



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: 1464651			Reason for Modification:
Doc Description: Building 74 Design Renovations Project			
Proc Type: Central Contract - Fixed Amt			Version
Date Issued	Solicitation Closes	Solicitation No	
2024-07-15	2024-08-07 13:30	CEOI 0211 GSD2500000001	1

BID RECEIVING LOCATION

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

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2024 AUG 13 PM 1:07

WV PURCHASING
DIVISION

VENDOR

Vendor Customer Code:

Vendor Name : ZMM Architects and Engineers

Address :

Street : 222 Lee Street West

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**

FEIN# 550676608

DATE August 13, 2024

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 25302
(Phone Number) / (Fax Number) 304.342.0159 / 304.345.8144
(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contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation/Contract for that product or service, unless otherwise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


(Signature of Authorized Representative)
Adam Krason, Principal 8/13/24
(Printed Name and Title of Authorized Representative) (Date)
304.342.0159 / 304.345.8144
(Phone Number) (Fax Number)
ark@zmm.com
(Email Address)



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Purchasing Division
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Post Office Box 50130
Charleston, WV 25305-0130

State of West Virginia
Centralized Expression of Interest
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Proc Folder: 1464651	Reason for Modification:		
Doc Description: Building 74 Design Renovations Project	Addendum no. 1 To answer Vendor questions and extend the bid opening date.		
Proc Type: Central Contract - Fixed Amt			
Date Issued	Solicitation Closes	Solicitation No	Version
2024-08-06	2024-08-13 13:30	CEOI 0211 GSD2500000001	2

BID RECEIVING LOCATION

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VENDOR

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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

FEIN# 550676608

DATE 8/13/24

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ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: CEOI GSD2500000001

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:

(Check the box next to each addendum received)

- | | |
|--|--|
| <input checked="" type="checkbox"/> Addendum No. 1 | <input type="checkbox"/> Addendum No. 6 |
| <input type="checkbox"/> Addendum No. 2 | <input type="checkbox"/> Addendum No. 7 |
| <input type="checkbox"/> Addendum No. 3 | <input type="checkbox"/> Addendum No. 8 |
| <input type="checkbox"/> Addendum No. 4 | <input type="checkbox"/> Addendum No. 9 |
| <input type="checkbox"/> Addendum No. 5 | <input type="checkbox"/> Addendum No. 10 |

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

ZMM Architects and Engineers

Company



Authorized Signature

August 13, 2024

Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.



EXPRESSION OF INTEREST

To Provide Professional
Architecture/Engineering Services:

BUILDING 74 DESIGN RENOVATIONS PROJECT

GSD2500000001
August 13, 2024

ZMM.COM

August 13, 2024

Melissa Pettrey, Senior Buyer
Department of Administration, Purchasing Division
2019 Washington Street East
Charleston, WV 25305



Subject: A/E Services for Building 74 Design Renovations Project (GSD2500000001)

Dear Ms. Pettrey:

ZMM Architects and Engineers, in partnership with WDP & Associates Consulting Engineers, is pleased to submit the attached information to demonstrate our experience and our qualifications to provide professional architectural and engineering design services renovations project for Building 74.

Established in 1959, ZMM is a Charleston-based, full-service architectural and engineering firm focused on excellence in design and client support. ZMM has extensive architectural and engineering experience across West Virginia evaluating and addressing the needs of existing buildings.

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, Building 37, the Culture Center, the Charleston Coliseum and Convention Center, Buildings 5, 6, & 7, and the Clay Center. Many of these projects, including our work on 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 Administration General Services Division on a variety of past projects on nearly every building at the Capitol Complex. Through our past work together, we hope you have observed our commitment to design quality, budget and schedule control, and client service demonstrated on these projects.

To supplement our team's qualifications regarding building envelope investigation, ZMM has partnered with WDP & Associates Consulting Engineers (WDP) for this endeavor. WDP, established in 1995, specializes in building façade investigations and repair, building envelope consulting and testing, and structural engineering. WDP's team has worked closely with the GSD on multiple successful projects including the water intrusion issues at the West Virginia State Capitol Dome, structural repairs for State Office Building 13 Precast Parking Garage, and the building façade renovation for the Public Service Commission of West Virginia. We have collaborated with WDP on projects in the past, including work at the Diamond Building.

Teamwork is the key to a successful project. To ensure this success, ZMM and WDP are committed to working in an objective and collaborative manner with GSD staff with a focus on meeting the vision, budget, and schedule. ZMM and WDP have detailed in the following pages our experience and approach to addressing the goals and objectives set forth for the renovations projects for Building 74.

Thank you for taking the time to review the attached expression of interest that has been formatted per the requirements of the Request for Proposal. Please visit zmm.com and wdpa.com to see the full range of projects that we have designed, and to learn about working with us 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

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

Adam R. Krason, AIA, LEED-AP
Principal

WDP & Associates Consulting Engineers, Inc.

A handwritten signature in blue ink, appearing to read 'R. Cyphers'.

Rex Cyphers, PE
Principal

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FIRM PROFILES

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, 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 65 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 & 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 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	Programming
Existing Building Evaluation	Feasibility Studies
Space Planning	Site Evaluation and Analysis
Master Planning	Construction Cost Estimating

Design

Architectural Design	Sustainable Design
Interior Design	Landscape Architecture
Lighting Design	

Engineering

Civil Engineering	Structural Engineering
Mechanical Engineering	Electrical Engineering
Energy Consumption Analysis	Net-Zero Buildings

Post-Design

Construction Administration	Value Engineering
Life Cycle Cost Analysis	Post-Occupancy Evaluation

As ZMM looks to the future, we remain committed to providing high-quality, client-focused design solutions that meet budget and schedule requirements. We listen, respond promptly with innovative and efficient solutions, and deliver quality projects and develop lasting relationships. Because at ZMM, it's about more than architecture, it's about building your legacy.



FIRM OVERVIEW



WDP & Associates Consulting Engineers, Inc., (WDP) is an SBA-certified (1KZR5) and WV SWaM consulting engineering firm specializing in building façade investigations and repair, building envelope consulting and testing, structural engineering, and historic preservation.

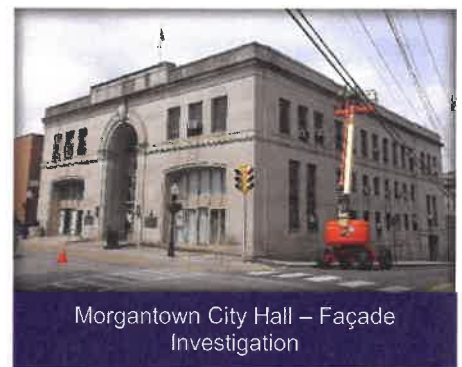
At WDP, creating lasting engineering solutions is at the heart of our business.

WDP's staff has worked closely with the West Virginia General Services Division (GSD) on multiple successful projects since 2015. We have investigated water intrusion issues at the West Virginia State Capitol Dome as well as designed structural repairs for the GSD's Building 13 precast parking garage. Our ongoing projects at the Capitol Complex for the West Virginia General Services Division and our completed project at the Public Service Commission Headquarters building have brought us to Charleston on a weekly basis for the last 6 years. Our experience in the state began over 19 years ago with a project at West Virginia University in Morgantown, and we remain dedicated to serving the needs of our West Virginia clients. In the last five years alone, we have worked on 18 projects from Charleston to Morgantown to Snowshoe; our services on those projects have included evaluating the structural stability of existing building components, investigating air and water infiltration issues, evaluating the hygrothermal properties of existing wall assemblies, and providing recommendations for repairs. **In 2020, we officially opened an office in Hinton to better serve the needs of our clients throughout the State of West Virginia.**

WDP performs over 80 façade assessments, roof, building envelope, and structural investigation and repair projects every year. **Most of WDP's repair projects involve facilities that must remain occupied and operating "business as usual" throughout the investigation and repair process.** Our investigative strategies and value-based repair designs have addressed countless issues, such as building envelope problems manifested through air/water leakage, occupant comfort issues, structural deficiencies caused by moisture infiltration, differential movement, general deterioration of building materials, biological growth, and aesthetic deficiencies, among others.

Façade and Building Envelope Evaluations

WDP provides a variety of services related to building facades and enclosure systems, including facade assessments, leakage investigations, peer review of architectural design, development of repair and restoration documents, mockup and field performance testing, enclosure commissioning and construction administration services. Our expertise in the diagnosis and correction of exterior envelope systems includes extensive knowledge of brick and natural stone masonry (both veneer and adhered systems), fenestration systems, roofing, stucco, exterior insulation and finish systems (EIFS), precast concrete wall panels, architectural metal panel systems, concrete, and steel structures. WDP's professional team of envelope specialists are experienced in performing hands-on inspections with particular care given to original construction materials and evaluation of pre-existing repairs. No matter the age of the facility, from historic 18th and 19th century structures to newly constructed buildings experiencing post-occupancy problems, WDP has experience in preservation and improving the value of existing facility assets through tailored engineering solutions. Our investigative strategies and cost-effective design approaches have addressed countless façade issues, such as cracking, facade instability, air and water leakage, mold growth, and aesthetic deficiencies.



FIRM OVERVIEW

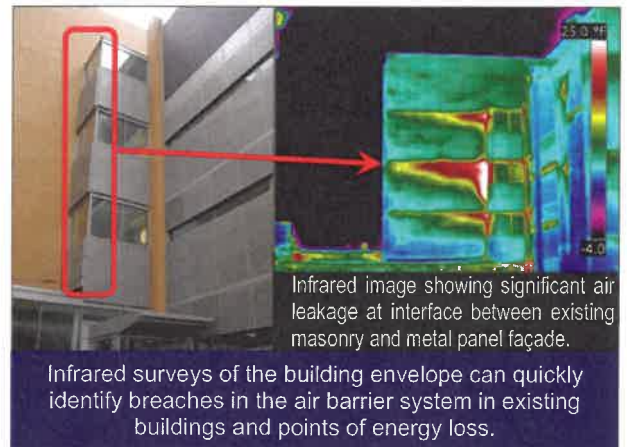


West Virginia Diamond Building – temporary protection for pedestrians while maintaining building occupancy.

In addition to developing designs for numerous window replacement and envelope repair projects each year, WDP has served as the Engineer of Record for the investigation, design, and construction administration of over 16 full façade replacement projects to restore the structural performance and weather resistance of curtainwall, EIFS, stone, concrete, brick masonry, and metal panel facades. We routinely transition from the evaluation of problems into the production of repair and restoration design documents, bid solicitation, bid evaluation, construction administration, and quality assurance inspection. More often than not, our clients must maintain occupancy and use of their building throughout the course of the repair project. WDP has experience developing construction phasing that minimizes disruption and considers egress routes through the building to ensure occupant safety is held paramount through the construction phase of the project.

Building Enclosure Consulting

WDP provides professional building enclosure consulting services, including façade assessment and diagnostic testing as well as field investigations of reported moisture issues in existing buildings; peer review for the architectural design of building enclosures; repair and restoration design and construction administration for building facades; mock-up and field performance testing utilizing standardized testing methods for air and water; enclosure commissioning; and construction monitoring. Our expertise in the diagnosis and correction of exterior envelope systems includes extensive knowledge of brick and natural stone masonry, window/curtain wall systems, roofing, exterior insulation and finish systems (EIFS), wood, stucco, precast concrete wall panels, architectural metal panel systems, concrete, and steel structures. Our flexibility enables us to address a discrete problem or design a comprehensive restoration program for an entire complex. As energy codes evolve and LEED certifications become more commonplace, air barrier systems have become a major item of the building envelope that requires inspection and certification. WDP staff includes field auditors who have been trained and certified under the Air Barrier Association of America's Quality Assurance Program.



As building enclosure consultants, WDP engineers have developed in-house nondestructive testing capabilities to provide a seamless interface between field evaluations, engineering evaluation, and maintenance/repair design. We have a broad range of construction investigation experience and materials testing capabilities. Using test specifications developed by the American Society for Testing and Materials (ASTM), American Architectural Manufacturers Association (AAMA), American National Standards Institute (ANSI), and others, our laboratory can offer a wide range of quality control testing for new construction, materials analysis and monitoring, and failure investigations.

FIRM OVERVIEW



Roof Consulting Services

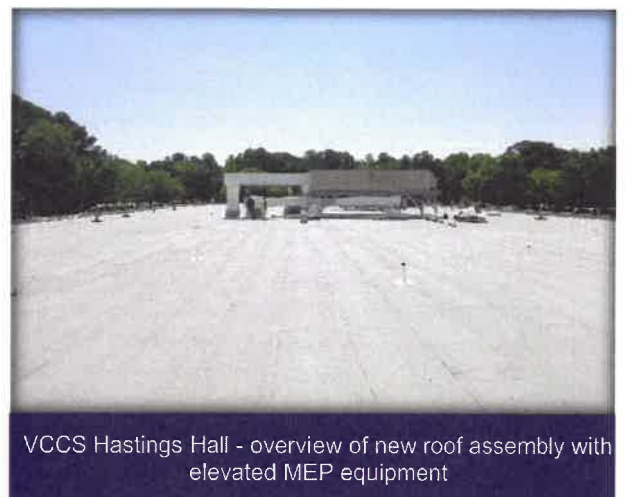
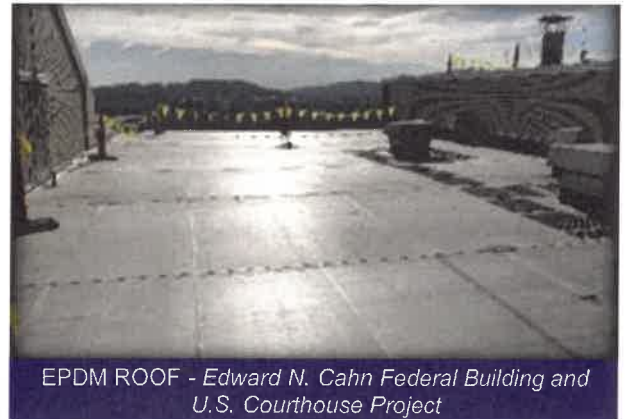
WDP's highly qualified engineering staff performs roof design engineering and roof inspection services. Our most frequently requested services include roofing evaluations, design engineering, roof inspections, construction administration services, and new construction peer review. Roof inspections and evaluations may include review of pertinent plans and documents, field investigations, nondestructive or destructive testing, laboratory analysis and testing, structural analysis, design work for structural repairs or strengthening, contract document and bid document preparation, as well as construction management or quality assurance inspections.

WDP's experience in roof consulting services includes designing, inspecting, and testing a complete range of low slope single ply and built-up roof systems such as EPDM, modified bitumen, TPO, PVC, spray polyurethane foam, and hybrid roof systems. We also have similar levels of expertise with solar photovoltaic panels, garden roof systems, exposed and protected membrane roof systems, steep sloped roof systems including asphalt shingles, slate shingles, and clay tile roofing.

WDP's licensed professionals are not only experienced at the evaluation phase of existing roof systems but also in developing repair recommendations and conducting repair oversight of the project. WDP is qualified to assist in developing contract documents to replace the entire roof system or develop pertinent details to conduct isolated repairs. In addition, WDP performs peer reviews and develops design documents, as well as construction administration services, for new construction.

WDP has extensive experience providing forensic roof and parapet repair/replacement services for buildings nationwide. Some notable examples include:

- **GEORGE MASON UNIVERSITY, COLGAN HALL** – Roof Replacement Investigation, Design, & CA Services
- **MONTGOMERY COLLEGE, MD, ROCKVILLE CAMPUS CENTER** - Roof Replacement Investigation, Design, & CA Services
- **RADFORD UNIVERSITY, DEDMON CENTER** - Roof Replacement Investigation, Design, & CA Services
- **ROANOKE HIGHER EDUCATION CENTER** - Roof Replacement Investigation, Design, & CA Services
- **VIRGINIA COMMUNITY COLLEGE SYSTEMS (VCCS), VIRGINIA PENINSULA COMMUNITY COLLEGE – HASTINGS HALL** – Roof Replacement Investigation, Design, & CA Services
- **VCCS, VIRGINIA PENINSULA COMMUNITY COLLEGE, TEMPLIN HALL COLLAPSE** – Roof Replacement Investigation, Design, & CA Services
- **WALTER REED NATIONAL MILITARY MEDICAL CENTER, ANIMAL RESEARCH FACILITY RENOVATIONS & ADDITION** -Roof Systems Survey & Design Peer Review
- **GEORGE MASON UNIVERSITY, BULL RUN HALL** – Roof Replacement Investigation, Design, & CA Services
- **NATIONAL INSTITUTE OF HEALTH BUILDING, E WING RENOVATION** - Design and CA enclosure consultant for the A/E for repairs to exterior building walls, fenestration replacement and roof system replacement
- **THE GEORGE WASHINGTON UNIVERSITY, CORCORAN SCHOOL OF THE ARTS & DESIGN** - Roof System Investigation and Roof Replacement Design
- **VCCS, TIDEWATER COMMUNITY COLLEGE ADVANCED TECH CENTER BUILDING** - Roof Replacement Investigation, Design, & CA Services



FIRM OVERVIEW



- **VIRGINIA TECH, DAVIDSON HALL, LIBERAL ARTS CENTER, AND SANDY HALL** - Building envelope condition assessments and construction observation during renovations
- **WEST VIRGINIA UNIVERSITY, HEALTH SCIENCE CENTER** - Façade and Roofing Investigation & Repair Design

Façade Evaluation Access

To effectively evaluate the building façade, you have to be able to get to it. WDP assists owners and property managers with cost-effective and expeditious ways to perform facade inspection programs for all types of exterior walls and façades. WDP's professional engineers and architects perform close-up inspections and evaluate conditions observed based on technical experience and comprehensive understanding of wall and window systems. Access is typically provided from scaffold, aerial lifts, or suspended platforms, which can take time to assemble and relocate to different portions of the building.

For difficult access conditions, WDP routinely utilizes industrial rope access for façade evaluations with our SPRAT-certified and professionally licensed personnel thus limiting the time and impact of using a traditional scaffolding system. Rope access allows our staff to evaluate multiple areas of a building façade with relatively little setup time or costs. WDP also has capabilities to perform diagnostic testing and non-destructive testing from rope access when more than just visual observations are required.



Structural & Forensic Evaluation and Design for Existing Structures

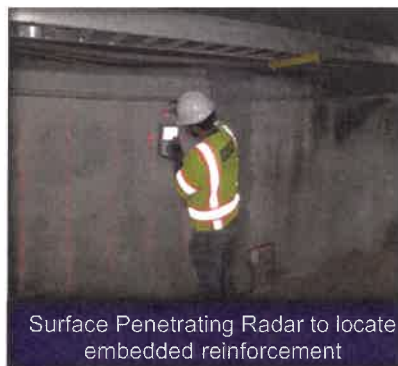
Field Investigation of Existing Structures

WDP's experience with performing field investigations of existing structures and parking garages is at the heart of our success and a key component of our project approach. Field investigations are performed to assess and quantify existing structure conditions or feasibility for alterations, to evaluate the cause of deterioration or structural failures, or to verify the original design or capacities of given as-built conditions.

WDP's investigative methods include visual observations, non-destructive testing, structural monitoring, in-situ testing, and material sampling and testing. WDP's professionals are experienced at interpreting and analyzing the results of the evaluation components and develop conclusions and recommendations based on the facts obtained.



Evaluation of corroded structural steel framing elements



Surface Penetrating Radar to locate embedded reinforcement



Half-cell testing for reinforcing steel corrosion

WDP engineers are nationally recognized experts in **non-destructive testing (NDT)** and evaluation of existing structures. WDP regularly employs a variety of NDT methods, all performed by WDP personnel, to examine existing structures. These test methods can be invaluable in identifying existing conditions, developing the proper diagnosis, and subsequently, most effective recommendations for a given structure.

FIRM OVERVIEW



WDP's use of non-destructive testing often helps to reduce the extent of destructive testing and probe openings required, thus reducing the impact on the structure, and saving time and cost to the Owner. Results from non-destructive testing are used to determine the extent and severity of damage and can be incorporated into structural analysis models to predict the impact of measured damage on the performance of a structure.

In the case of distressed structures, historical restoration projects, and renovations and upgrades to existing buildings, it is often beneficial to obtain an understanding of how the structure is behaving in order to develop better recommendations. WDP has experience with a wide range of visual and electronic **instrumentation for field data monitoring and collection** to record the behavior of existing structures. Whether measurements need to be made inside or outside, statically, or dynamically, accessibly, or remotely, WDP can develop and deploy a data monitoring and collection scheme to complement a project's unique objectives.

Instrumentation used for field data monitoring and collection:

- LVDTs
- LVITs
- Strain gauges
- Load cells
- String potentiometers
- Accelerometers
- Seismographs

WDP staff are able to analyze and interpret the data relative to the actual construction to understand how the structure is behaving. We are able to incorporate these results into our advanced structural models and improve the accuracy of our structural analyses and develop representative design recommendations. WDP's field investigations and structural analyses are supported by our WACEL and AASHTO-certified **in-house laboratory**. Based on the needs of a specific project, WDP has the unique capabilities of performing highly specialized field sampling for testing in accordance with specifications developed by the American Society for Testing and Materials (ASTM), American Concrete Institute (ACI), and others.

Non-Destructive Testing:

- Sounding
- Pachometer
- Surface-Penetrating Radar
- Impact-Echo
- Ultrasonic Pulse Velocity
- Half-Cell Potential
- Infrared Thermography

Our broad and diverse experience performing field investigations of existing structures gives WDP staff an extensive understanding of how structures are constructed, how building construction has changed over time, and common deterioration mechanisms. WDP has extensive first-hand experience with the long-term effects from different designs and construction modes on building performance through our investigations of post-occupancy failures. WDP's failure investigations typically combined a detailed study of available construction documents, on-site field investigation, material testing, and structural analysis to determine the cause of the problems and develop remediations to correct them.

WDP's knowledge of building construction practices and performance provides uncommon insights into project feasibility for repairs or alterations to existing buildings and informs our design process to improve the constructability and performance of our projects. Through our many years of successful investigations, our expertise in determining the causes, effects, and remedies for structural problems has resulted in unique insights preventing those same problems in new construction.

FIRM OVERVIEW



Proposed Staffing Plan

The following chart illustrates the roles and experience of the key personnel who will be assigned to this project:

WDP & Associates REX CYPHERS, P.E. – PRINCIPAL | COO
PROJECT ROLE: PRINCIPAL ENGINEER

Rex's project role will include:

- Providing expertise and guidance for WDP's project team during the evaluation, design, and construction phases.
- Coordinating WDP's team
- Maintaining client communication and satisfaction
- Ensuring compliance with project delivery dates and milestones

WDP & Associates JODI KNOROWSKI, P.E. – SR. ENGINEER
PROJECT ROLE: PROJECT MANAGER (BUILDING ENVELOPE)

Jodi's project role will include:

- Coordinating work of the Building 74 - Building Envelope Team, including coordination and communications with the GSD and ZMM.
- Developing and maintaining project plan for the building envelope in coordination with the State's parameters and project goals
- Leading the building envelope field investigation
- Managing repair recommendations development
- Managing and review of repair design and construction document development
- Providing on-site construction phase services

WDP & Associates Andrew WAGNER, P.E. – ASSOCIATE
PROJECT ROLE: QA/QC MANAGER (BUILDING ENVELOPE)

Andrew's project role will include:

- Providing in-house independent peer review of design documents
- Monitoring and management of internal quality control process

WDP & Associates KATE FRANCZEK
PROJECT ROLE: STAFF ENGINEER (BUILDING ENVELOPE)

Kate's project role will include:

- Providing support during field investigation of the building envelope
- Developing of repair recommendations
- Providing Schematic design, design development, and preparation of construction documents
- Providing Construction administration support

WDP & Associates TYLER WILLIAMS
PROJECT ROLE: STAFF ENGINEER (BUILDING ENVELOPE)

Tyler's project role with include:

- Providing support during field investigation of the building envelope
- Support development of repair recommendations
- Support schematic design, design development, and preparation of construction documents
- Providing on-site construction phase support

FIRM OVERVIEW



JOHN M. GRILL, P.E. – SR. ASSOCIATE

PROJECT ROLE: PROJECT MANAGER (STRUCTURAL)

John's project role will include:

- Coordinating work for the Building 74 - Structural Team, including coordination and communications with the GSD.
- Developing and maintaining project plan for the Structural Team in coordination with the State's parameters and project goals
- Leading the structural field investigation
- Management of repair recommendations development
- Management and review of repair design and construction document development
- Providing on-site construction phase services



B.J. LEE, PH.D., P.E., S.E. – ASSOCIATE

PROJECT ROLE: QA/QC MANAGER (STRUCTURAL)

BJ's project role will include:

- Providing in-house independent peer review of design documents
- Monitoring and management of internal quality control processes



PATRICK DILLON, PH.D., P.E.

PROJECT ROLE: SR. ENGINEER (STRUCTURAL)

Patrick's project role will include:

- Assisting in the structural field investigation
- Providing technical oversight for structural analysis of repair recommendations development
- Provide technical oversight for structural analysis of repair design and construction document development
- Providing on-site construction phase services



Teagan Allen, P.E. – Project Engineer

PROJECT ROLE: PROJECT ENGINEER (STRUCTURAL)

Teagan's project role will include:

- Providing support during structural field investigation
- Structural analysis and development of repair recommendations
- Schematic design, design development, and preparation of construction documents
- Construction administration support



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PROJECT APPROACH

PROJECT BACKGROUND AND GOALS/OBJECTIVES

Project Background

As it states in the EOI, Building 74 is a three-story 35,460 SF office building located at 324 4th Avenue, South Charleston, WV. The WV Division on Natural Resources has occupied the building since 2009. The building envelope, electrical, mechanical and plumbing systems are outdated and in need of modernization with more cost-effective and energy efficient systems. In 2021, a renovation of the facility was planned but never implemented for construction.

Project and Goals

The technical nature of the Building 74 project demonstrates the need for a full-service design team with experience working with the State of West Virginia General Services Division. ZMM and WDP have all of the technical professionals - including architects, engineers (forensic engineers, structural, mechanical, and electrical), building envelope consultants, and interior designers - needed to address every aspect of this GSD project. If selected for this engagement, ZMM and WDP will staff the project with architects, engineers, and consultants who have previously delivered a variety of successful assessment and renovation projects for the General Services Division, including various improvements to WV Building 37 Department of Environmental Protection, WV State Office Buildings 5, 6, & 7, and the WV State Capitol.



The project goals and objectives listed below, along with anticipated concepts and proposed methods of approach for achieving each listed goal:

Goal/Objective 1 - The Vendor shall perform a thorough assessment on the existing facility to determine the current condition of the building envelope, the facility's interior and exterior finishes, windows, roof, mechanical and electrical systems. Within the assessment, Vendor shall address and provide options for resolving found building code and life safety issues. The Vendor to also include within their assessment an evaluation of the facility's structural integrity.

Due to the integrated design approach provided by ZMM Architects and Engineers, our firm has become a trusted resource for renovation and adaptive reuse projects throughout West Virginia. In many cases, and as is anticipated for the Building 74 Assessment and Renovation, the first step in a successful renovation project involves ZMM and WDP conducting a detailed facility assessment to assist building owners with the scope and budget development process. The purpose of the assessment is to determine the condition of the major building systems and to identify both immediate and long-term enhancements that will be required to fully improve the building.

Project Goals/Objectives (cont.)

To develop an investigation plan, ZMM and WDP would perform a site visit with the project stakeholders to ensure a thorough understanding of the observed concerns and evaluate any constraints in performing an evaluation.

We would review any available project records, including original drawings and specifications, subsequent repair projects, or maintenance reports to get a general understanding of the building history and operation.

The team will focus the investigation on the systems provided below:

BUILDING ENVELOPE

WDP has extensive experience with performing condition assessments and evaluations of the building envelope of existing buildings. The building envelope for Building 74 generally consists of brick masonry, fenestration, and a roof membrane. At this time, it is unknown if there is active water infiltration into the building, occupant comfort concerns that could be a result of air infiltration, or air quality issues resulting from moisture-related issues within the envelope assemblies. WDP will perform a visual survey of the building envelope with the project stakeholders and building users to understand any known issues. A field investigation will be performed to evaluate the root cause of any observed issues. For brick masonry, diagnostic water testing can be utilized to evaluate effectiveness of existing flashing systems or water penetration rates through the masonry. WDP is also capable of evaluating any structural instability of the brick using techniques noted below.

WDP's Architectural Testing division can perform standardized water penetration testing and air leakage testing of existing fenestration components to understand existing performance. Through the use of insitu data logging instrumentation, WDP can also get a general understanding of the thermal performance of existing fenestration systems in order to evaluate options for improving energy efficiency. For the roof assembly, WDP can perform infrared surveys and moisture mapping to determine locations of the roof that may be compromised and require remedial repairs. From a life safety standpoint, an evaluation can be performed to determine methods for incorporation of a safety rail into the project or roof tie-off points that would be able to be seamlessly incorporated into a potential roof replacement project.



Project Goals/Objectives (cont.)

WDP understands the building science aspect of how a building performs holistically. In coordination with the mechanical experience offered by ZMM, our team can provide recommendations for an overall repair strategy to make improvements to building envelope systems and mechanical systems that will improve the overall efficiency and energy performance for the building.

Exploratory openings are also a key aspect of a field investigation to verify existing construction of the building and any components that may be contributing to issues within the building. This also affords the opportunity to uncover unknown conditions in order to mitigate the potential for unforeseen conditions during the construction phase of the project. WDP approaches field investigations with the mindset that design development will be forthcoming, thus collecting the information that would be required to develop a repair design. This helps expedite the design process such that further study of the building can be limited and there is a smooth transition from the investigation phase of the project to the design phase of the project.

MECHANICAL

ZMM has extensive mechanical engineering experience and our mechanical engineers have routinely assisted in resolving HVAC issues in collaboration with the General Service Division (GSD). Our related experience is listed below:

- Resolving building pressurization issues in Buildings 5, 6, & 7
- Mapping existing mechanical systems in the Main Capitol Building
- Developing recommendations for mechanical improvements to mitigate the transmission of Covid-19
- Providing recommendations to correct mechanical systems in Building 3 (overheating in conference rooms)
- Assisted in resolving HVAC control issues at Building 53
- Resolving heating and cooling issues at the Governor's Mansion



ZMM's mechanical engineers will use the results of the assessment to develop upgrade recommendations. The approach will be to utilize existing equipment (when feasible) with a focus on reliability, occupant health and comfort and energy efficiency.

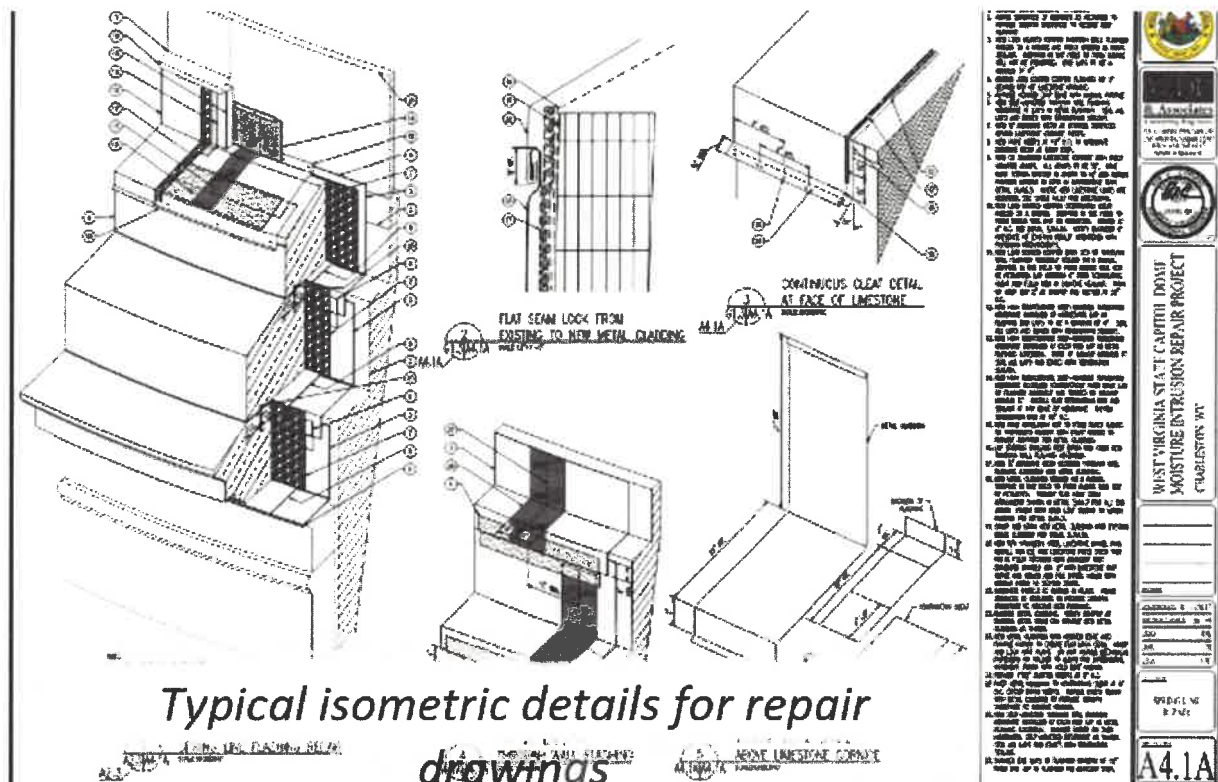
Project Goals/Objectives (cont.)

Goal/Objective 2 - The Vendor shall be requested to provide design services consisting of construction bidding documents, a cost estimate with design options, and construction administration services for a comprehensive renovation of the facility. The Vendor should resolve building code and life safety issues within the construction documents bringing the building up to current office building standards. Vendor shall include site improvements consisting of parking lot repaving and upgrading the existing site lighting. Submission of biddable construction documents will be on an expedited schedule in order to meet projected construction goals having a fully renovated building completed June 2025.

CONSTRUCTION ADMINISTRATION SERVICES

ZMM and WDP have extensive experience generating Contract Documents for the State of West Virginia to include both drawings and project manuals for repair projects including façade repairs that include window and roof replacements, along with mechanical, plumbing, and electrical upgrades. We are familiar with the requirements in The State of West Virginia building codes, the process for reviewing the Contract Documents with the State Fire Marshal, and supporting the State through the bid process. When developing Contract Documents, ZMM and WDP take pride in developing a set of details and specifications that are unique to the project. Typically, the integration details between a plan view and section view are the most critical for a repair. As such, ZMM and WDP routinely incorporates isometric details into our drawing packages to clearly convey the repair design at these intersections. Our project specifications are also unique to the project and are often written by the same engineer that is developing the details in the drawings to ensure coordination between the drawings and specifications for the project.

ZMM and WDP also recognize the need to perform repairs while the building remains fully occupied and operational. We would work with the project stakeholders to understand any limitations with door closures and evaluate egress routes through the building to determine proper pedestrian protection and safeguards during construction. Phasing requirements and temporary protection measures would be incorporated into the construction documents to clearly convey these requirements to potential bidders. Our previous experience providing services on occupied buildings has been demonstrated through our work on improvements to Buildings 1, 5, 6, & 7 on the Capitol Complex.



Project Goals/Objectives (cont.)

With repairs to existing buildings, unforeseen conditions are likely to arise during construction. We understand the importance of being actively engaged throughout the construction phase and having a consistent presence on the project site to ensure repairs are executed in accordance with the construction documents. With the proximity of our offices to Building 74 in South Charleston, we are able to be responsive to issues that may arise on site and can work closely with the project team to quickly address them.

SIMILAR COMMERCIAL OFFICE/RENOVATION

ZMM has renovated buildings throughout the region and has a history of providing services on improvement projects to many landmark buildings including the West Virginia State Capitol, the Culture Center, the Charleston Civic Center, State Office Buildings 5, 6, & 7, and the Clay Center. Each of these buildings remained occupied during the upgrades. In addition to our renovation experience, ZMM has provided services on multiple commercial office space projects that had a similar intent of providing flexible, modern office space. Other projects include renovations to various floors in State Office Buildings 5, 6, & 7, the West Virginia Housing Development Fund office, and the West Virginia Lottery Headquarters on floors 7, 8, and 9.



The most relevant project to the current proposed project is State Office Building 37. The improvements commenced with an overall building assessment that examined the condition of the building. Once the assessment was completed, improvements were presented to the State for consideration. These options ranged from maintenance level repairs to more comprehensive approaches, and included budgetary cost estimates such that the State could understand the value of each repair strategy. For the building envelope, it was determined that the roof would be replaced, to include new integrations with adjacent building components, and maintenance level repairs would be undertaken at the ribbon windows. This work would be performed in coordination with the improvements to the mechanical system. Simultaneously, WDP is evaluating the structural displacement of an exterior wall at an isolated location on the building. WDP is performing a geotechnical evaluation as well as a visual survey of the conditions in order to determine the root cause of the displacement such that a repair approach can be developed. The WDP and ZMM team is currently developing the repair documents for this project and will provide construction administration services once the project enters construction.

Project Goals/Objectives (cont.)

SITE IMPROVEMENTS

ZMM has three (3) in-house Civil Engineers in the Charleston office. Our engineers can be readily available and have extensive experience with site and parking area improvements. ZMM will comply with any and all building codes and site design criteria as it relates to parking area improvements. ZMM will address upgrades and improvements to the site lighting design in the parking areas.



SCHEDULE

ZMM and WDP understand the schedule limitations for the project and are eager to get a better understanding of the condition of the building and extents of repairs that will be required. With our background working with the State, we value the relationship we have built and would prioritize staffing to meet the needs of this project. Once the full scope of work is understood for the project, ZMM and WDP will develop a design and construction schedule with the goal of meeting the Fall 2025 project completion deadline. As is the nature of restoration work, unforeseen conditions discovered during a preliminary investigation or during the construction phase of the project could impact the proposed schedule, and our team would be transparent with the State regarding any scope items that we felt could not be completed within the proposed schedule. We would provide the State with the information necessary to determine the extent to which decisions would be schedule driven or if alternate approaches could be evaluated if they add value to the project.

Why is ZMM Architects and Engineers and WDP & Associates Consulting Engineers the right team to assist the State of West Virginia General Services Division on the Building 74 Project?

We are confident that ZMM and WDP have the right combination of renovation and governmental office design and construction phase experience to successfully deliver this project. Additionally, we are confident that the project approach outlined above will include the most thorough building investigation possible which will help ensure the successful delivery of the project. Most importantly, the ZMM and WDP team has worked collaboratively with the General Services Division to successfully deliver similar projects. We are hopeful that you have observed our commitment to design quality, budget and schedule control, and client service demonstrated on these projects.



3

RELEVANT EXPERIENCE



BUILDING 37 WINDOW, HVAC, ROOF, AND ENVELOPE UPGRADES

LOCATION CHARLESTON, WV	SIZE 151,000 SF	COMPLETION FALL 2025	COST BUILDING ENVELOPE \$5.6M MECHANICAL \$3.5M
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ZMM and WDP partnered to support upgrades at Building 37, also known as the Department of Environmental Protection.

Building 37 was constructed in 2003 and is a three-story building featuring ribbon windows and concrete masonry veneer with a large entrance curtain wall. Water infiltration around the windows was an ongoing issue with the building, leading to isolated repairs undertaken in 2011. However, these repairs did not address the underlying issues and further evaluation was required. WDP teamed with ZMM to perform an evaluation of the building that incorporated both building envelope components and HVAC systems.

WDP performed a field investigation and performed diagnostic water testing and exploratory openings to identify the root cause of the water infiltration. It was found that a water resistive barrier was not incorporated into the exterior wall and joints in the sill flashing permitted a significant amount of water to drain down into the wall cavity. Without a mechanism to properly drain this water out of the wall cavity, it is directed towards the interior of the building at the windows. This led to deterioration of the wood sill supports below the windows as well as corrosion of structural steel elements.





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.

ZMM has assisted the State of West Virginia General Services Division with various improvements to the buildings, which commenced with an assessment that examined the condition of the buildings, as well as cost and phasing options for various upgrades. Improvements undertaken have ranged from substantial renovations to maintenance and repair projects. ZMM provided design services for the renovation of the 10th Floor of Building 5 for the Office of Technology, which focused on demonstrating the potential for renovating the floors 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 was delivered considerably under the anticipated budget.

The next phase of renovation involved abatement, demolition, new construction, and updated life safety systems. ZMM assisted with roof replacement for all three buildings, utilizing white EPDM roofing material, with consideration being given to sustainability. ZMM also assisted with expanding the electrical courtyard, improving the electrical service entry, replacing windows and entry doors, providing design services to replace the caulk between the exterior limestone and precast panels, and a valve replacement project to isolate mechanical risers.



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WEST VIRGINIA STATE CAPITOL

LOCATION | COMPLETION
CHARLESTON, WV | 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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WEST VIRGINIA LOTTERY HEADQUARTERS

LOCATION	SIZE	COMPLETION	COST
CHARLESTON, WV	42,082 SF	2016	\$7.5M

This project is an extensive renovation of an existing 13-story office building and 7-story parking garage in downtown Charleston, WV.

Renovations within the office building consist of three existing tenant floors, relocation of the fitness center, and replacement of the roof. The WV Division of Insurance was relocated to floors 7, 8, and 9. Off the renovated elevator lobbies on each floor is a reception area which leads to an interior space of enclosed offices. A tenant space on the sixth floor is being renovated into the new fitness center. Construction on the roof includes the replacement of insulation and membrane and the installation of new roof davits and stainless-steel guardrail.

The parking deck was renovated, including structural repairs, electrical upgrades, and an addition to the storage warehouse. It was determined that bearing pads need to be replaced under the framing members, concrete structure and topping slabs needed repair, and spandrel panels required epoxy injection to repair cracking. Driving surfaces received new waterproofing, sealant joint replacement, and restriping. The circulation connector required partial reconstruction of the steel deck and floor slabs. Electrical improvements consists of new LED lighting and additional pole fixtures on the top level. The storage warehouse increased by 1,800 SF and consist of masonry walls clad in EIFS with a sloped steel-framed roof and single-ply membrane system.





WV SCHOOL OF OSTEOPATHIC MEDICINE

LOCATION | SIZE | COMPLETION
LEWISBURG, WV | VARIOUS | ONGOING

The Main Building for the West Virginia School of Osteopathic Medicine was originally built in the 1920's with numerous additions and alternations over the years.

The Main Building was built with five major pods and enclosed corridors connecting the pods into one large multistoried building that includes offices, classrooms, library, and meeting rooms. The building's brick and stone exterior is old, some more than 90 years old, and exhibits deterioration from the effects of exposure to the exterior elements.

The brick and stone exterior shows deterioration of the mortar joints and various cracks from expansion and contraction from temperature change and freezing. The steel lintels above doors and windows exhibit rusting, some have rusted enough to cause structural damage to brick or concrete header. Concrete, cement plaster elements along with metal flashing also show some deterioration and are in need of repair. ZMM produced construction documents to clean and repair all deteriorated portions of the building's exterior. These documents show all the building's exterior condition and include details, specific repair instructions and quantities of repair work for the entire building.

In 2021, the Main Building received a roof replacement.





WV REGIONAL TECHNOLOGY PARK

LOCATION | SIZE | COMPLETION
SO. CHARLESTON | VARIOUS | ONGOING

ZMM has provided Architectural and Engineering design services to multiple facilities located at the Regional Technology Park.

Building 704

ZMM is 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.

Building 740

Steam Plant

When the Campus Steam Physical Plant for West Virginia Regional Technology Park was scheduled for closure in 2012, individual Steam Boiler systems were required for each building. Building 740 was built in 1960 as a research facility for Union Carbide. It is still predominantly a laboratory building, with a 24/7 100% Outside Air HVAC System of approximately 175,000 cfm capacity.

Lobby Renovation

The lobby renovation will enhance the tenant experience with updated aesthetics to provide a welcoming environment upon entrance. The renovation will include a handicap lift to meet ADA requirements. The front space will also be reconfigured to convert a current work room into a conference room.



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WV Regional Technology Park (cont.)

Building 770

The 122,180 SF 4-story laboratory building was constructed in 1959, consists of 44,880 SF of laboratories, 22,800 SF of laboratory office space, 8,200 SF of executive office space, and 46,300 SF of service and utility space. A 2,500 SF laboratory annex with 2-story walk-in fume hoods was constructed in 1995. The building has a steel frame structure with a brick and curtain wall veneer with one fume hood in each lab. A typical laboratory suite consists of labs and offices on a double loaded corridor. There are approximately 100 individual labs.

The building is served by two 500-ton centrifugal chillers and campus steam. The laboratory's exhaust system consists of individual exhaust utility sets per hood. The utility sets are located in the mechanical penthouse. The conditioned air delivery system to the laboratory consists of large 100% outdoor air chilled water, steam AHU's. Only the executive office area is served by a unit with return air. Electrical service is provided by a 2.4 KV line-up of double-ended switchgear, transformed to 480 volts, the chillers are fed directly from the 2.4 KV switchgear, and metered separately.

Aside from minor renovations to enclose the monumental stairway in the lobby, the executive office suite improvements can be limited to ceilings, lighting, finishes, and improved data access. It may be desirable to replace that HVAC system although the existing system is serviceable. Major building improvements are required in the laboratory areas. Through our analysis of the life safety code and conversation with the state fire marshal, a two-hour fire rated wall is required to separate the laboratory from the exit corridor. The duct and pipe chases adjacent to the laboratories must also be reconstructed as two-hour fire rated shafts. Additionally, the labs must be reconfigured so that an occupant of the lab does not exit adjacent to the fume hood. This can be accomplished by either relocating or eliminating some of the fume hoods. To accomplish the required improvements to the labs, the Hauserman partitions including the chases, corridor, office ceiling and lighting as well as all existing ductwork will be demolished. Essentially, the lab wings will need to be reconstructed.



Typical modern laboratories maintain humidity control which means humidification during the heating season. As the building exists, condensation will occur on the interior face of the window and curtain wall system. If humidity control is desired, replacement of the curtain wall is necessary.

As presently configured, the laboratory constant volume exhaust and make-up air systems operate 24 hours a day. Maintaining the systems in their current condition will result in large energy consumption estimated at \$13.25 per building SF annually. The steam and electric are metered at the building. The campus energy losses for each utility are added pro rata to the metered quantities. The annual energy charge based on three-year data is between \$1,300,000 and \$1,600,000. It is very difficult to alter the existing air handling equipment to provide a system equivalent to a modern efficient laboratory system. The most effective way to improve energy efficiency in a large lab facility is to use a variable volume exhaust and make-up air system. The expense of treating the outdoor make-up air is reduced by providing exhaust and make-up air only for in-use fume hoods. To accomplish these improvements, a separate 100% outdoor air variable volume air handling system would be provided for the lab spaces and a separate variable volume system with supply and return air would be provided for the offices.



CHARLESTON COLISEUM & CONVENTION CENTER

LEED
SILVER

LOCATION CHARLESTON, WV	SIZE 283,000 SF	COMPLETION 2018	COST \$100M	AWARDS 2019 AIA WV HONOR AWARD, CITATION & PEOPLE'S CHOICE AWARD
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The Charleston Coliseum & Convention Center expansion and renovation was a transformational project for both the City of Charleston and West Virginia.

Our team built on the strong authentic character of Charleston to remake the Charleston Convention Center into a more efficient, sustainable, dynamic, and iconic best-in-class destination.

The design of the expansion and renovation of the Charleston Convention Center was inspired by the story of West Virginia. Defined by a rugged landscape, the early history of the state was dominated by extractive industries: salt, coal, timber, and trapping. This set the local character. Our design started with an organizational concept inspired by this history. The Convention Center has distinct active nodes to celebrate each activity: arena, convention, and banquet. These nodes are connected like the hills and cut-rock faces that are seen throughout the state, as people work to connect to each other through the landscape. The first critical design objective was to create separate entries and identities for the arena and convention center. This allowed for simultaneous events and clarity of use. For the Convention Center to thrive, it needed a real ballroom assembly space. Located overlooking the Elk River, the ballroom pre-function space is the most dramatic feature of the center.



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HVAC RENOVATION EXPERIENCE

Charleston Coliseum & Convention Center (2015) – Replace entire MEP infrastructure three 1,000 ton chillers and cooling towers, three 8,000 mbh gas condensing boilers, approximately ten VAV AHU's, approximately 10 large single zone VAV AHU's.

Charleston Kanawha Health Department (2015) – Replace entire mechanical system to include air cooled chiller, gas fired make-up unit and zone fan coils with electric reheat, approximately 45,000 SF new DDC controls.

United Bank Building – Cooling Tower Replacement (2010) – Two 400 ton centrifugal chillers, rebuild two large VAV AHU's, installed free cooling plate frame heat exchangers (2015).

Kanawha County Public Library (2015) – Replaced two gas-fired boilers with new gas condensing boilers.

Building 5 Capitol Complex (2008) – Replaced 10th floor office space air condition, replaced perimeter induction units with new steam chilled water air handling units, distributed VAV terminal units with modification to architectural fit out approximately 22,000 Sf. Installed new sprinkler service entrance for Buildings 5, 6, and 7.

Capitol Complex Building 5, 7th, 8th, & 9th Floors – Rebuild perimeter induction system and interior multi-zone distribution in addition to total architectural fit up, approximately 70,000 SF.

Capitol Complex Building 6, 3rd, 4th, & 5th Floors - Rebuild perimeter induction system and interior multi-zone distribution in addition to total architectural fit up, approximately 70,000 SF.

WV Lottery Headquarters Building (2014 - 2015) – Installed 40,000 SF of new variable refrigerant system, new make-up air system, comprehensive architectural services.

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BYRNE-GREEN U.S. COURTHOUSE & FEDERAL BUILDING

LOCATION PHILADELPHIA, PA	SIZE 22 & 10-STORY	COMPLETION EST. 2023	COST \$2M
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(IDIQ) Contract for Roofing, Facade, and Building Envelope Services

The Byrne Green complex consists of two buildings, the 22-story James A. Byrne U.S. Courthouse and the 10-story William J. Green, Jr., Federal Building, which are connected by an enclosed causeway and share a large plaza open to the public. In 2021, WDP conducted an investigation and study to evaluate the condition of the façade and building envelope and provided recommendations and cost estimates for the needed repairs. The project was organized into two phases with the Phase 1 survey including a review of GSA-provided documentation of both the Byrne and Green buildings, followed by an aerial drone survey. In Phase 2, WDP conducted a close-up visual survey of façade areas accessible via the ground and roofs as well as performing a tactile survey of the façade via rope access by WDP's Rope Access Team.

The combination of drone footage and rope access survey allowed us to successfully capture the current condition of the building's exterior elevations. The engineers on the building were able to make detailed observations at key locations, and the drone footage was a useful complement, permitting our engineers to "look around" the remaining areas of the building for reoccurring conditions and to determine if there was anything additional beyond our initial observations.

We continued to analyze these field observations in the context of information gained from document reviews and leakage reports to



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Byrne-Green U.S. Courthouse & Federal Building (cont.)

develop a series of conditions to be addressed and recommendations for repairs. We assigned a priority for each condition according to the RFP guidance and developed a scope of work for each recommendation at a level of detail needed for our cost consultant to develop estimates.

WDP then worked closely with our cost estimating subconsultant to develop detailed cost estimates in accordance with GSA estimating standards and requirements to be broken down by building elevation and with noted prioritization of repairs. Cost estimating services also included updating of previous plaza renovation estimates.





WEST VIRGINIA STATE CAPITOL BUILDING

LOCATION CHARLESTON, WV	SIZE 535,000 SF	COMPLETION 2021	COST \$15M	AWARDS 2020 NCSEA AWARD FOR OUTSTANDING PROJECT
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Awarded 2020 Outstanding Project in the Forensic, Renovation, Retrofit, Rehabilitation Structures under \$20 Million" Category by the National Council of Structural Engineers Associations (NCSEA)

Originally constructed in 1932 to replace the prior building which burned in 1921, the West Virginia State Capitol Building is a steel framed structure with brick masonry infill and limestone cladding capped with a 292-foot tall dome, gilded with gold leafing.

Since the time of its completion, the Dome has been plagued with numerous water infiltration issues, which have resulted in significant damage to interior finishes that are difficult to access. In 2015, the State of West Virginia General Services Division (GSD) issued an RFP seeking professional services to identify and investigate the source of moisture intrusion leading to damage within the upper rotunda of the Dome and to recommend repairs, and WDP was selected after competitive interviews.

Due to the nature of the building, all personnel who worked on the investigation were required to go through a background check and receive badges that allowed access to areas of the Capitol that were not open to the public. WDP conducted a systematic three-week long investigation of the Dome and Capitol building, utilizing visual observations, exploratory



West Virginia State Capitol Building (cont.)

openings, and diagnostic water testing to ascertain the construction of the building envelope and to identify the path of infiltrating water. Due to the location of the damaged interior finishes requiring investigation, unique access was required for the investigation. A swing stage system was installed through the interior of the building and was used to make observations to damaged interior finishes near the top of the Dome.

The main source of the water infiltration was found to be a result of improper flashing installation at roofing elements and deteriorated limestone mortar joints, along with failures in the internal water management systems, that allowed bulk water to penetrate through a mass masonry assembly to the interior. WDP developed a comprehensive report summarizing the findings and provided recommendations to address the issues that were found in a tiered approach for GSD consideration. This allowed the GSD to evaluate, increasingly, more comprehensive repairs and their associated costs to determine the scope of work that would provide the most value to the project. After coordination with the GSD, the State Historic Preservation Office, and the Capitol Building Commission, construction documents were developed that included the removal of limestone cladding elements to install through wall flashing and waterproofing systems, selective repointing of limestone mortar joints, replacement of internal plumbing and drainage elements to include portions of roofing elements, and restoration or replacement of interior ornamental and flat plaster finishes to include matching existing decorative paint. The building would remain fully occupied during the execution of the work, so the design included temporary interior construction barriers and evaluation of egress routes through the building to ensure building occupant safety was held paramount through the construction phase. Once access was provided to the inner dome during the construction phase, WDP identified structural failures that required retensioning of the cast plaster inner dome and replacement of interior walls with grouted and reinforced structural clay tile. This required a unique analysis of the coconut reinforced cast-plaster inner dome to develop repair strategies that structurally supported the inner dome, while following requirements for historic preservation. WDP provided construction administration services throughout the construction phase and was engaged in weekly site visits and progress meetings in order to be responsive to items uncovered on site and work through unique sequencing requirements to execute the repairs.



West Virginia State Capitol Building (cont.)

During the construction phase of the Dome Moisture Intrusion project, existing conditions unrelated to the Dome Moisture Intrusion project were identified within that building that resulted in life-safety hazards to building occupants. Based on our previous work experience and professionalism, the GSD engaged WDP under emergency contracts to investigate, evaluate, and develop repair designs for each of these conditions.

Clay Tile Repair Project: The interior partition walls of the Capitol building are constructed with unreinforced hollow clay tile spanning between floor levels. The original design relies on the friction fit of the clay tile units between the floor levels to secure the walls in place. However, moisture expansion within the clay tile caused failures at the top of the wall resulting in cracked clay tile units that compromised the security of the clay tile walls and created a fall hazard for building occupants. WDP performed a comprehensive visual survey of locations throughout the building constructed with clay tile units, identified spaces where clay tile was found to be compromised, and designed repairs to address each location. These repairs ranged from grouting of clay tile units, installing partition anchors or saddle clips, to designing framing anchored to the surface of the clay tile to provide lateral support for the walls. WDP provided bid assistance and construction administration services for the execution of this work.





EDWARD N. CAHN FEDERAL BUILDING & U.S. COURTHOUSE

LOCATION ALLENTOWN, PA	SIZE 18,575 SF	COMPLETION 2021	COST \$1.4M
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(IDIQ) Contract for Roofing, Façade, and Building Envelope Engineering and Design Services

WDP performed a pre-design existing conditions survey to document the main and two small entrance roofs for replacement. During the survey, test cuts were made in the existing roofing system to confirm existing materials and slopes, and hazardous material testing was performed to check for asbestos, lead, and PCBs. Findings from the investigation were presented to the GSA to help the Owner evaluate options for the repair scope of work. The new design includes replacing the exiting ballasted EPDM roof membrane with a mechanically fastened cover sheet over the existing lightweight insulated concrete roof deck, fully adhered cover board, and fully adhered EPDM membrane.

In addition to the roof replacement, the design includes replacing two roof drains, correcting issues with flashing, mortar and sealants at parapets, repair of control joints in brick masonry, addressing existing ponding, updating lightning protection equipment, and installing a new fall protection system. The new roof system was designed to obtain a 20-year warranty at the completion of construction.

WDP provided construction administration services during the construction phase of the project.



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Consulting Engineers



UNIVERSITY OF VIRGINIA, JUDGE ADVOCATE GENERAL SCHOOL

LOCATION CHARLOTTESVILLE, VA	SIZE 4 FLOORS	COMPLETION 2011	COST \$1.6M	AWARDS 2012 ICRI OUTSTANDING REPAIR PROJECT
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This project was awarded the 2012 ICRI Outstanding Repair Project Award for façade restoration and structural improvements.

The Judge Advocate General (JAG) School is a concrete framed structure with brick infill constructed in the early 1970s. The University owns the facility and leases it to the Army's Judge Advocate General School. The third and fourth floors of the building serve as temporary living quarters for students attending classes at the school.

WDP was contacted after a major interior renovation of the facility's fourth floor revealed significant deterioration of the light gage framing, exterior wall assemblies, and structural steel framing system. An evaluation of the condition of the exterior wall systems, structural steel framing, and concrete structure was performed. The evaluation involved reviewing the condition of the exterior metal stud walls, exterior sheathing, exterior veneer, exterior veneer structural attachments, structural steel framing, and the concrete structure as it related to the exterior walls. Test cuts were made in the exterior veneer and the interior drywall to evaluate the wall system components.



UVA, Judge Advocate General School (cont.)

WDP's findings and recommendations for repair were presented to the University. The University made the decision to execute a major renovation program to replace portions of the exterior wall systems and rehabilitate the structural steel and concrete framing system. WDP performed structural analysis on the exterior light gage framing system, structural steel framing, and concrete structure of the building. Full contract documents were created, and construction administration and monitoring services were provided for the project. The overall scope of repairs included removal and replacement of the brick veneer, exterior light gage framing, exterior sheathing, sliding glass doors, flashing, and weather barrier systems. Repairs to the structural steel framing, steel guards, and concrete structure were also included as part of the project.

The JAG School renovation was an emergency procurement project for the University and presented many unique design and construction obstacles. Major interior renovations were ongoing during the discovery of deterioration of the exterior wall systems, which could not be stopped or delayed. WDP assisted the University in developing a plan to allow the interior renovations to continue while the design for repairs to the exterior walls was developed. In order to meet the needs of the University, the design documents had to be completed on a compressed schedule to turn the facility back over to JAG School personnel.

Additionally, portions of the building remained occupied while the renovations were completed, so WDP helped create a phasing plan to minimize disturbances to the occupants. The service life of the building was significantly extended by at least 30 years, allowing UVA to successfully negotiate a new 30-year lease of the facility with the US Department of the Army.



PUBLIC SERVICE COMMISSION OF WEST VIRGINIA

LOCATION	SIZE	COMPLETION	COST
CHARLESTON, WV	20,000 SF	2017	\$4.2M

Originally constructed in 1984, the headquarters for the Public Service Commission of West Virginia is a steel-framed structure supported by spread footings that provides office space for various public divisions such as Utilities and Administration. In 2015 the Public Service Commission issued a request for proposals for a Design-Build renovation of the building's façade, indicating the possibility of replacing the structure's brick exterior.

The Design-Build team proposed replacing brick with brick due to the longevity of brick, its aesthetic compatibility with neighboring buildings, and overall value of using brick. Additionally, the thermal performance of the wall assembly could be improved with the addition of exterior cavity insulation and continuous air and water barrier. Furthermore, the new design called for the addition of improved glazing and eye-catching metal work logos of the Public Service Commission for the exterior. Demolition and construction process began in March of 2016 with the requirement of maintaining building occupancy throughout the entirety of the project.

WDP conducted an initial field investigation prior to developing the design documents for the project. The field investigation provided the opportunity to uncover some of the existing conditions so the design details could be developed based on actual construction. The design involved a complete removal of the building's exterior, providing temporary enclosures to protect interior finishes and building occupants, and replacement with



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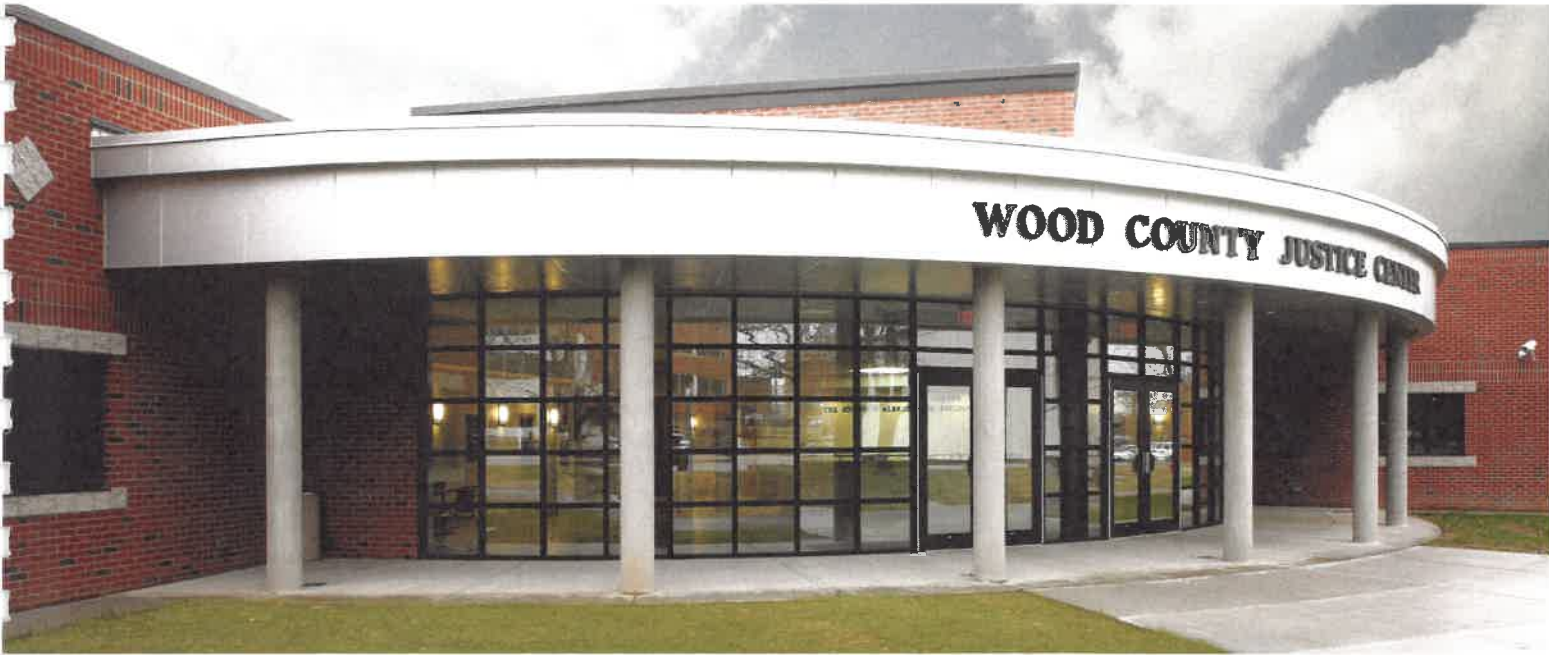
WDP
& Associates
Consulting Engineers

Public Service Commission of West Virginia (cont.)

new brick, air barrier and thermal insulation on a phased demolition and construction plan to ensure minimal disruption to the building occupants. WDP designed a new structural framing system that was integrated into an existing structural element to provide the framework for a new monumental limestone arch feature at the front of the building.

During demolition, unforeseen conditions were identified that included unreinforced and unsupported CMU-masonry backup walls and existing walls that were not in alignment. WDP developed specific details to strengthen the existing walls and accommodate the unique existing conditions.





4

TEAM QUALIFICATIONS

ORGANIZATIONAL CHART



West Virginia General Services



Robert Doeffinger, P.E.
Principal-in-Charge



Adam Krason, AIA, LEED AP
PROJECT MANAGER



MEP Team

John Pruett, P.E., LEED AP
Senior Mechanical Engineer

James Lowry, P.E., BCxA
Mechanical Engineer

Frankie Kantsios, P.E.
Electrical Engineer

Mike Flowers
Mechanical/Electrical Design Technician

Civil Engineering Services

Ben McMillan, P.E., LEED AP
Civil Engineer



Rex Cyphers, P.E.
Principal Engineer

Building Envelope Team

Jodi Knorowski, P.E.
Project Manager

Andrew Wagner, P.E.
QA/QC

Kate Franczek
Staff Engineer

Tyler Williams
Staff Engineer

Structural Team

John Grill, P.E.
Project Manager

B.J. Lee, Ph.D., P.E.
QA/QC

Patrick Dillon, Ph.D., P.E.
Sr. Engineer

Teagan Allen, P.E.
Project Engineer





EDUCATION

Master of Science
The Pennsylvania State University, 1976

Bachelor of Science
West Virginia University, 1973

LICENSURE

WV, VA, PA, OH, TN, KY, NY, NH, ME,
NC, SC, FL, NJ, GA

AFFILIATIONS

ASHRAE - Member of the Technical Committee Load Calculations Data and Procedures for 25 years, serving as chairman. Presently Chairman of the Research Subcommittee

2021 Industrial and Professional Advisory Council - College of Engineering at The Pennsylvania State University

2019 Marshall University Honorary Alumni Award of Distinction College of Engineering

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

Robert Doeffinger

PE

Principal

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.

PROJECT EXPERIENCE

Charleston Coliseum & Convention Center - Charleston, WV

State Office Buildings #5, 10th Floor - Charleston, WV

WV Capitol Complex Buildings #5, #6, and #7 - Charleston, WV

Marshall University (Multiple Projects) - Huntington, WV

West Virginia Regional Technology Park - S. Charleston, WV

- Building 704

- Building 740

- Building 770

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

West Virginia Regional Jails

West Virginia Army National Guard Projects

BridgeValley Community and Technical College - Montgomery, WV

Appalachian Regional Hospital (Multiple Projects) - Beckley, WV

The Plaza at the King of Prussia - Philadelphia, PA



REX CYPHERS

P.E.

Principal

Mr. Rex Cyphers, P.E., is a Principal and Chief Operating Officer with WDP & Associates Consulting Engineers working primarily out of the Hinton, West Virginia, and Charlottesville, Virginia, offices. He is responsible for overseeing the work of all WDP divisions, WDP's hiring process, staff development, and company operational decisions. Mr. Cyphers specializes in the design and repair of masonry structures, historic preservation, and nondestructive testing. He performs forensic field and laboratory investigations, façade and building envelope investigations, structural inspection/ analysis and design, architectural retrofit and repair, roofing and waterproofing investigations, and development of design documents and repair recommendations. Mr. Cyphers regularly presents and co-authors for various technical publications.

EDUCATION

Master of Science, Civil Engineering
West Virginia University, 2003

Bachelor of Science in Engineering, Civil
Engineering, West Virginia University, 2002

LICENSURE

Professional Engineer - WV (#019214), VA,
DC., PA, & TN

AFFILIATIONS

ASTM Committee E06 Performance of
Buildings – Subcommittees:
- E06.24 Preservation and Rehabilitation
Technology

- Task Chair, ASTM E3069 –19 "Standard Guide for Evaluation and Rehabilitation of Mass Masonry Walls for Changes to Thermal and Moisture Properties of the Wall"
- Task Chair, WK 70955, "Standard Guide for Evaluation of Changes to the Thermal, Moisture, and Ventilation Performance of Existing Roof Enclosures (with Vented or Sealed Attic or Rafter Spaces)"

PROJECT EXPERIENCE

State of West Virginia GSD, Building 37 Window, HVAC, Roof, and Envelope Upgrades, Condition Assessment - Charleston, WV

State of West Virginia GSD, Building 36 Façade Investigation and Design - Charleston, WV

Public Service Commission of West Virginia Headquarters, Building Envelope Assessment, Façade Investigation and Design - Charleston, WV

West Virginia University Art Museum, Building Envelope Investigation, Condensation and Roof Repair - Morgantown WV

Virginia DGS, State Capitol Building Repairs - Richmond, VA

General Services Administration (GSA), Byrne-Green Federal Complex, Façade Study - Philadelphia, PA

General Services Administration (GSA), Erie Federal Courthouse Complex - Erie, PA

The College of William & Mary, Wren Building - Williamsburg, VA

The Pierre Hotel, Façade Investigation and Repairs - New York, NY

The University of Virginia, Judge Advocate General (JAG) School, Structural and Facade Repair & Replacement - Charlottesville, VA



ADAM KRASON

AIA, LEED AP, ALEP

Project Manager

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 also serves as President/CEO and serves on the Board of Directors and 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 Center - Institute, WV

The Clay Center for the Arts and Science (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



JODI KNOROWSKI

P.E.

Project Manager (Building Envelope)

Ms. Knorowski joined WDP in 2013 and has over 11 years of experience providing professional design, building condition assessments, and construction administration services for post-occupancy failures of existing buildings related to the building envelope. She routinely performs diagnostic field investigations to determine the root cause of these failures in order to develop repair recommendations and to oversee the development of design documents.

In this process, she has utilized a variety of thermal and hygrothermal modeling techniques to analyze the long-term effects of heat and moisture movement through a wall or roof assembly. Jodi has also provided clients with construction monitoring services for new construction and performed quality assurance testing and observations of the structural, material, and architectural elements of the building envelope.

EDUCATION

Master of Science, Civil Engineering
Old Dominion University, 2012

Bachelor of Science, Civil Engineering,
Old Dominion University, 2010

LICENSURE

Professional Engineer – VA

Certifications: WUFI-ORNL 5.3 / WUFI-Pro 5.3
& Weather Analyzer 1.0
NFRC Certified Simulator

AFFILIATIONS

ASTM C16 Committee, Voting Member

ASTM E06 Committee, Active Participant

ASHRAE TC 4.4, Provisional Corresponding
Member

ASHRAE SSPC 160 Criteria for Moisture-
Control Design Analysis in Buildings
("standing standard project committee")

PROJECT EXPERIENCE

State of West Virginia GSD, Building 37 Window, HVAC, Roof, and Envelope Upgrades, Condition Assessment - Charleston, WV

State of West Virginia GSD, Building 36 Façade Investigation and Design - Charleston, WV

Public Service Commission of West Virginia Headquarters, Facade Investigation & Design - Charleston, WV

State of West Virginia GSD, State Capitol Dome, Moisture Intrusion Investigation & Design - Charleston, WV

West Virginia University Art Museum, Building Envelope Investigation, Condensation and Roof Replacement - Morgantown, WV

General Services Administration (GSA), Edward N. Cahn U.S. Courthouse & Federal Building, Roof Replacement Investigation & Design - Richmond, VA

Virginia Commonwealth University, School of Nursing, Window Leakage Investigation and Recommendation - Richmond, VA

The University of Virginia John Paul Jones Arena, Building Envelope Moisture Intrusion Evaluation and Design - Charlottesville, VA

University of Virginia, Bryan Hall, Window Leakage Investigation and Design - Charlottesville, VA



ANDREW WAGNER

P.E.

QA/QC Manager (Building Envelope)

Mr. Andrew Wagner joined WDP in 2007 and has worked in our Charlottesville office since 2009. He is the Charlottesville Division Manager for the office's staff and projects. He provides architectural, structural, and material engineering services and specializes in the evaluation and repair of building enclosures and facades, where he has experience helping clients diagnose, remedy, and prevent problems. His experience conducting water and air infiltration investigations and designing façade repairs and replacements is a key asset to his peer review, Building Enclosure Commissioning, and field performance testing for new construction projects. In addition to his work with WV GSD, Andrew has completed projects in multiple industry sectors including federal, state, and local government, as well as higher ed, healthcare, and K-12, and historic preservation. He is active in the development of new industry standards through ASTM and is also a member of the Air Barrier Association of America (ABAA) Research Committee, past Vice President of the Central Virginia Chapter of CSI, has written numerous papers relating to the building envelope and routinely speaks at industry organizations

EDUCATION

Bachelor of Science, Civil Engineering,
Virginia Tech, 2007

LICENSURE

Professional Engineer – VA

AFFILIATIONS

ABAA Research Committee
ASTM

- Task Chair ASTM E241, "Standard Guide for Limiting Water-Induced Damage to Buildings"
- E06.41, "Air Leakage and Ventilation Performance"
- Voting Member
- E06.51, "Performance of Windows, Doors, Skylights and Curtain Walls"
- E06.55, "Performance of Building Enclosures"

PROJECT EXPERIENCE

State of West Virginia GSD, Building 36 Façade Investigation and Design - Charleston, WV

State of West Virginia GSD, West Virginia State Capitol Dome, Moisture Intrusion Investigation & Design - Charleston, WV

West Virginia University Art Museum, Building Envelope Investigation, Condensation and Roof Repair - Morgantown, WV

Public Service Commission of West Virginia Headquarters, Façade Investigation & Design - Charleston, WV

West Virginia University, Hodges Hall, Building Enclosure Evaluation-
Morgantown WV

General Services Administration, Edward N. Cahn U.S. Courthouse & Federal Building, Roof Replacement Investigation & Design -
Richmond, VA

Virginia Commonwealth University, School of Nursing, Window Leakage Investigation and Recommendation - Richmond, VA

University of Virginia, Bryan Hall, Window Leakage Investigation and Design - Charlottesville, VA

The University of Virginia John Paul Jones Arena, Building Envelope Moisture Intrusion Evaluation and Design - Charlottesville, VA



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 - So. Charleston, WV

Wood County Resiliency Center - Parkersburg, WV

WV State Capitol Renovations - Charleston, WV

General Services Division Surplus Property - Dunbar, WV

WV Housing Developemnt 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 - WV

- Camp Dawson Building 106
- 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

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.

EDUCATION

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

LICENSURE

West Virginia, Pennsylvania, Ohio & 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



PATRICK DILLON

PH.D., P.E.

Sr. Engineer (Structural)

With over 13 years of combined research and field work experience, Patrick conducts evaluations and assessments of structural and building envelope systems for WDP. He regularly performs diagnostic field investigations to determine the root cause of post-occupancy failures of existing buildings and develops repair recommendations to solve the problems. Patrick is also involved with a variety of other architectural and structural engineering disciplines, including development of specifications and drawings, peer review of design documents, and construction management and administration. Patrick has also authored or co-authored four articles at industry conferences in the last 6 years.

EDUCATION

Ph.D., Civil Engineering,
Brigham Young University, 2015

Bachelor of Science, Civil Engineering,
Brigham Young University, 2010

LICENSURE

Professional Engineer – WV (#026207), VA, NJ

AFFILIATIONS

Member, American Institute of Steel
Construction (AISC)

Member, The Masonry Society (TMS)
• TMS 402/602 Building Code
requirements and Specifications for
Masonry Structures
• Existing Masonry Committee

Member, American Concrete Institute (ACI)
• ACI/TMS 122 Guide to Thermal
Properties of Concrete and Masonry
Systems

PROJECT EXPERIENCE

State of West Virginia GSD, Diamond Building Emergency Protection and Stabilization - Charleston, WV

State of West Virginia GSD, West Virginia Capitol North Stair Repair Design - Charleston, WV

State of West Virginia GSD, WV Capitol Clay Tile Repair Design - Charleston, WV

State of West Virginia GSD, Supreme Court Chambers Ceiling Evaluation & Repair Design - Charleston, WV

State of West Virginia GSD, Diamond Building EPO – Emergency Structural Design Stabilization - Charleston, WV

Public Service Commission of West Virginia Headquarters, Facade Investigation & Design - Charleston, WV

General Services Administration, Edward A. Garmatz U.S. Building Courthouse Window Study - Baltimore, MD

Fox Hollow Farm, Bank Barn Rehabilitation Project - Greenwood, VA

Metropolitan Knoxville Airport Authority, Knoxville Terminal Modernization - Aloc, TN

Virginia DGS, State Capitol Building Repairs - Phase I, Roof Structural Repairs - Richmond, VA



JOHN GRILL

P.E.

Project Manager (Structural)

Mr. John Grill, P.E., is an Associate Engineer with WDP & Associates Consulting Engineers, Inc., where he specializes in nondestructive testing and repair and rehabilitation of reinforced concrete structures. John joined the firm in 1998 and has since participated in and conducted a wide variety of forensic field and laboratory investigations, structural condition assessments, façade and building envelope investigations, development of design documents, and repair recommendations. He has performed investigations on numerous projects utilizing surface penetrating radar, impact-echo testing, and corrosion evaluation techniques.

EDUCATION

Bachelor of Science, Civil and Environmental Engineering, University of Pittsburgh, 1997

LICENSURE

Professional Engineer - VA, DC, MD

AFFILIATIONS

Chairman of WDP Safety Committee

American Concrete Institute (ACI)

International Concrete Repair Institute (ICRI)
• Member of Committee 210 – Evaluation

PROJECT EXPERIENCE

State of West Virginia GSD, Capitol Stairs Investigation - Charleston, WV

State of West Virginia GSD, Piedmont Parking Garage - Building 13, Assessment & Rehabilitation - Charleston, WV

State of West Virginia GSD, Building 31 Assessment - Charleston, WV

General Services Administration (GSA), Weis U.S. Federal Courthouse, Weis Investigation & Loading Dock Design - Pittsburgh, PA

General Services Administration (GSA), Byrne-Green Truckyard Concrete and Waterproofing Repair - Philadelphia, PA

Architect of the Capitol (AOC), Power Plant Utility Tunnels Assessment & Repair Design - Washington, D.C.

Architect of the Capitol (AOC), West Refrigeration Plant Structural Evaluation - Washington, D.C.

The College of William & Mary Term Contract for A/E Services, One Tribe Place Condition Assessment - Williamsburg, VA

Prince William County Public Schools, Concrete Warehouse Facade Evaluation - Manassas, VA



BYOUNG-JUN LEE

Ph.D., P.E., S.E.

QA/QC Manager (Structural)

Mr. Lee joined WDP in 2006 and has 21 years of professional experience. He specializes in architectural engineering and structural engineering services including failure investigations, analysis, and repair design. He has expertise in structural analysis as repair evaluation of existing structures, and nondestructive testing of concrete structures. He is involved in forensic field and laboratory investigations, condition assessments, façade and building envelope investigations, development of design documents, and repair recommendations in reinforced concrete, steel, composite, masonry, wood, and cold form steel constructions. He has also written more than 15 technical papers in technical journals and proceedings.

EDUCATION

PhD, Civil and Environmental Engineering,
Lehigh University, 2003

Master of Science, Architectural Engineering,
Kangwon National University, Korea, 1996

Bachelor of Science, Architectural
Engineering, Kangwon National University,
Korea, 1994

LICENSURE

Professional Engineer – WV (#022499), VA,
DC, MD,

Structural Engineer – HI

AFFILIATIONS

Member, American Concrete Institute (ACI)
• ACI 216: Fire Resistance and Fire
Protection of Structures – Joint ACI-TMS
• ACI 546: Guide to Concrete Repair

Member, American Institute of Steel
Construction (AISC)

Member, Post Tensioning Institute (PTI)

PROJECT EXPERIENCE

State of West Virginia GSD, Building 36 EIFS and Granite Assessment -
Charleston, WV

State of West Virginia GSD, Piedmont Parking Garage - Building 13,
Assessment & Rehabilitation - Charleston, WV

Senate of West Virginia, WV State Capitol Roof Walkway Structural
Analysis - Charleston, WV

West Virginia University, South Agricultural Sciences Building, Steel
Repair Design - Morgantown, WV

West Virginia University, Mountainlair Plaza, Condition Assessment
& Structural Analysis - Morgantown, WV

West Virginia University, Health Sciences Building, Building Envelope
Replacement Study & Design - Charleston, WV

General Services Administration (GSA), Edward N. Cahn US
Courthouse and Federal Building, Roof Condition Assessment &
Repair Design - Allentown, PA

General Services Administration (GSA), Erie Federal Courthouse
Complex, Skylight Investigation & Repair Design - Erie, PA

General Services Administration (GSA), Weis U.S. Federal Courthouse,
Investigation & Loading Dock Design - Pittsburgh, PA



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 staying versatile to 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; providing him with the means to meet the clients' needs for each individual program. 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. Whether working independently or in conjunction with other architects, engineers, and contractors, 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

West Virginia
Virginia

PROJECT EXPERIENCE

Carilion New River Valley Medical Center - VA
- Cardiology Expansion
- Infusion Clinic Alterations

HCA Healthcare - VA
- LewisGale Hospital Montgomery - 3rd Floor Graduate Medical Education Center

InnovAge PACE - VA
- New Richmond Facility
- New Roanoke Facility
- Roanoke Facility Study

Bath Community Hospital - VA
- New Pharmacy Building*

New Triumph Baptist Church - VA

Frederick County Sunny Side Voter Registrar's Office- VA
- A.S. Rhodes Elementary School Renovations

New River Community College - VA
- ADA Accessibility Improvements

City of Covington City Hall Renovations - VA*

Pulaski County Administration Building Renovation - VA*

**Previous Employer Experience*



EDUCATION

Bachelor of Science, Civil Engineering
Virginia Polytechnic Institute and
State University, 2007

LICENSURE

West Virginia, Virginia, Kentucky, Ohio

AFFILIATIONS

Registered Professional Engineer

BENJAMIN S. MCMILLAN

PE, LEED AP

Civil Engineer

Mr. McMillan has 15 years' experience and knowledge in land development throughout Virginia. Mr. McMillan has experience in creating site plans and producing reports and specifications for institutional, commercial, residential, utility-scale solar, and one utility-scale wind project. Site plan preparations included layout, utility plans, grading, drainage, stormwater management, and erosion and sediment control.

Mr. McMillan also attends meetings, interacts with clients and contractors, performs various construction administration duties, and visits projects throughout the design and construction phases. Additional related experience is listed below: includes:

- Experienced in land development for institutional, multi-family residential, commercial, industrial, and utility-scale solar projects.
- Knowledgeable of all phases of land development from schematic design through project close-out.
- Complied with and obtained approval from many different municipal and state agencies in multiple states.
- Proficient in AutoCAD Civil 3D and familiar with other engineering design programs such as Autodesk Storm & Sanitary Analysis, HydraFLOW, HydroCAD, Flowmaster, and PondPack.
- Coordinated site designs with other design disciplines including Architects, Landscape Architects, Mechanical Engineers, Electrical Engineers, Structural Engineers, and Geotechnical Engineers.

PROJECT EXPERIENCE

Wood County Resiliency Center - Parkersburg, WV

Wood County 911 Center - Parkersburg, WV

WVDNR Tomblin WMA New Visitor Center and Bunkhouse - Logan, WV

West Virginia Regional Technology Building 2000 Parking Loop - Charleston, WV

WV Department of Agriculture Lab Building - Charleston, WV

New River Health - Oak Hill, WV

Salvation Army - Beckley, WV



MIKE FLOWERS

Plumbing Designer / Mechanical Technician

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; 1990, Ben Franklin Career and Technical Center

Associate in Electronics Technology; 1987, 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

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 Industries - Parkersburg, WV



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CLIENT REFERENCES

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David Olivero, Facility Manager
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WV State Capitol Dome Investigation/Design
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Gabrielle Trout, P.E. - Sr. Project Manager
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Courthouse
Mid-Atlantic Region
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Thank You

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