of Osteopathic Medicine – New Testing Center Expansion, Lewisburg, WV
- WV School of Osteopathic Medicine – Community Health Center, Lewisburg, WV
- Williamson Health and Wellness Clinic, Williamson, WV
- Kanawha County Schools – The New Clendenin Elementary School, Clendenin, WV
- The Keith-Albee Theater Electrical and Life-Safety Upgrades
- Roane-Jackson Technical Center Plumbing and Electrical Renovations

Education
Bachelor of Science in Electrical Engineering, West Virginia University Institute of Technology, 2009

Employment History
2021 - Present, Electrical Engineer, ZMM
2014 – 2021, Control Systems Engineer, CDI Corporation, Charleston, WV
2012 – 2014, Control Automation Engineer, Nitro, WV
2010 – 2012, Department of Defense, Dalgren, VA
2008 – 2010, American Electric Power, Brillian, OH

Ronnie L. Burdette, PE

ZMM ARCHITECTS ENGINEERS

Role
Structural Engineer

Professional Registrations
Professional Engineer (WV)

Mr. Burdette serves as a Structural Engineer at ZMM. His experience he has gained while at ZMM includes Educational (Additions/Renovation to existing structures and Construction of new structures), Municipal (Community Centers), and Residential projects. Mr. Burdette's responsibilities include design and analysis of structural systems and documentation of design results.

Project Experience
Mr. Burdette has served as Structural Engineer on a variety of projects. His responsibilities included analysis and design of multiple building materials (Steel, Timber, & Concrete) and production of structural drawing sets.

New River Primary / Oak Hill Middle School, Oak Hill, WV
This project included two separate projects located on the same site. Both buildings were designed to be ICF and steel construction.

Valley Park Community Center, Hurricane, WV
This new community center replaced an existing one at the Valley Park Wave Pool. It was designed to be constructed from masonry, steel, and timber. The exterior design concept plays off the existing Commons Building which incorporates stone accents, wood siding and multi-sloped roofing around a floor plan that emphasizes the internal components. The Community Center entrance is highlighted by a large, exposed wood truss bearing on tall, battered stone columns. These wood beams are featured at all entrances and carry into the meeting room prefunction to provide a fully-exposed, open wood structure.

Charleston EDGE, Charleston, WV
The Charleston Edge renovation project included many different structural materials. The existing building is brick and masonry construction. Construction plans included the design of a new roof-top addition that was supported by structural steel.

Multiple Residential Renovations and Additions
The majority of residential work in the area consists of timber and masonry construction. Mr. Burdette has been involved in

Education
Bachelor of Science in Civil Engineering, West Virginia University, 2015

Master of Business Administration, University of Charleston (WV), 2016

Employment History
January 2017 – Present, Structural EIT, ZMM
May 2016 – Dec 2016, Civil/Structural EIT, Jacobs Engineering
May 2015 – Dec 2015, Civil/Structural EIT, CDI Corporation

residential projects that range from analysis of a 3-story wooden deck to the design of a new addition to an existing timber and masonry house.

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