



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

State of West Virginia
 Centralized Expression of Interest
 02 - Architect/Engr

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ZMM, INC.

Proc Folder: 246344

Doc Description: EOI: Bldg 22 Server and Check Scanner Rooms HVAC Renovations

Proc Type: Central Contract - Fixed Amt

Date issued	Solicitation Closes	Solicitation No	Version
2016-11-22	2016-12-20 13:30:00	CEOI 0211 GSD1700000002	1

BID RECEIVING LOCATION

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

VENDOR

Vendor Name, Address and Telephone Number:

12/20/16 09:54:38
 WV Purchasing Division

FOR INFORMATION CONTACT THE BUYER

Jessica S Chambers
 (304) 558-0246
 jessica.s.chambers@wv.gov

Signature X

FEIN #

55-0676608

DATE

12.19.16

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.

ARK, Principal
 (Name, Title)
Adam R. Krason, Principal
 (Printed Name and Title)
222 Lee Street, W Charleston, WV 25302
 (Address)
(304) 342-0159, (304) 345-8144
 (Phone Number) / (Fax Number)
ark@zmm.com
 (email address)

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contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise stated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

Zmm, Inc.
 (Company)
ARK, Principal
 (Authorized Signature) (Representative Name, Title)
Adam R. Krason, Principal
 (Printed Name and Title of Authorized Representative)
12.19.16
 (Date)
(304) 342-0159, (304) 345-8144
 (Phone Number) (Fax Number)

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

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

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

DEFINITIONS:

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

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

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

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (W. Va. Code §61-5-3) that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: ZMM, Inc.

Authorized Signature: [Signature] Date: 12-19-16

State of West Virginia

County of Kanawha, to-wit:

Taken, subscribed, and sworn to before me this 19th day of December, 2016

My Commission expires April 16th, 2023

AFFIX SEAL HERE



NOTARY PUBLIC

[Signature]

Purchasing Affidavit (Revised 08/01/2015)



December 19, 2016

Ms. Jessica S. Chambers, Senior Buyer
Department of Administration, Purchasing Division
2019 Washington Street, East
P.O. Box 50130
Charleston, West Virginia 25305-0130

Subject: Expression of Interest – Building 22 Server and Check Scanner Rooms HVAC Renovations (GSD1700000002)

Dear Ms. Chambers:

ZMM Architects and Engineers is pleased to submit the attached information to demonstrate our experience and our qualifications to provide professional assessment, design and construction phase services for the Building 22 HVAC Renovation project. Established in 1959, ZMM is a Charleston based, full service A/E firm, and is noted for design excellence and client focus. Our integrated design approach makes ZMM unique among design firms in West Virginia, and will prove beneficial to the General Services Division as HVAC Renovation projects often require the involvement of a variety of design disciplines including architects, structural engineers, and electrical engineers – in addition to mechanical engineers. Please note the following qualifications of our team:

- **Experience.** ZMM was founded more than fifty-five years ago as a full service design firm. One of the specialties that the firm provides is the design of new and renovated HVAC systems. ZMM Principal Bob Doeffinger is a mechanical engineer with experience working on some of the most challenging HVAC renovation projects in the Kanawha Valley. ZMM's recent HVAC renovation experience includes the renovation of the Charleston Civic Center, Davis Hall in Montgomery, Christ Church United Methodist Education Wing Renovation, 405 Capitol Street (the old Daniel Boone Hotel), the Tiskelwah Center (for Kanawha Valley Senior Services), the United Center (Chiller Replacement), the Kanawha Charleston Health Department, as well as multiple projects at the West Virginia Regional Technology Park and the State Capitol Complex.
- **Quality.** ZMM has a history of providing high quality design services on Kanawha Valley renovation projects. Recent award winning renovation experience includes the Christ Church Education Wing Renovation, Renovation of the 10th Floor of State Office Building #5 for the Office of Technology, the CFMO Expansion for the West Virginia Army National Guard, as well as new Girl Scout of Black Diamond Council Volunteer Resource Center. All four projects were honored with statewide design awards by the American Institute of Architects West Virginia Chapter – *in fact, ZMM has been recognized with fifteen design awards by AIA-WV in the past decade, an achievement unrivaled in West Virginia.* Additionally, ZMM's renovation design experience and unique renovation project approach (detailed in Section 1 of this EOI) has led us to be entrusted with designing improvements to some of West Virginia's most prominent buildings including the Charleston Civic Center, the Culture Center, the Clay Center, the State Capitol, and the Greenbrier.

- **Teamwork.** Teamwork is the key to a successful project and ZMM is committed to the success of the Building 22 HVAC Renovation project. We look forward to the opportunity to build upon the relationship we have established by working together on improvement to State Office Buildings 5, 6, & 7, as well as our recent work on the Capitol Roof and at Surplus Property. Our goal is to become an extension of your team as we assist in implementing the improvements to the HVAC system at Building 22.

Thank you for taking the time to review the attached expression of interest that has been formatted to address the specific needs of your project. Additionally, please visit our website at www.zmm.com to see the full range of projects that we have designed, and to learn about working with ZMM from a client's perspective. We appreciate your consideration for this important assignment.

Respectfully submitted,
ZMM, Inc.

A handwritten signature in black ink, appearing to read 'AG RK', with a horizontal line extending to the right.

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

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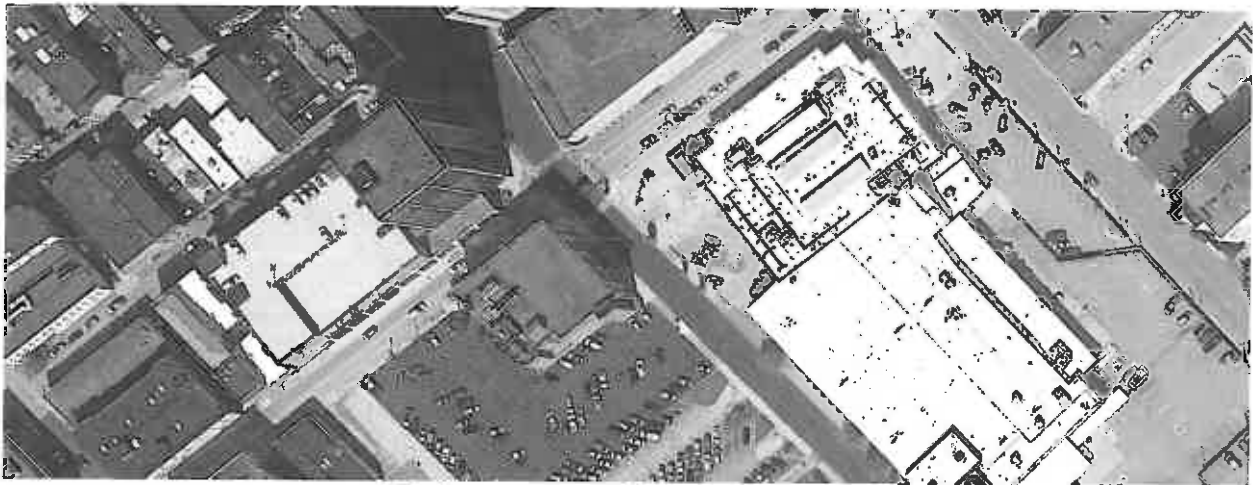
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Project Approach and Methodology – Building 22 HVAC Renovations

Location and Building Description

The State of West Virginia Tax and Revenue Center is located at 1001 Lee Street in downtown Charleston. The building, constructed in 1917, was originally a Coyle and Richardson Department store, and is a contributing structure to the Downtown Charleston Historic District. On the National Register of Historic Places Registration Application the building is described as a “four-story, smooth limestone commercial building was designed by architect H. Rus Warne in the Neo-Classical Revival style. The facade is divided by Corinthian pilasters. The building has replacement windows and a recessed entrance with a metal awning. The building is crowned with a cornice with dentil molding and decorative acanthus leaves.”



Aerial View of 1001 Lee Street – West Virginia Tax and Revenue Center



Project Goals and Objectives

The Expression of Interest document notes that “Over the last few years, the Department of Revenue has added automated equipment to their server room, work space and work processes with little consideration to HVAC requirements or work processes, compromising the efficiency and interior comfort of the building.” Specifically, it is our understanding that many of the challenges noted above occur on the third level of Building 22, where check scanning and printing operations are located along the windows on the North facing wall. The workstations are located to the interior of the space, creating

uncomfortable working conditions. The goal of the project is to investigate the building with the intent of evaluating the mechanical systems, and developing a design solution that improves both the work process as well as occupant comfort.

Approach and Methodology for Meeting the Goals and Objectives

To meet the expressed goals and objectives for the project, the Expression of Interest includes a two-phase approach that ZMM utilizes on projects where the scope of the improvements has not been fully identified. Specifically, the Expression of Interest identified the following approach:



“Phase 1: Assess the equipment loads, work processes and HVAC requirements in the areas designated for server and check scanner rooms in Building 22.

Phase 1: Provide a report of the assessment to the Agency; report shall include condition status, recommended remediation, and estimated costs for remediation.

Phase 2: Provide bidding documents and construction administration services for the owner-agreed items for remediation.”

As addressed in the EOI, in the case where the scope of an HVAC improvement project has not been fully developed ZMM recommends commencing the project with a thorough examination of the existing facility with a team of architects and engineers in conjunction with Tax and Revenue and General Services Division personnel. ZMM will provide a comprehensive HVAC survey to determine the condition of each building component and provide a report of findings and recommendation for replacement, reconfiguration or rebuilding of all equipment and an estimate of probable cost. The purpose of the full facility investigation is to determine the condition of all major building systems that may impact the HVAC improvements, and to develop an accurate project scope and budget. Ultimately, a thorough building survey will provide the proper course of action.

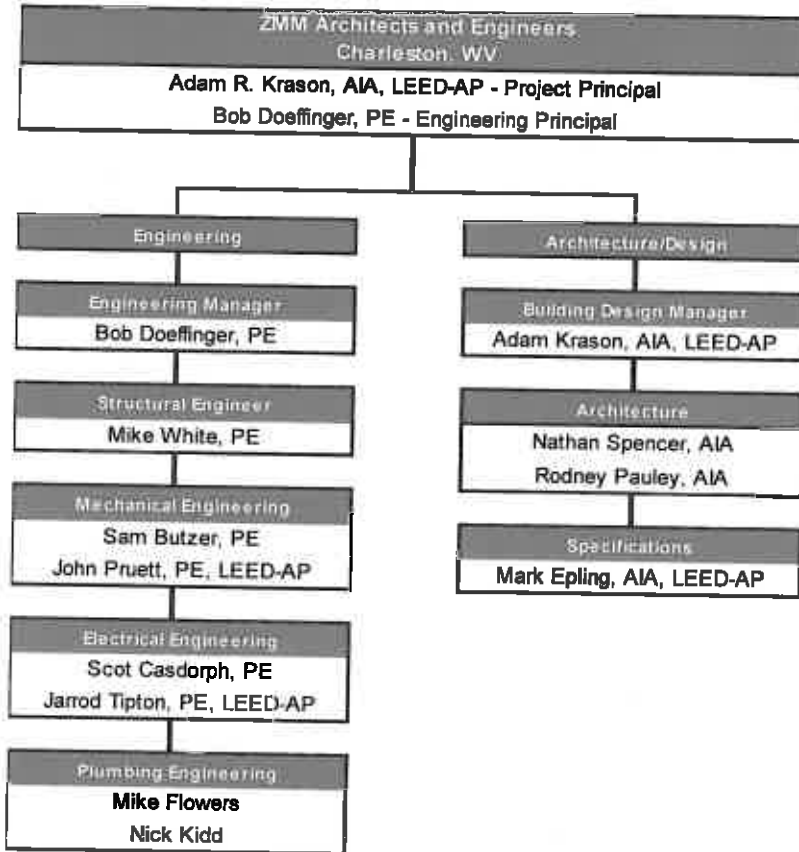
ZMM will commence the investigation by developing as-built plans of the existing facility (if they do not exist). These plans will be created by manually verifying the existing construction and utilizing any existing plans that are available. All major mechanical and electrical equipment will be identified on the plans. At the completion of the examination all required improvements will be identified, and any scope/budget issues will be resolved. All recommended improvements will also be reviewed with the State Fire Marshal as upgrades to existing facilities often require simultaneous life safety improvements. The result of the first phase of the project will be a document (report) that validates the scope and budget, and serves as a guide for future design decisions. Once the scope and budget have been confirmed ZMM will commence the second phase, which will include the development of drawings, specifications, and bidding documents for the proposed improvements, and also provide construction phase services.

ZMM Architects and Engineers Team

ZMM Architects and Engineers will provide all design services in-house. The proposed team for the Building 22 project will include two principals of the firm – Adam Krason, AIA and Bob Doeffinger, PE. Mr.

Krason will serve as the project principal and will coordinate ZMM's overall effort, while Mr. Doeffinger will coordinate the engineering team. Our proposed organizational chart is below:

ZMM Team Organizational Chart



ZMM Architects and Engineers Proposed Schedule

Development of the full schedule for the project will not be possible until the full scope of the improvements is developed during the first (assessment and report) phase of the project. The chart below outlines potential steps to complete the assessment and design portions of the project. While the schedule indicates a mid-April completion, both the process and the schedule can be modified to meet the unique requirements of the project.

Building 22 HVAC Renovations

Assessment/Design Completion Schedule

Task Description		2016 2017				
		Dec	Jan	Feb	Mar	Apr
Construction Phase						
A	Submit Proposal	█				
B	Interview/Selection	█	█			
C	Commence Project - Kick-Off Meeting		█			
D	Develop As-Built Plans		█	█		
E	Complete Building 22 Assessment		█	█		
F	Develop HVAC Recommendations			█	█	
G	Submit/Review Report with General Services Division and Tax and Revenue			█	█	
H	Modify Report and Finalize Project Scope				█	
I	Develop Bidding Documents for Proposed Improvements				█	█
J	Coordinate Bidding Documents/Front-End with Purchasing				█	█
K	Final Completion					█



History of ZMM

LOCATION:
222 Lee Street, West
Charleston, WV

CONTACT:
Phone 304.342.0159
Fax 304.345.8144
www.zmm.com



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 from our office in Charleston. Our integrated design approach makes ZMM unique among architectural firms in West Virginia, and helps to ensure the quality of our design solutions by providing more thoroughly coordinated construction documents.

Over the last decade, ZMM has become a leader in sustainable or 'green' design in West Virginia. In addition to participating in sustainable design and construction seminars throughout the State (Beckley, Fayette County, Morgantown, Charleston, and Parkersburg), ZMM designed one of the first sustainable educational facilities in West Virginia (Lincoln County High School). ZMM's unique design approach has proven invaluable on projects that employ sustainable design principles, which often require a more integrated approach to building design.

As ZMM enters our second half-century providing professional design services in West Virginia, we remain committed to the ideal of providing high quality, client focused, design solutions that meet budget and schedule requirements. This commitment to quality has been recognized through both State and National design awards, as well as through the long-term client relationships that we have developed.



ZMM has been dedicated to the integrated approach to building design which is unique to architectural firms of our size. Our past successful experience demonstrates that providing multi-disciplined services within one organization results in a fully coordinated project. ZMM has the qualified professionals available to provide services throughout the duration of a project from the initial planning phases through post-occupancy evaluations and beyond.

Advantages of an integrated Design Approach:

- The Owner has a Single Point of Design Responsibility
- Improved Design Schedule
- Improved Coordination of Documents
- Improved Construction Phase Services
- Well Coordinated Documents Lead to Better Bids for the Owner

Additionally, ZMM is constantly working to improve the services we offer by addressing emerging and evolving trends that impact the design and construction market. ZMM has seven LEED accredited Professionals on staff to address the needs of our clients who are interested in designing buildings that meet the US Green Building Council's standards. This continues ZMM's active implementation of sustainable design principles on our projects.

Services

Pre-Design

- Educational Facility Planning
- Programming
- Space Planning
- Feasibility Studies
- Existing Building Evaluation
- Site Evaluation and Analysis
- Master Planning
- Construction Cost Estimating

Design

- Architectural Design
- Sustainable Design
- Interior Design
- Landscape Architecture
- Structural Engineering
- Mechanical Engineering
- Electrical Engineering
- Civil Engineering
- Lighting Design
- Energy Consumption Analysis

Post Design

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



Award Winning Design



2016

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

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

2015

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

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

2014

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

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

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



2012

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



2011

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



AIA West Virginia Chapter: Honor Award
Excellence in Architecture
Joint Interagency Training & Education Center
Kingwood, West Virginia



AIA West Virginia Chapter: Merit Award
Excellence in Architecture in Interiors
WV State Office Building #5, 10th Floor Renovation
Charleston, West Virginia



2010

AIA West Virginia Chapter: Honor Award
Excellence in Architecture
Hacker Valley PK-8 School
Hacker Valley, West Virginia



2009

AIA West Virginia Chapter: Merit Award
Excellence in Architecture
Construction & Facilities Management Office (CFMO)
Charleston, West Virginia

2008

AIA West Virginia Chapter: Honor Award
Excellence in Architecture
Erma Byrd Center
Beaver, West Virginia

Adam R. Krason, AIA, LEED AP, ALEP



Role
Principal

Professional Registrations

Registered Architect (WV, OH, KY, VA)
LEED Accredited Professional
Accredited Learning Environment Professional
NCARB (55,984)
Construction Specifications Institute (CSI)
Construction Documents Technician (CDT)

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

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

Project Experience

Charleston Civic Center, Charleston, WV

Mr. Krason is serving as Principal-in-Charge of the expansion and renovation to the Charleston Civic Center. The \$75M, 283,000 SF design-build project is being completed as a

Education

Bachelor of Architecture, The Catholic University of America, 1998

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

Employment History

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

Civic Affiliations

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

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

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

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

Morgantown Readiness Center (WVARNG), Morgantown, WV

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

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

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

Wood County Justice Center, Parkersburg, WV

Mr. Krason was the Project Manager for this adaptive reuse project. The existing 32,000 SF building creates a new Magistrate Court and Sheriff's Department. The justice center is LEED Silver Certified.

Tucker County Courthouse Annex, Parsons, WV

Mr. Krason was the Project Architect for the courthouse annex addition in Parsons, WV. The Annex is a 4-story, 21,000 Square Foot building that is adjacent to the Tucker County Courthouse. The annex will house spaces for the Circuit Court, Circuit Clerk, Family Court, Magistrate Court, Prosecuting Attorney, County Commission, County Clerk, Community Corrections, and Probation Office.

State Office Building #5, 10th Floor Renovation (Office of Technology), Charleston, WV

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

Participated on the team that won the following awards and acknowledgements:

2016 WV AIA Merit Award *Christ Church United Methodist, Charleston, WV*

2015 WV AIA Honor Award *Edgewood Elementary School, Charleston, WV*

2014 WV AIA Merit Award *Girl Scouts of Black Diamond Council, Charleston, WV*

2011 WV AIA Honor Award *Joint Interagency Training and Education Center (JITEC), Kingwood, WV*

2011 AIA Honor Award *State Office Building #5, 10th Floor Renovation, Charleston, WV*

2009 AIA Merit Award *WVARNG Construction and Facilities Management Office, Charleston, WV*

Robert Doeffinger, PE



Role

Engineering Principal

Professional Registrations

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

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

After graduate school in Architectural Engineering, Mr. Doeffinger joined ZMM. He has over 35 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

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

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

Education

Master of Science Architectural Engineering, Pennsylvania State University, 1976

Bachelor of Science Mechanical Engineering, West Virginia University, 1973

Employment History

2005 - Present, President, ZMM

1976 - 2005, Vice President and Engineering Principal, ZMM

Civic Affiliations

- ASHRAE – Member of the Technical Committee Load Calculations Data and Procedures for 15 years, serving as chairman. Presently Chairman of the Research Subcommittee
- Advisory Board for the Department of Electrical Engineering Technology, Bridgemont Community and Technical College
- City of Pt. Pleasant, WV – 2nd Ward Councilman for 20 years

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

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

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

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

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

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

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

The Plaza at King of Prussia, Pittsburgh, PA One of the largest retail centers in the east. Mr. Doeffinger has performed engineering services for the past 20 years. The project consists of a 5,000 -ton chilled water plant and 1,500,000 cfm variable volume system for tenants and constant volume air system for common areas and an engineered smoke control system. The most recent project is a 2011, 100,000 square foot expansion of tenant spaces, a renovation of the food court, and a 1,250-ton chiller addition to the central chilled water plant.

The Boulevard at 2412, Charleston, WV Mr. Doeffinger was on the design team for the proposed Kanawha Boulevard Condominium project. The sixty unit project, located in the East End Historic District, included a design that increased in height as it stepped back from the Kanawha River, providing the opportunity for a series of outdoor living areas, while also respecting the massing of the adjacent residences in the Historic District.



Role

Mechanical Engineer

Professional Registrations

Professional Engineer (WV, WI, IL)

LEED Accredited Professional

Mr. Butzer is a registered Professional Engineer with design experience in HVAC, Piping (Mechanical, Industrial, Laboratory, Medical Gas) and Plumbing systems. He has been responsible for an extensive range of projects that include Medical and Dental Office Buildings, Military Installations, Churches, Restaurants, K-12 Schools, Higher Education Facilities, Laboratories, Pharmaceutical Manufacturing, Natatoriums and Historical Renovations.

Mr. Butzer began his career in engineering with a mechanical contractor located in Wisconsin. His engineering experience included projects that were either design-build or plan & spec. His background in design-build engineering and 3D BIM coordination has exposed him to a number of "real world" HVAC and piping constructability issues. That experience has forged him into a leader at the integration of all disciplines into a multitude of building types and space constraints.

Project Experience

Charleston Civic Center, Charleston, WV

Mr. Butzer is the Mechanical Engineer on the expansion and renovation to the Charleston Civic Center project. The \$75M, 283,000 SF design-build project is being completed as a collaboration with tvsdesign and BBL Carlton. The design commenced in the spring of 2015, and construction is scheduled for completion in 2018.

Appalachian Regional Hospital, Beckley, WV

Mr. Butzer is the Mechanical Engineer currently working with the hospital on multiple renovations. The hospital will receive HVAC upgrades, make-up air and fan coil units, a new endoscopy suite, as well as other renovations to the kitchen area.

NGK Oxygen Sensor Plant, Sissonville, WV

Mr. Butzer was responsible for expansion and improvements to the existing cycle water piping system used to cool NGK's manufacturing equipment. The design included variable speed, vertical turbine pumps located above a concrete manhole and polypropylene piping was used to connect to the existing system and limit corrosion of the open piping system. Existing

Education

Bachelor of Science, Mechanical Engineering, University of Wisconsin at Madison, 2007

Associate of Science, Madison Area Technical College, Madison, WI, 2004

Employment History

2013 - Present, Project Engineer, ZMM

2007 - 2013, Mechanical Engineer, WI

2005 - 2007, Mechanical Engineer

Intern, UW-Madison FP&M

Civic Affiliations

- American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), President Elect of West Virginia State Chapter
- United States Green Building Council (USGBC), Board Member
- Kanawha City Community Association, Member

heat exchangers were scrutinized and approved for new flow conditions, and the fluid cooler/cooling tower was replaced with an improved, upgraded model. A controls system expansion and integration was needed to incorporate all equipment, valves, and sensors into a single, seamless communication protocol.

Glenwood Elementary School, Princeton, WV

Mr. Butzer was the mechanical engineer for this successful project that came in under budget. The first phase was duct cleaning and sealing and the second phase was the HVAC improvements which replaced all existing air handling units (AHUs) with new variable speed compressor AHUs.

Harrisville Elementary School, Harrisville, WV

Mr. Butzer was responsible for designing the HVAC systems for the renovation and additions to the elementary school. Initial design development consisted of variable refrigerant flow (VRF) systems coupled with dedicated outdoor air (DOAS) systems for the Classrooms and Administration areas. Roof mounted air conditioning and exhaust equipment were provided for the new Cafeteria, Kitchen and existing Gymnasium. Budget and space constraints forced the design to evolve into individual, self-contained, interior air handling units for each Classroom. The units were able to meet ASHRAE 62.1 requirements for ventilation, the Acoustical Society of America's (ASA) requirement for sound, and every other standard such as individual classroom temperature and dehumidification control as set forth by the School Building Authority (SBA).

Gestamp West Virginia, South Charleston, WV

Mr. Butzer led a design team that was tasked to provide a mechanical system to separate out, or divert hydraulic fluid collected along with chilled water released from immense, automobile component stamping machines. The design included an aboveground oil-water separator, density meters, 3-way valves, storage tanks and a controls system to monitor fluid flow and guarantee separation or storage of non-compliant sanitary discharges.

Nicholas County Courthouse, Summersville, WV

The Nicholas County Courthouse is a Historic building constructed in 1898 with an addition executed by the Works Progress Administration in 1940. The courthouse was added to the U.S. National Register of Historic Places in 1991. Mr. Butzer led a project team responsible for upgrading an existing 2-pipe fan coil system into a 4-pipe system to provide simultaneous heating and cooling and meet the climate and comfort needs of specific occupants. A new 4-pipe system, variable speed pumps and 3-way valves were provided in the basement to achieve integration of the new system into the existing. Construction had to be phased to allow installation of the new heating loop while the existing system remained in cooling operation; the new cooling loop would be installed once the building switched over to the new heating loop. Welding and soldering were not allowed so materials such as PEX, pressure-seal copper and mechanical joint steel piping were specified. A new Building Automation System with most of the communication occurring wirelessly was chosen to minimize disturbances to the historical architecture of the building.

Project Experience with other firms

Froedtert Health Medical Office Building, Menomonee Falls, WI

Mr. Butzer was responsible for the tenant build-out of a 5-story, Medical Office Building. Roof mounted air conditioning and heating equipment with a medium pressure duct loop on every floor was previously installed as part of the core-and-shell construction. The design included over 150 different zones served by variable air volume (VAV) and fan powered VAV terminal units with hot water reheat coils, 95% efficient condensing boilers, and variable speed pumps. Specialized, split DX cooling and dehumidification units were provided for priority departments including the Pharmacy, Laboratory, Radiology, and Computed Tomography (CT) Scanner.

Rodney Pauley, AIA



Role

Project Manager

Professional Registrations

Registered Architect (WV)

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

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

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

Project Experience

Charleston Civic Center, Charleston, WV

Mr. Pauley is serving as project manager on the expansion and renovation to the Charleston Civic Center. The \$75M, 283,000 SF design-build project is being completed as a collaboration with tvsdesign and BBL Carlton. The design commenced in the spring of 2015, and construction is scheduled for completion in 2018.

Bridgemont Community and Technical College (Davis Hall, Building 704), Montgomery, WV Mr. Pauley is the project manager for a design team that is currently preparing construction documents for the renovation to an existing 7-story, 77,000 SF educational building. The project scope includes remedying several engineering and life safety deficiencies, as well as architectural improvements to the building envelope.

Education

Bachelor of Architecture, University of Tennessee, 1992

Associate of Science, West Virginia Institute of Technology, 1986

Employment History

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

Civic Affiliations

- American Institute of Architects, Member

WVU Institute of Technology, Montgomery, WV

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

WV Lottery Headquarters, Charleston, WV

Mr. Pauley is the project manager for a design team that is currently preparing construction documents for renovations to the existing WV Lottery Headquarters complex in Charleston, WV. Renovations to the existing 12-story office building include the demolition and reconstruction of three floors of tenant space and demolition and replacement of the existing roof along with various minor renovations throughout the office tower. The existing 5-story parking deck will undergo an extensive structural renovation, includes: replacing bearing pads, patch & repair of concrete members and the addition of waterproofing protection. The existing warehouse under the parking deck is being enlarged to provide additional storage space.

Sherman Junior High and High School, Seth, WV Mr. Pauley was the project manager responsible for owner coordination, design and construction document production for major renovations to the Sherman Junior High and High School in Seth, WV. The entire front of the building was renovated to improve both vehicular and pedestrian circulation while enhancing the entrances to both schools. Of the main road, a new, two lane bus loop was constructed along with a large parking area for 120 cars, separated from each other by a retaining wall with cable guardrail. Steps from the upper parking lot lead to two, new curved steel and brick canopies constructed to highlight the entrances to each school. On the interior of each school a new safe-school entrance was created along with renovations to each school's administrative area. At the rear of the building adjacent to the river, a new sanitary sewage treatment plant was installed replacing the larger existing unit.

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

Beech Fork State Park, Lavalette, WV

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

Other Project Experience

One Federal Place, Birmingham, AL. Mr. Pauley was the project architect responsible for design, construction documents and construction administration for the 12-story, 466,600 SF speculative office building with attached 5-story, 520-car parking deck. The base of the office tower and parking deck, which are located in the heart of downtown Birmingham, are faced in granite to match the surrounding buildings. The tower is faced with architectural precast concrete panels and an insulated glass curtainwall system. The entrance lobby is highlighted by custom wood paneling and a highly-detailed granite floor.

**Role**

Architect

Professional Registrations

Registered Architect (WV)

Mr. Spencer is responsible for coordinating the efforts of the design team in preparing thorough and clear design documents. He has experience in all phases of design working on a wide range of building types including; military, educational, office, justice, and residential.

He has worked on several projects that are currently pursuing LEED certification. In addition to production, Mr. Spencer, is also experienced in 3d modeling. He has worked on several preliminary concept study models as well as high quality renderings and 3d models later in the design process. Mr. Spencer is also experienced in high quality physical models.

Mr. Spencer began his career in architecture with ZMM in 2003, working as a summer intern. After graduating in 2003, he began working at ZMM full time.

Project Experience**Tucker County Courthouse Annex, Parsons, WV**

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

Judge Black Courthouse Annex, Parkersburg, WV

Mr. Spencer assisted with the design and programming of the adaptive reuse of a former commercial space and movie theaters into a modern courthouse annex. The Judge Black Annex included two independent circulation paths – a secure entry and lobby for access to the Family Court and Prosecuting Attorney, and public access to the Assessor and Sheriff's Tax Department. The facility also houses several large public meeting rooms.

Jackson County Armed Forces Reserve Center, Ripley, WV

Mr. Spencer participated in the schematic design of the 76,000 SF Reserve Center in Jackson County, West Virginia. Mr. Spencer was also responsible for coordinating the production effort for the project. Mr. Spencer also produced several 3D

Education

Bachelor of Architecture, University of Tennessee, 2007

Employment History

2009 - Present, Architect, ZMM
2007 - 2009, Intern Architect, ZMM
2003 - 2007, Summer Intern, ZMM

Civic Affiliations

- American Institute of Architects, Member

models throughout the design process. The project is aiming for LEED Silver Certification.

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

Morgantown Readiness Center (WVARNG), Morgantown, WV

Mr. Spencer was a member of the production team for the 58,000 SF project, which housed the Army Band and associated performance spaces. Mr. Spencer also produced several 3d models throughout the design process. He also participated on all production work through all phases. The project is aiming for LEED Silver Certification.

Highland Hospital, Charleston, WV

Mr. Spencer was the Project Architect on Highland Psychiatric Hospital. Mr. Spencer was responsible for coordinating the production effort for the 60,000+ SF mental health facility. Mr. Spencer also produced several 3-D models throughout the design process. This project consisted of 87,300 SF, \$26M addition to Highland Hospital in Charleston. The addition will include: administrative offices, training spaces, 165 patient beds, nurses stations, an out-patient treatment department, pharmacy, laundry, and building service spaces. A pedestrian bridge will connect the new facility to the existing hospital.

Edgewood Elementary School, Charleston, WV Mr. Spencer is currently participating on a design team that is developing the new Kanawha County Elementary School on Charleston's West Side. The school is being designed as a 21st Century Learning Environment, with a focus on integrating technology into the delivery of the curriculum. Instructional areas will be located off of an open 'exploratorium' that is being designed to function like a children's museum, providing a variety of learning opportunities, and flexible educational spaces. The school will also visibly integrate sustainable design principles to serve as a teaching tool for the students. A dental and health clinic is also on site for all enrolled students in the Kanawha County School District.

Cabell County Bus Transportation Complex, Huntington, WV Mr. Spencer was the project Architect on the Cabell County Transportation Complex is located on the site of the old Cox Landing Junior High School. Challenges on the project involved retrofitting the old school and site to accommodate the new use. The rear portion of the school was demolished to make room for the new maintenance portion of the building. The remaining front section of the school was renovated to include office space, storage areas, and a new staff development room. The new maintenance area includes a high-bay metal building with 14 back to back workbays, three of which have hydraulic bus lifts. A hand wash bay and a state of the art automatic wash bay were also included in the project. Extensive sitework was also involved in the retrofit project including a fueling station, bus parking, a sediment pond, and an extensive rework of the existing site utilities.

Additional Projects:

Charleston Civic Center, Charleston, WV
Wayne High School, Wayne, WV
Crum PK-8 School, Crum, WV
Logan-Mingo Readiness Center, Logan, WV
Goodwill Industries, Charleston, WV

**Role**

Electrical Engineer

Professional Registrations

Professional Engineer (WV)

Mr. Casdorff serves as an Electrical Engineer with ZMM providing electrical design services for a vast number of projects consisting of commercial, educational, correctional, institutional, and military facilities.

Mr. Casdorff is responsible for many facets of the project pertaining to electrical design such as interior and exterior lighting, power distribution, data system design, security, fire alarm, low voltage control systems, equipment specifications and performs electrical assessments during construction prior to the project's substantial completion date. Mr. Casdorff has participated on several LEED registered projects using energy conserving methods and utilizing lighting control systems and other means to meet or exceed ASHRAE 90.1, LEED, and energy code requirements.

Project Experience**Charleston Civic Center, Charleston, WV**

Mr. Casdorff is the Electrical Engineer on the expansion and renovation to the Charleston Civic Center project. The \$75M, 283,000 SF design-build project is being completed as a collaboration with tvsdesign and BBL Carlton. The design commenced in the spring of 2015, and construction is scheduled for completion in 2018.

Southside Elementary and Huntington Middle School, Huntington, WV Mr. Casdorff was the electrical engineer on this 156,000 SF facility. This project encompasses all phases of construction; demolition, major renovation and new construction. The original historic 26,000 SF three story school building was preserved and the remaining less than adequate facility was strategically removed to accommodate the new addition. The existing facility was completely renovated and brought up to new construction standards to blend with the new addition. The project consisted of two distinct school facilities existing on the same piece of property. The new construction blends seamlessly with the older historic structure.

Craigsville Elementary School, Craigsville, WV

Mr. Casdorff was responsible for the electrical design of the new elementary school. The project is consolidating Beaver

Education

Bachelor of Science, West Virginia Institute of Technology, 1995

Employment History

2000 - Present, Electrical Engineer, ZMM
1995 - 2000 Electrical Controls Systems Manager, WV Engineering Firm

Elementary School and Craigsville Elementary School into a new 375-student school. The school houses 3 Pre-Kindergartens, 3 Kindergartens, 2 first grade, 12 1st-5th grade classrooms, activity room, cafeteria, kitchen, media center, and administration spaces.

Lincoln County High School, Hamlin, WV Mr. Casdorff was responsible for the electrical power distribution throughout the 216,000 SF facility containing high school classes, vocational education, technical community college classes and a community health clinic. The project was a 2007 AIA Honor Award Winner.

Milton Middle School, Milton, WV Mr. Casdorff was responsible for the electrical design of the new 96,000 SF facility housing 700 middle school students grades 6 through 8.

Fort Gay PK-8 School, Fort Gay, WV

Mr. Casdorff was the electrical engineer and was responsible for the electrical power distribution and design. The New Fort Gay PK-8 School replaces the existing facility that has been in disrepair and lacking the spaces and technology delivery system required for 21st century learning skills. The total enrollment for the school is 603 Students. The new grade configuration separates the Elementary students from the Middle School students, but still allows use of the common spaces within the building. They share the Dining Room, Gymnasium, Media Center and a Stage.

Southern WV Community & Technical College, Williamson WV Mr. Casdorff was responsible for the electrical power and lighting distribution design of this 22,000 SF higher education facility. This project is being designed to meet the USGBC LEED Silver.

Joint Interagency Education and Training Center (WVARNG), Kingwood, WV Mr. Casdorff was responsible for the electrical design of the 180,000 SF 3-story billeting/hotel expansion for the Army National Guard campus style facility for training and operational mission support. The expansion more than triples the facility size and increases the total capacity from 189 guest rooms to 600 guest rooms and suites. This project reached LEED Gold Certification.

West Virginia Research, Education, and Technology – Building 704, South Charleston, WV Mr. Casdorff is the electrical engineer for building 704 and responsible for electrical power and lighting distribution. Building 704 had previously been utilized as a campus maintenance facility by Union Carbide and DOW Chemical. Bridgemont began utilizing the facilities for instruction in the Spring of 2011.

West Virginia Housing Development Fund Office, Charleston, WV Mr. Casdorff was responsible for the electrical design of the 37,000 SF office building which provides natural daylighting into its interior spaces coupled with an automatic dimming system and motorized shade controls. This 2-story administrative facility houses approximately 95 to 100 employees with a flexible open office floor plan utilizing modular under-floor wiring to accommodate any future modifications of the workspace with minimal disruption to the employees. The project is targeted for LEED Silver Certification.

Jackson County Armed Forces Reserve Center, (WVARNG), Millwood, WV Mr. Casdorff was responsible for the electrical design of the 76,000 SF single story military reserve center which serves both the West Virginia Army National Guard and the United States Army Reserves (USAR) units. The multi-use facility provides educational spaces for classrooms, distance learning, physical training and a weapons simulation center. The project is targeted for LEED Silver Certification.

Glen Jean Armed Forces Reserve Center, (WVARNG), Glen Jean, WV Mr. Casdorff was responsible for the electrical design of the 102,000 SF military training facility which houses the Armed Forces Reserve Center (AFRC), Military Entrance Processing Station (MEPS), and an Organizational Maintenance Shop (OMS). The AFRC contains the administrative and training space for the 77th Brigade Troop Command, the 1863rd Transportation Company, and the 150th Armored Regiment Company. The MEPS houses their administrative, medical, headquarters, testing and storage functions at the facility. A comprehensive 8,500 SF OMS vehicle maintenance shop provides space for six large service workbays for maintaining the military fleet.

Mike Flowers



Role

Plumbing/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.

Project Experience

Mr. Flowers has a broad range of experience in Plumbing and HVAC systems design, including K-12 schools, higher education facilities, Military Facilities, office buildings, and juvenile and adult correctional facilities.

- Huntington East Middle School
- Southern WV Community & Technical College
- Lincoln County High School
- Morgantown Readiness Center
- Logan-Mingo Readiness Center

Jackson County Armed Forces Center (WVARNG): Mr. Flowers was responsible for the plumbing design on this project that utilized plumbing fixtures that reduced the total annual water usage by 30% as compared to using standard plumbing fixtures.

His design also incorporated 98% efficient water heating technology that dramatically reduced the total utility consumption for water heating.

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

Employment History

2001 - Present, Mechanical and Electrical Technician, ZMM

1998 - 2001, Mechanical and Electrical Designer/Manager of CAD Services, ZDS, Inc

1991 - 1998, Mechanical and Electrical Technician, ZMM

Civic Affiliations

- American Society of Plumbing Engineers (ASPE), Member Since 2009

John Pruett, PE, LEED AP



Role

Mechanical Engineer

Professional Registrations

Professional Engineer (WV, IN)

LEED Accredited Professional

Mr. Pruett is responsible for overseeing the design of the HVAC systems, ensuring that the HVAC systems not only meet the program requirements, but meet the long-term needs of the owner. He performs heating and cooling load calculations and recommends the type of systems to be incorporated into the building. He coordinates with the other disciplines in order to integrate the HVAC systems into the building. Mr. Pruett has participated on several LEED registered projects; one of his key contributions to these projects is conducting energy analyses and recommending energy use reduction alternatives.

Mr. Pruett began his career in engineering with a manufacturing company in 1994. In 1998, he made a career change and joined an engineering consulting firm as an HVAC design engineer. He has a broad range of experience in HVAC systems design, including K-12 schools, higher education facilities, office buildings, libraries, hotels, restaurants, a convention center and several natatoriums. Having served in the Marines for 14 years, Mr. Pruett also led a design team for a "virtual memorial" for the birthplace of the U.S. Marine Corps.

Project Experience

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

Edgewood Elementary School, Charleston, WV Mr. Pruett was the mechanical engineer on the new Kanawha County Elementary School on Charleston's West Side and responsible for the HVAC systems design. The school is being designed as a 21st Century Learning Environment, with a focus on integrating technology into the delivery of the curriculum. Instructional areas will be located off of an open 'exploratorium'

Education

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

Employment History

2010 - Present, Project Engineer, ZMM
2007 - 2009, Sr. Mechanical Engineer, IN

2003 - 2007, Mechanical Engineer, IN
1999-2003, Project Engineer, Fort Lauderdale, FL

Civic Affiliations

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

that is being designed to function like a children's museum, providing a variety of learning opportunities, and flexible educational spaces. The school will also visibly integrate sustainable design principles to serve as a teaching tool for the students.

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

Tucker County Courthouse Annex, Parsons, WV

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

Current Education Experience

Explorer Academy
John Adam Middle School
Salt Rock Elementary School

Project Experience with other firms

Southern Indiana Career and Technical Center (SICTC), Evansville, IN Mr. Pruettt was responsible for the HVAC systems design for the 262,000 square foot facility. The project features a complex air system necessitated by the diversity of the educational programs featured in the facility: welding, auto shop, building trades, electronics, radio/TV communications, culinary arts, etc. The main mechanical room was also designed to be an educational space, utilizing color-coded piping, a corresponding color-coded equipment schematic and an accessible controls workstation to aid the students in learning about building systems.

Nicholas Kidd



Role Mechanical Designer

Mr. Kidd is responsible for the design of HVAC systems, and the completion of construction documents clearly explaining the work to be performed as required by the owner for each particular project. Mr. Kidd primarily utilizes Revit for Building Information Modeling (BIM), the generation of construction documents, and coordination with all other building trades. 3D modeling provides a cost savings to the owner, decreasing the amount of conflicts in the construction phase of the project, and is a requirement in some cases. Mr. Kidd also has experience in the construction industry with project management, structural steel detailing (3d modeling), and project estimating.

Project Experience

Mr. Kidd has a range of experience in HVAC design in both new and renovation work, including K-12 schools, Regional Jails, office buildings, Labs, and hospitals.

- Wayne County BOE Ceredo-Kenova Elementary
- Wayne County BOE Crum PK-8
- Wayne County BOE Wayne HS Addition
- Nicholas County High School Weld Shop
- North Central Regional Jail
- Potomac Highlands Regional Jail
- WV Lottery Building Renovation
- CAMC Cysto Room
- CAMC Isolation Rooms
- CAMC Laundry Renovation
- SWVCTC Williamson Science Lab Renovation
- Charleston Civic Center Renovation

Education

Bachelor of Science Mechanical Engineering, 2002, West Virginia University Institute of Technology

Associate of Science Drafting Design Engineering Technology, 2002, West Virginia University Institute of Technology

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

Employment History

2012 - Present, Mechanical Designer, ZMM

2010 - 2012, Project Manager, Bell Mechanical, Inc

2007 - 2010, Structural Steel Detailer, CEC Steel, Inc.

2002 - 2007, Project Manager, March-Westin Company, Inc



Role

Specifications Writer

Professional Registrations

Registered Architect (WV, OH,)
LEED Accredited Professional
NCARB Certification
Construction Documents Technologist (CDT)

Mr. Epling is responsible for the creation and coordination of Project Manuals including specifications for all ZMM projects. The coordination duties include the incorporation of specifications from several design disciplines including structural, plumbing, HVAC, and electrical specifications.

Mr. Epling's duties also include determining the type and number of bid packages and resulting construction contracts for a particular project, and following through with the incorporation of the appropriate contract forms and contract conditions into the Project Manuals.

Mr. Epling began his career as a licensed Architect in October 1982 and has acquired experience in all aspects of the architectural practice working on a variety of building types including single-family homes, medical clinics, industrial facilities, theatre restoration, commercial-retail buildings, and college dormitory and elementary school remodeling.

Mr. Epling began working at ZMM in February 1998 and has worked in preparation and coordination of working drawings, construction contract administration, and beginning in June of 2006, took on the role of specifications writer and has remained in that capacity.

Project Experience

Mr. Epling's recent project experience includes the preparation of Project Manuals for the following ZMM projects:

Charleston Civic Center - Expansion and Renovation
WV State Capitol Roof Replacement
WV State Office Building #5, 6, & 7
WV Housing Development Fund
CFMO Expansion
Houston Company Store
Erma Byrd Center
Joint Interagency Training & Educational Center (JITEC)
Huntington East Middle School

Education

Bachelor of Architecture,
Virginia Polytechnic Institute and State
University, 1977

Employment History

1998 - Present, Project Architect &
Specifications Writer, ZMM
1997 - 1998, Project Architect, OH Firm
1982 - 1997, Architect, Self Employed,
Located in OH
1978 -1982, Intern Architect, OH Firm

Civic Affiliations

- American Institute of Architects,
Member
- West Virginia Symphony Chorus,
Member

WV Army National Guard - Glen Jean AFRC
WV Army National Guard - Jackson County AFRC
WV Army National Guard - Morgantown Readiness Center
WV Army National Guard - Logan-Mingo Readiness Center
Wood County Justice Center
Tucker County Courthouse Annex
Southern WV Community & Technical College
Bridgemont Community & Technical College
Milton Middle School
Barboursville Middle School
Kenna Elementary School
Craigsville Elementary School
Southside Elementary/Huntington Middle School
laeger - Big Creek High School
Lincoln County High School
St. Albans High School
Bradshaw Elementary School
Edgewood Elementary School
Hacker Valley Pre K-8 School
Beech Fork State Park Lodge
CAMC Teays Valley
Highland Hospital

Role

Structural Engineer

Professional Registrations

Professional Engineer (WV, KY, IN, TN, OH, SC)

Mr. White has more than 10 years of Civil/Structural design and engineering experience. Project experience includes new construction and renovation work involving the design and analysis of reinforced concrete, wood, structural steel, masonry and cold formed steel.

Project Experience

WVDNR Forks of Coal
Milton PK School
Midland Trail High School
Valley Park Community Center
Marshall County Readiness Center

Other Jobs from Past Employers:

Monongalia County Justice Center - Morgantown, WV
Lewis Co. Judicial Annex - Weston, WV
Charleston Correctional Work Release Center - Charleston, WV
Stevens Correctional Facility - Welch, WV
Marsh Fork Elementary School - Naoma, WV
WVANG Camp Dawson, Multi-Purpose Building - Kingwood, WV
Bridge Valley Advanced Technology Center - South Charleston, WV
New River Community and Technical College Headquarters Building - Beaver, WV
Lewisburg Elementary School - Lewisburg, WV
Rainelle Elementary School - Rainelle, WV
Boone County Honors Academy Addition - Madison, WV
WVU Parkersburg Center for Early Learning - Parkersburg, WV
WVU Parkersburg Applied Technologies Center - Parkersburg, WV

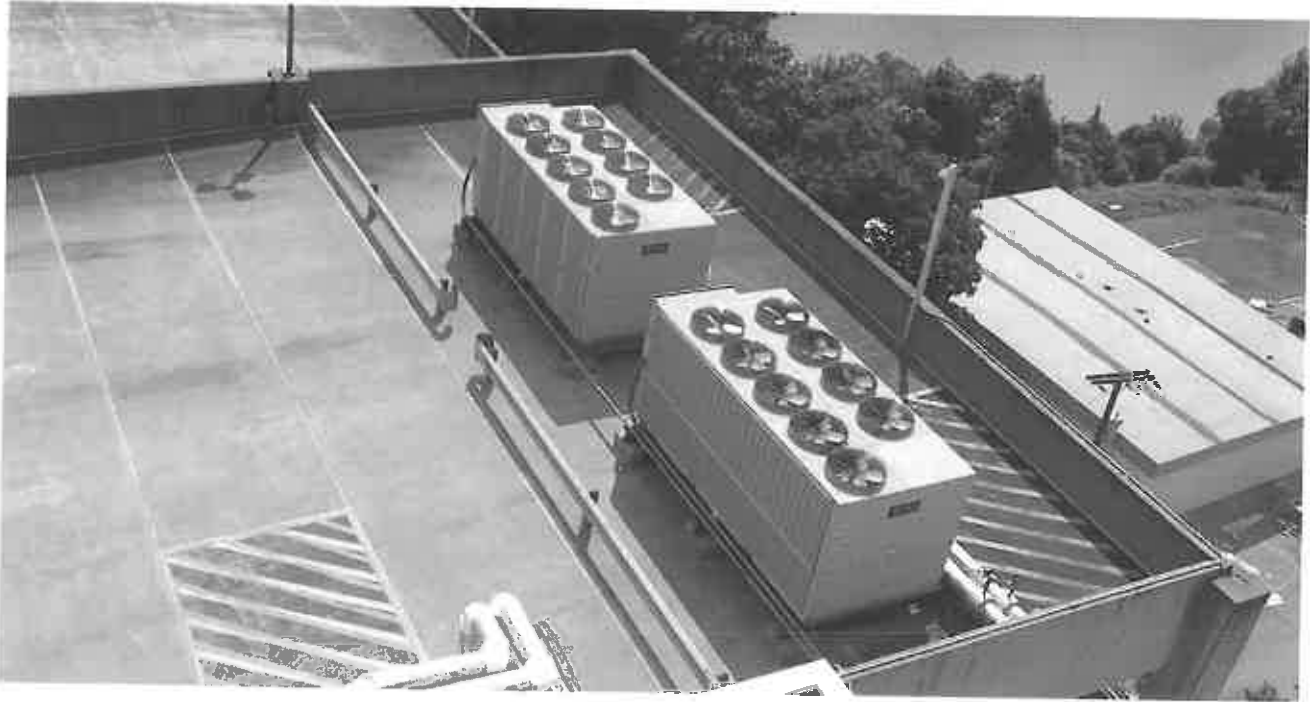
Education

B.S., Civil Engineering, West Virginia University Institute of Technology, Montgomery, WV, 2006

Employment History

2016 - Present, Structural Engineer, ZMM
2016, Civil/Structural Lead, Jacobs Engineering Group
2013 - 2016, Structural Engineer, Chapman Technical Group
2010 - 2013, Structural Engineer/Project Manager, Moment Engineers
2007 - 2010, Structural Engineer/Project Manager, Advantage Group Engineers, Inc. (Cincinnati, OH)

HVAC Renovation Experience



Charleston Civic 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 Capital 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.

WV State Capitol Cafeteria – Installation of large catering and service kitchen, included steam make-up air system, 3 Class 1 kitchen hoods, Class 2 kitchen hoods, all plumbing system, sprinkler system including sprinkler service entrance for entire Capitol Buildings, comprehensive architectural services.

HVAC Renovation Experience



Old Kanawha Valley Bank Building (2003) - New cooling chiller.
(2015) - New cooling tower.

City Center East (2008) Chiller Replacement.

Tenant Fit-Up Numerous Office Buildings Charleston – BB&T Building, City Center East, United National Bank Building, Hunting National Bank Building to include VAV distribution, electrical and architectural services.

Additional HVAC Projects:

Huntington Herald Dispatch - HVAC Study
Walker Machinery Main Office Renovation - HVAC
Walker Diamond Office - HVAC
Walker Machinery - HVAC Renovations
State of WV – Governor’s Mansion Corrective HVAC Study
Camp Dawson Regional Training Institute - HVAC
Central Regional Jail – HVAC and Roof Replacement
King of Prussia, PA – HVAC Design (Multiple Projects)
Kanawha Valley Senior Services - HVAC
Tolsia High School - HVAC Renovations
Cabell County Schools – (Multiple HVAC Projects)
Cabell County Career & Technical Center - HVAC Replacement
Cabell County Incubator School - HVAC
Harrisville Elementary School - HVAC
Ritchie County HS/MS - Cooling Tower Replacement
Spring Hill Elementary School - HVAC
Roane-Jackson Career & Technical Center
Salt Rock Elementary School - HVAC Renovation
Wayne County Schools – New HVAC System Projects
Greenbrier County Schools – New HVAC System Projects



West Virginia Regional Technology Park



Building 740 Steam Plant, South Charleston, WV

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.



ZMM is working with West Virginia Heating and Plumbing to develop a steam plant for Building 740. The steam plant will include new steam (convertible to hot water) boilers for the facility. The project also includes a new four bay block building to house the steam plant. The system designed by ZMM meets the current needs, and also plans for future improvements to the facility.



The project consisted of a new 1500 square foot masonry building adjacent to 740, with two 8,000,000 btuh 150 psi steam boilers, a feedwater system, condensate return system from the existing building, and water treatment. The boilers will be converted to hot water when Building 740 is renovated.

Additional Projects Include

West Virginia Research, Education, and Technology – Building 704, South Charleston WV

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.

West Virginia Regional Technology Park (WVRTP) - Building 740, South Charleston WV

This project involves designing and constructing the Interim Steam Heating System throughout Building 740.

Building 770 Evaluation, South Charleston, WV

ZMM's services included an investigation, assessment of the building condition including the building envelope, life safety issues, and engineering systems, as well as the development of conceptual plans for the lab areas. ZMM's assessment also included a detailed review of the building's current and future energy use. The energy consumption information helped to validate the payback of the proposed improvements.

WVRTP Steam Plant Analysis, South Charleston, WV

ZMM worked collaboratively with WVRTP staff and various consultants to develop an analysis of the efficiency of the Tech Park steam plant. Based upon the results of the analysis, the WVRTP decided to shutter the plant, resulting in a significant yearly savings.

Building 770

The 4-story building is a single use laboratory building with executive offices. The 122,180 SF laboratory building 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 wall between the corridor and the laboratory is a non-rated Hauserman (demountable) partition. Each lab is served by a chase that contains the following utilities: CW, HW, steam, air, vacuum, and nitrogen.



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 3 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.

West Virginia Regional Technology Park

Building 770 Renovation

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The Plaza at King of Prussia

Multiple HVAC Replacements



COST:
\$30M

COMPLETION:
2006

CONTACT:
Mr. Mickey McLaughlin
Director
Plaza Mall Management
160 North Gulph Road
King of Prussia, PA
19406
610.337.9272



The Plaza at King of Prussia - Philadelphia, Pennsylvania

MP Services – Design Build

- 2,500,000 SF, 4,000-Ton Chilled Water Plant, VAV and CV
- Air Handling System
- Existing and New Spaces

The Court at King of Prussia - Philadelphia, Pennsylvania

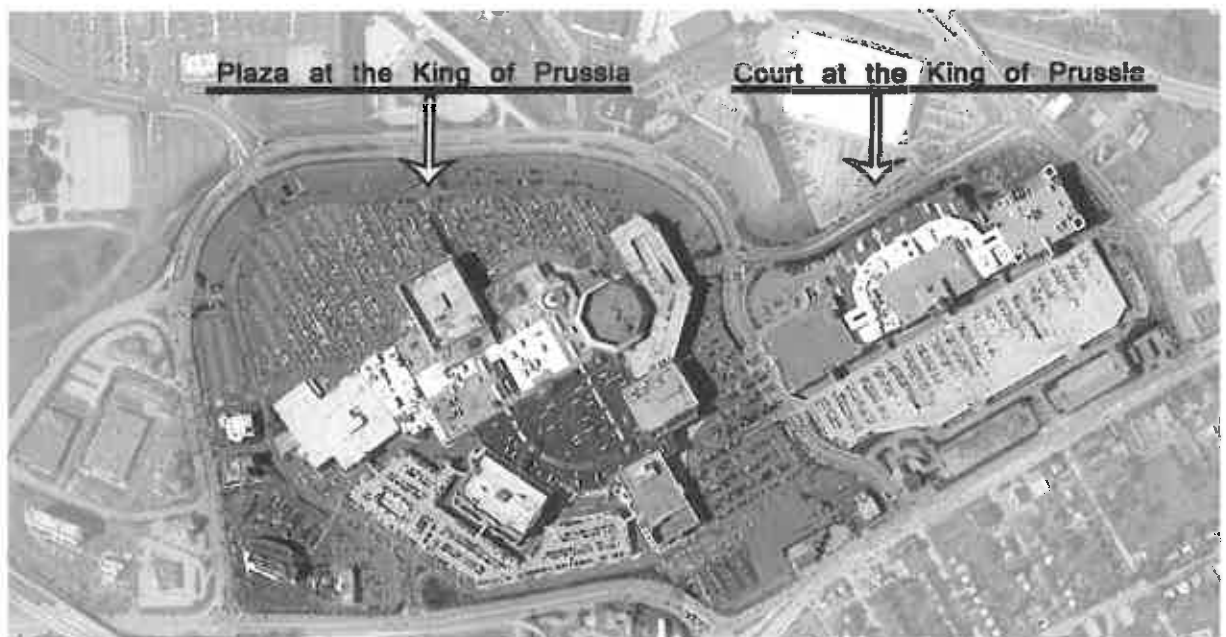
MEP Services

- Addition of a 3,000-Ton Chilled Water Plant Including
- New Structure and Replacement of All Air Handling Units
- Primary and Secondary Variable Chilled Water System

The Plaza at King of Prussia - Philadelphia, Pennsylvania

MEP Services

- Addition of 800-Tons of Chilled Water Air Handlers Units
- Addition - 150,000 SF and New VS 1,250 Ton Chiller
- 5,000 Ton CHW Plant Primary Secondary Pumping



Charleston Civic Center Expansion and Renovation



LOCATION:
Charleston, WV

SIZE:
283,000 SF

COMPLETION:
Est. 2017

COST:
\$75M

CONTACT:
Mr. David Molgaard
City Manager
City of Charleston
501 Virginia Street, E.
Room 101
Charleston, WV 25301
304.348.8014



The Charleston Civic Center Expansion and Renovation is a transformational project for both the city of Charleston and West Virginia. Our team is building on the strong authentic character of Charleston to remake the Charleston Civic Center into a more efficient, more sustainable, more dynamic and a more iconic best-in-class destination.

The design of the expansion and renovation of the Charleston Civic Center is 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, trapping. This set the local character. With a foundation rich in resources, manufacturing added value to the raw materials with crafts like glass making and industries like chemicals and energy. This attracted a rich diversity of immigrants and a culture of craftsmanship that set the urban character. The economy is shifting from industry and service to information and technology. Again, the landscape and industry that shaped the region gives Charleston real advantages to exploit. The Creative Class, critical for the information and technology age, can live and work anywhere - what they want is access to the outdoors; real places with real character; and continuous education and entertainment.

Our design starts with an organizational concept inspired by this history. The Kanawha River is the social organizing link throughout the region, with settlement zones developing on whatever flatland the river provided --creating nodes of activities among the hills and valleys.



Charleston Civic Center Expansion and Renovation



The renovated Civic Center is a building that emerges from this iconic landscape, with the architecture and topography working together. The Civic Center will also have distinct active nodes to celebrate each activity; arena, convention, and banquet, and 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 is to create separate entries and identities for the arena and convention center. This will allow for simultaneous events and clarity of use. For the convention center to thrive, it needs a real ballroom assembly space. Located overlooking the Elk River, the new ballroom pre-function space will be the most dramatic feature of the center. Together, the three glass enclosed nodes --arena lobby, convention lobby, ballroom --define a unique Charleston event campus. As described above, the spaces that connect these nodes are inspired by the hills and cut rock faces that connect the towns along the Kanawha River. With the building emerging from the landscape and expressed as cut rock walls, the connecting areas are designed to be expressive and economical backdrops to the glass boxed nodes.

While the expansion will transform the southeast to the middle of the northern zone of the site, the existing building mass will still dominate a portion of the northern and eastern campus. The dominant expression along these existing facades is the landscaped berms. As we imagined the new building expression emerging from the landscape, a strategy developed to transform these berms to reflect, at the pedestrian level, the overall design theme. Above the level of the berms, the new concourse level windows will open up the facade and provide a much needed break in the massing. The upper part of the arena will be painted in two tones to match the new building, playing off the different faces. The north, south, east and west faces painted a lighter shade; and the northeast, southeast, southwest and northwest faces a darker shade. Dramatic exterior color-changing lighting on the northeast, southeast, southwest and northwest faces will then transform the look and feel of the center into a fun and festive landmark.

The Houston Coal Company Store

Historic Renovation



LOCATION:
Kimball, WV

SIZE:
7,100 SF

COMPLETION:
Fall 2015

COST:
\$1.8M



ZMM Architects and Engineers, in association with Mike Gioulis, Historic Preservation Specialist, have been assisting the McDowell County Economic Development Authority with the restoration of the Houston Coal Company Store. The Company Store, located in Kimball, WV, is at the intersection of Route 52 and Carswell Hollow Road. It was constructed in 1923 and served as a coal company store until the 1940's. The building has since served as a dairy company, office and storage facility for a construction company, and currently sits vacant.

The 7,100 square foot facility includes a full basement, storage sheds, and a loading dock. The main portion of the building is 5,750 square feet, excluding the storage sheds and loading dock. The project team began by investigating all available historical documentation for the original facility. ZMM and Mr. Gioulis also visited the building site several times to assess the conditions of the architecture, structure, building systems, and surrounding cultural landscape.

To ensure the accuracy of the proposed improvements, a building information model (BIM) was created for analysis and documentation. The model was created based upon measurements and documentation performed on-site by the project team. Once the documentation was complete, a proposed floor plan was developed that included office space for the McDowell County Economic Development Authority staff, display areas for coal heritage artifacts, public restrooms, a gift shop, and a coffee shop. There are also plans to convert the outdoor storage sheds into an artisan's row.

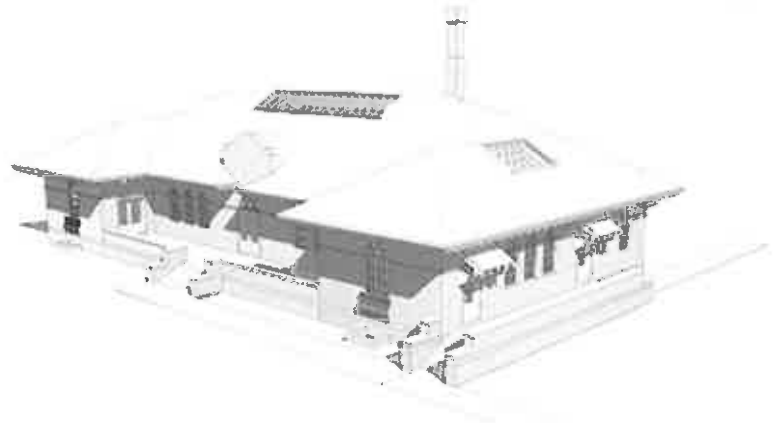
Based upon the investigative results of the facility's existing conditions and its proposed use, recommendations and a proposed cost estimate were created. All proposed improvements were developed based upon the Secretary of the Interior's Standards for Rehabilitation (Department of Interior regulations, 36 CFR 67), and were reviewed with the State Historic Preservation Office.

A final draft of the report was issued that prioritized the recommendations:

- **Phase I – Building Shell Restoration (stabilize and restore)**
- **Phase II – Building Systems Integration (mechanical, plumbing, and electrical systems)**
- **Phase III – Interior Restoration and Reuse (Including the removal of construction not original and not historically significant to the building)**

The Houston Coal Company Store

Based upon the availability of the initial funding, ZMM prepared bidding documents for Phase I. Once this documentation was complete, funding became available for the remaining phases of the work. The improvement package was bid in the summer of 2014, and all work was completed in the fall of 2015.



State Office Buildings 5,6, & 7



LOCATION:
Charleston, WV

COMPLETION:
On-Going

CONTACT:
Greg Melton
Director of General Services
Capitol Complex Building
Building 1, Room MB-60
1900 Kanawha Blvd., E.
Charleston, WV 25305
304.558.2317



More than forty (40) years ago, ZMM (as Zando, Martin, and Milstead) designed the original State Office Buildings 5, 6, & 7. Over the last several years, ZMM has been assisting the State of West Virginia General Services with various improvements to the buildings. These improvements have ranged from substantial renovations to maintenance and repair type projects, and include:

Roof Replacement

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

Electrical Courtyard Improvements

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

Door and Window Replacement

ZMM has assisted with two separate projects, one to replace the windows in Buildings 5 & 6, and the second to replace the doors at the entries to Buildings 5, 6, & 7. These projects included building envelope and security considerations. The projects were designed and staged to minimize disturbance to the buildings occupants.

State Office Buildings 5,6, & 7

Major Renovations

ZMM provided design services for the renovation of the 10th Floor of Building 5 for the Office of Technology - a project that was recognized with a design award from the West Virginia Chapter of the American Institute of Architects. The project focused on demonstrating the potential that exists in State Office Buildings 5 & 6 if the floors are renovated in a more contemporary manner that moves the open office spaces to the perimeter, and pulls the offices adjacent to the building core. The project also involved close coordination with the State Fire Marshal, the introduction of a new sprinkler service and fire pump into the building, demolition, construction management, and hazardous material abatement. The project was delivered considerably under the anticipated project budget. ZMM has also assisted on renovations to the 8th Floor of Building 6 for the Department of Education and the 2nd, 3rd & 4th Floors of Building 6 for the Department of Education and Division of Personnel. Work on the 8th Floor of Building 6 is the only additional renovation constructed to date. ZMM has recently been released to provide design services for Floor 7, 8 & 9 of Building 5 and the 7th Floor of Building 6.

Caulk Replacement

ZMM provided design services to remove and replace all of the caulk located between the limestone and precast panels on the exterior of Buildings 5, 6, & 7. The project also included cleaning of the building's exterior along with some repair work. The project was coordinated with the Capitol Building Commission, although to date, the construction for this improvement has not commenced.

Valve Replacement

ZMM assisted with a valve replacement project to isolate mechanical risers in Building 5 & 6. This technically intensive mechanical project will give the General Services Division greater control over the system, and will help isolate various risers in the event of significant system failures in the future.

State Office Building #5, 10th Floor

Office of Technology



LOCATION:
Charleston, WV

SIZE:
22,000SF

COST:
\$3.7M

COMPLETION:
2010

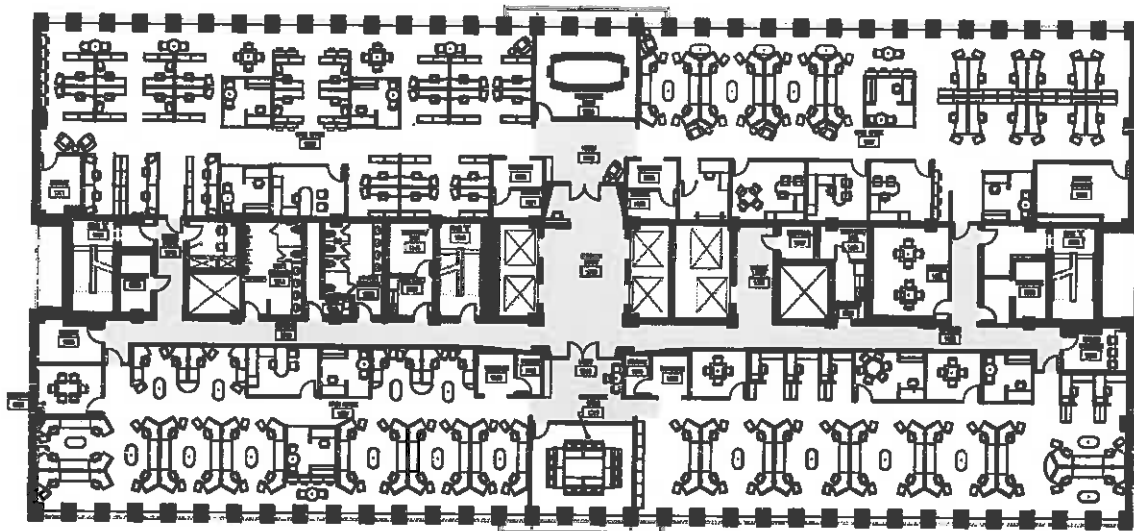
CONTACT:
Ross Taylor
Cabinet Secretary
Department of Admin.
Building 1, Room E119
Charleston, WV 25305
304.558.4331

AWARD:
2011 AIA Merit Award
West Virginia Chapter
*Achievement in
Architecture Interiors*



The renovation of the tenth floor of State Office Building #5 on the State of West Virginia Capitol Campus was recently completed for the Office of Technology. The renovation was designed to meet the United States Green Building Council's LEED for Commercial Interiors standard. To commence the project, ZMM conducted a detailed investigation of State Office Buildings 5, 6, & 7, which included recommendations for improvement of the facilities. The renovation of the 10th floor of Building #5 was the first major interior renovation project that responded to the recommendations. The renovation was technically intensive, and included demolition of the existing construction back to the building structure, as well as significant hazardous material abatement.

ZMM, working with the State of West Virginia General Services Division, the Real Estate Division, and the Office of Technology developed a strategy to renovate 22,000 SF of space to accommodate 137 employees. The design includes a mix of private and open office space, and responds to current workplace trends. The renovations include a low profile cable management system which maximizes the flexibility of the space. ZMM also developed the interior, furniture, fixture, and equipment design with significant coordination with the Office of Technology.



State Office Building #5, 10th Floor



To improve the opportunity for daylighting, office spaces have been “pulled-in” to the core of the building. This decision will allow for daylight to be introduced deep into the interior work areas, and will allow access to the daylight and views for all employees. The perimeter structural bays of the open office areas have a “coffered” ceiling. Ductwork for mechanical distribution is terminated at a bulkhead at the interior edge of the perimeter structural bay, allowing for more open volume and a more contemporary aesthetic.

The design of the 10th floor renovation also provided the opportunity to introduce a standard “transverse” core will be developed throughout State Office Buildings 5 & 6. The transverse core includes all of the major entry, meeting, and workroom functions. In addition to the office areas, the elevator lobby has been updated to create a consistent look and level of finish at the entry point to the Office of Technology.



Bridgemont Community & Technical College

Davis Hall Renovation



LOCATION:
Montgomery, WV

SIZE:
77,215 SF

COMPLETION:
Summer 2012

COST:
\$4M

CONTACT:
Dr. Jo Harris, President
619 2nd Avenue
Montgomery, WV 25136
304.734.6600



ZMM was selected by Bridgemont Community and Technical College and the West Virginia Community and Technical College System to provide professional architectural and engineering design services for the Renovation of Davis Hall in Montgomery. Davis Hall is a 77,215 SF classroom and laboratory facility that was constructed in 1970 for WVU-Tech. The exterior of the facility consists of architectural pre-cast concrete panels and a curtain wall system. The interior includes an open two story atrium, a large auditorium, and five levels of office and classroom space that is constructed of demountable partitions.

Prior to commencing the design effort, ZMM completed a thorough assessment of the facility. The assessment revealed significant life safety concerns that had not been previously identified, including the use of non-plenum rated plastic insulated wiring throughout the return air plenums, mechanical units located above ceilings in exit stairs, and a lack of adequate fresh air for building occupants. As part of this initial assessment, ZMM assisted in developing a scope of work for the current project, as well as a long range plan for future improvements to Davis Hall.

The scope of the current project includes life safety upgrades (replace non-plenum rated wiring, new fire alarm system), improvements to the building envelope (curtain wall replacement and re-roofing), hazardous material abatement, mechanical improvements (boiler and chiller replacement, outdoor air ventilation system replacement), and interior improvements (replace ceilings and lighting, upgrade furnishings).

Joint Interagency Training & Education Center

WVARNG



LOCATION:
Kingwood, WV

SIZE:
285,000 SF

COMPLETION:
2013

COST:
\$78.4M

OWNER:
MAJ Dan Clevenger
WVARNG
1707 Coonskin Drive
Charleston, WV 25311
304.561.6446

AWARD:
2011 AIA Honor Award
West Virginia Chapter
Excellence in Architecture



ZMM Architects and Engineers, in association with AECOM, is providing architectural and engineering design services for the Joint Interagency Training and Education Center (JITEC), an Army National Guard campus-style facility for training and operational mission support. Sited on 30 acres at the northern end of Camp Dawson between the Cheat River and the foot of Brier Mountain, this 283,000-SF project includes the design of a new operations building; expansion of the billeting facility; renovation of the training facility; creation of a new base entry checkpoint and visitor center; and design for walkway connectors between all the facilities.

The project began with a review of the existing base master plan, followed by a revision of the master plan concept. JITEC is a training and educational facility – the vision behind the site design and updated master plan is that of a college campus atmosphere. The clients goal was to create a campus environment that integrates existing buildings with new ones, which was accomplished by using compatible, yet distinct building materials.

The new facilities are designed to meet all anti-terrorism/force protection criteria and are slated for LEED-NC Gold Certification from the U.S. Green Building Council. The new 82,000-SF operations building is prominently sited as the main focal point upon entering Camp Dawson through the secure access control point and visitor's center, also designed by AECOM. The building's exterior complements its West Virginia setting. The entire building front, composed of glass and pre-cast concrete walls, is open and inviting with glazing that reflects the surrounding trees and hills.



Joint Interagency Training & Education Center



Security requirements for the command center influenced the design of the attached, copper-clad "black box" that is an homage to the native rock stratification seen throughout the state.

The building consists of four distinct areas: the Joint Operations Center; a suite of secure training rooms; base headquarters and JITEC administrative offices; and a 6,000 SF server and telecommunications room.

Entry to the Joint Operations Center (JOC) is provided by a secure mantrap adjacent to a dedicated security office. Built to SCIF standards, the JOC contains a state of the art command center housing 48 permanent work stations in a theater-style configuration facing a large video wall, flanked by conference rooms and offices for both officers and support staff. Within the JOC is a secure area consisting of workstations, offices, and two divisible conference rooms with secure video conferencing capabilities. The secure area construction dictates a windowless environment, requiring proper lighting and creative use of materials to create an agreeable work atmosphere.

The 180,000-SF billeting (hotel) expansion more than triples the facility size and increases the total capacity from 189 guest rooms to 600 guest rooms and suites. Designed to relate to the existing architecture with similar scale, materials, textures, and massing, the addition also brings in new elements, such as iconic glazed building corner elements, to integrate the design of the new operations building. A new dedicated lobby with terrazzo tile flooring leads to a monumental stair with terrazzo treads, open risers, and a glass/stainless steel railing for access to the open lounge areas on the second and third floors.

The lobby's design provides a hotel atmosphere, underscored by the new Liberty Lounge, an upscale bar and restaurant area, with wood finishes salvaged from the gymnasium floor in the existing headquarters building. The new six "executive suites", are designed to the full amenities of corporate hotels.

Construction & Facilities Management Office

WWARNG



LOCATION:
Charleston, WV

SIZE:
19,935 SF

COST:
\$3.5M

COMPLETION:
2008

CONTACT:
MAJ Dan Clevenger
WWARNG
1707 Coonskin Drive
Charleston, WV 25311
304.561.6539

AWARD:
2009 AIA Merit Award,
West Virginia Chapter,
Achievement in Architecture



The Construction and Facilities Management Office (CFMO) Expansion project will bring all of the operations of the CFMO together under one roof. The branches that will occupy this facility include: Director of Engineering, Environmental, Planning and Programming, Facility Operations & Maintenance, Business Management, Resource Management, and Design and Construction. This new facility is located slightly to the front, and adjacent to the existing facility, lending prominence to the new construction, and providing a new aesthetic to the entire complex.



This transitional space was designed to connect the two structures, while maintaining a connection to the outside through use of natural light, direct visual connections to the exterior, large volumes, irregular geometries, and the use of natural materials.

The entry design was coordinated with the Recruiting and Retention building to create an outdoor courtyard, along with new sidewalks, stairs and signage. The entry roof is sloped to provide a greater massing, while a lower canopy provides scale and protection from the elements. Large gathering and work spaces were located on the north elevation to take advantage of large expanses of glazing located to capture indirect light and views of Coonskin Park.



St. Albans High School

Kanawha County Schools



LOCATION:
St. Albans, WV

SIZE:
216,500 SF

COMPLETION:
2003

COST:
\$24M

CONTACT:
Dr. Ron Duerring
Superintendent
200 Elizabeth Street
Charleston, WV 25523
304.348.7732

AWARDS:
Impact on Learning Award
Effective Transformation

Education Design Showcase
Outstanding Building Design

American School & University
Outstanding Building Design



One outstanding feature of the completed renovation of St. Albans High School is its unique, inviting physical entryway and the aesthetically pleasing and functional commons/cafeteria area. The commons is a visual focal point of the school creating a natural flow from the front entrance, through the commons to the outside assembly/instructional area, it also serves as a connecting hub between the academic spaces and the physical education and auditorium areas.

Significant green space was retained and enhanced which providing an inviting and safe approach to the high school building. An outside amphitheater, located adjacent to the music and theater departments, provides ample space for music and drama productions as well as a gathering space for students. In response to the students need for more "outside living space" the rear dining plaza was created. It has a visual impact on the interior and provides a flexible learning environment for the students and educators.

The addition of an auxiliary gym, renovations to the auditorium complex, a new media center and other additions and improvements allow spaces for more extensive use by the community. Renovations to the auditorium resulted in a space that is educationally functional and is a source of pride for the students and the entire community. The renovation and additions include the razing of about 40% of the existing structure and the construction of the 124,000 SF of new facility. The scope of this extensive renovation included the replacement of the existing HVAC system, to include a new heating plant, a 500 ton chilled water plant, rooftop units and installation of one retrofitted high speed elevator.



St. Albans High School



Instructional spaces have been designed to be flexible, adaptable and accommodating for the more active, student oriented instructional programs and methods of the district. Classroom and other spaces are bright and welcoming for students and staff and appropriate space and equipment are provided to allow for the efficient and effective delivery of program objectives.

Responding to concerns from students, staff and the community, and due to the condition of existing science facilities, science wing was completely replaced with modern, functional and flexible space and equipment.

Provisions for new and emerging technologies were greatly enhanced throughout the building. The new media center is the central hub for technology and with the inclusion of an appropriate infrastructure, providing flexibility needed for the technology of the future. St. Albans High School was completed during the summer of 2003 and was occupied by the student body at the beginning of the 2003-2004 school year.



Girl Scouts of Black Diamond Council

Volunteer Resource Center and Girl Zone/Urban Camp



LOCATION:
Charleston, WV

SIZE:
27,928 SF

COST:
\$5M

COMPLETION:
Fall 2013

CONTACT:
Beth Casey, CEO
GSBDC
321 Virginia Street, W.
Charleston, WV 25302
304.345.7722

AWARDS:
2014 AIA Merit Award
West Virginia Chapter
*Achievement in
Architecture
in Interiors/Graphics*



The New Girl Scouts of Black Diamond Council Volunteer Resource Center and Girl Zone/Urban Camp is located on the West Side of Charleston, WV. The 24,650 SF project completely renovates and upgrades the existing buildings at 321 Virginia Street. The buildings were built in the early and mid-1900's, and were used as a car dealership showroom and parts building until 2008. By the time the Girl Scouts took possession of the building, it had fallen into a state of disrepair. The facility required environmental remediation, and the entire roof structure was damaged and had to be removed.

The Girl Scouts of Black Diamond Council purchased the vacant buildings in 2011 with the intent of converting them into a girl-centered facility for members and a volunteer-enrichment center for program resources and training. The program for the facility includes administrative offices, community/meeting gathering spaces, as well as a small hotel (Urban Camp) for Girl Scouts visiting Charleston. The Girl Scouts undertook the effort to transform the facility, creating an architectural style that would appeal to girls and young women, while utilizing colors and materials that would not become dated.

The main building brings all of the operations of the Girl Scouts of Black Diamond Council together under one roof and on one level. This building includes a volunteer meeting room, employee office space, flexible conference spaces, and a retail shop. The Virginia Street façade of the existing facility was removed, and more contemporary elements are utilized to speak to each of the functions. The Girl Zone/Urban Camp reflects a more residential/outdoor tone with the use of a wood veneer, while the retail store has floor to ceiling storefront.



The storefront is etched with images of girl scouts and scouting slogans. The storefront is backlit in the evening, allowing the entire façade to reflect the function of the building. The entry is accentuated with a more vertical element and signage, giving hierarchy to the various elements, while the office areas are recessed from the corner with smaller openings, and a masonry veneer. Each zone has a unique identity.

The adjacent Girl Zone/Urban Camp conveys the feeling of a hotel or hostel and offers a place that Girl Scouts can stay during a visit to Charleston. While the main entry to the building faces Virginia Street, the entry for the Girl Scouts will be at the rear of the building. A small addition was developed to create a "check-in" area similar to a hotel. Adjacent to the "check-in" area is a great room where troops can gather to cook, congregate, and socialize. The "hotel rooms" utilize a dormitory arrangement, while the finishes and furnishings will be more like a youth hostel than a camp. The rear of the Girl's Zone/Urban Camp will reflect a more traditional camp environment, and includes an outdoor dining area and a fire pit.

With the mixed-use functions of retail, office, and residential, this unique project will be a vibrant addition to the emergent West Side community. The modern aesthetic of the facility will appeal to Girl Scouts and reflect the one of the Girl Scout's Journeys – "It's Your World – Change It!"

Christ Church United Methodist

Educational Wing Renovation



LOCATION:
Charleston, WV

COMPLETION:
April 2013

CONTACT:
Rev. David Donathan,
Minister of Music & Arts
And Organist
1221 Quarrier Street
Charleston, WV 25301
304.342.0192 Ext. 210

AWARDS:
2016 AIA Merit Award
West Virginia Chapter
Achievement in
Architecture in Interior
Design



The education wing at historic Christ Church United Methodist was in need of modernization, both in infrastructure and aesthetics. ZMM's interdisciplinary team succeeded in meeting the challenges of creating the owner-requested "wow factor" in an existing building, and in coordinating construction that was phased while the building was continuously open to the public. ZMM coordinated asbestos abatement, multiple prime contracts and the owner's direct-pay items. Infrastructure design work included window replacement, new elevator, new variable refrigerant system and rooftop mechanical unit to serve the gymnasium, electrical panel and receptacle upgrades, emergency lighting and fire alarm systems.

The interior design reflects the church's various functions within the education wing, which include a daycare, classrooms, music and choir facilities, special teens area, and high quality decorative lighting in the Narthex. "The Growing Place" daycare features an expanded corridor with a winding path leading to each classroom. The classrooms are cheerful yet modern and functional, and there is a new kitchen and gathering space for parents and Sunday morning visitors. The expanded music and choir rooms were inspired by salvaged stained glass windows and provide higher levels of acoustics and storage. The lower level teen area, also known as the Wolfe-Omega Room, features hip, bright colors, kitchen, and special worship area.

Robert C. Byrd Regional Training Institute

WVARNG



LOCATION:
Kingwood, WV

SIZE:
148,066 SF

COST:
\$21M

COMPLETION:
2002

CONTACT:
MAJ Dan Clevenger
WVARNG
1707 Coonskin Drive
Charleston, WV 25311
304.561.6539



The Regional Training Institute at Camp Dawson is a new 148,066 square foot facility that will provide a setting for a variety of training classes, meetings, and conferences serving both military and civilian populations from the region and areas throughout the country. The facility includes classrooms, library, sleeping rooms, dining room, auditorium, swimming pool, Post Exchange and snack bar.

The Training Institute has a 400 Ton primary/secondary variable flow chiller water system, and an 8,800 MBH primary variable flow hot water system. The hot water system serves variable and constant value air handling units, fan coils, the swimming pool conditioner, and make up air units.



Client References

David Molgaard, City Manager
City of Charleston
501 Virginia Street, E.
Room 101
Charleston, WV 25301
304.348.8014

Greg Melton, Director of General Services
Capitol Complex Building
Building 1, Room MB-60
Charleston, WV 25305
304.558.2317

Rusty Kruzeloek, Ph.D., CEO/Tech Park Director
West Virginia Regional Technology Park
1740 Union Carbide Drive
So. Charleston, WV 25303
304.881.0436

MAJ Dan Clevenger
WV Army National Guard
1707 Coonskin Drive
Charleston, WV 25311
304.561.6446

Beth Casey, CEO
Girl Scouts of Black Diamond Council
321 Virginia Street, W.
Charleston, WV 25302
304.345.7722