



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

Proc Folder: 727647

Doc Description: EO: Third Party Peer Review Building Four

Proc Type: Central Contract - Fixed Amt

Date Issued	Solicitation Closes	Solicitation No	Version
2020-05-28	2020-06-24 13:30:00	CEOI 0211 GSD2000000005	1

BID RECEIVING LOCATION

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

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 WV PURCHASING
 DIVISION

VENDOR

Vendor Name, Address and Telephone Number:

ZMM, Inc. (dba ZMM Architects and Engineers)
 222 Lee Street, West
 Charleston, WV 25302
 304-342-0159

FOR INFORMATION CONTACT THE BUYER

Melissa Pettrey
 (304) 558-0094
 melissa.k.pettrey@wv.gov

Signature X

FEIN # 55-0676608

DATE June 23, 2020

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



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

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

Proc Folder: 727647

Doc Description: Addendum No. 1 EOI: Third Party Peer Review Building Four

Proc Type: Central Contract - Fixed Amt

Date Issued	Solicitation Closes	Solicitation No	Version
2020-06-12	2020-06-24 13:30:00	CEOI 0211 GSD2000000005	2

BID RECEIVING LOCATION

BID CLERK
 DEPARTMENT OF ADMINISTRATION
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ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: GSD2000000005

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

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

Addendum Numbers Received:

(Check the box next to each addendum received)

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

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

ZMM, Inc. (dba ZMM Architects and Engineers)

Company



Authorized Signature

June 23, 2020

Date

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

Revised 6/8/2012

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

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

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

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

DEFINITIONS:

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

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

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

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

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: ZMM, Inc. (dba ZMM Architects and Engineers)

Authorized Signature:  Date: June 23, 2020

State of West Virginia

County of Kanawha, to-wit:

23rd

Taken, subscribed, and sworn to before me this 10-6 day of June, 2020.

My Commission expires 10-6, 2023.



NOTARY PUBLIC



Purchasing Affidavit (Revised 01/19/2018)



June 23, 2020

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

**Subject: Building Four Renovations: Third Party Peer Review Services
GSD2000000005**

Dear Ms. Pettrey:

ZMM Architects and Engineers is pleased to submit the attached information to demonstrate our experience and our qualifications to provide professional design services for the peer review of the mechanical and elevator/lift conveyance systems for the renovation of Building Four. Established in 1959, ZMM is a Charleston based, full-service A/E firm, and is noted for design excellence and client focus. ZMM has extensive mechanical engineering experience at the West Virginia Capitol Complex, and our mechanical engineers have routinely assisted in resolving HVAC issues in collaboration with the General Service Division (GSD). This experience includes:

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

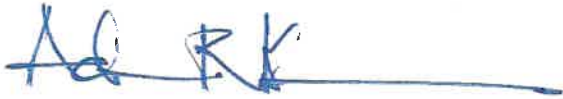
To supplement our mechanical engineering experience, ZMM will be partnering with Lerch Bates Inc. (LB) for this endeavor. LB was founded in 1947 offering specialized consulting services in the field of vertical transportation systems. LB's primary emphasis centers on the safe, efficient, and comfortable movement of people and materials. As an independent consulting and engineering firm, LB has provided its services on thousands of projects where expertise in elevator, escalator, and other vertical and horizontal transportation systems was required. ZMM and Lerch Bates previously collaborated on an elevator replacement project for WVU at the Engineering Classroom Building in Montgomery. The project involved the replacement of equipment for two traction elevators that served the seven-story facility. Additional team members will include Win Strock, who will assist with cost estimating. Mr. Strock has more than forty (40) years of experience as a contractor and consultant on commercial construction projects and has assisted ZMM with estimating on our recent experience for GSD.

Teamwork is the key to a successful Building Four Renovation project. To ensure this success, ZMM commits to working in an objective and collaborative manner with GSD staff, Perfido Weiskopf Wagstaff & Goettel (PWWG), and PWWG's consulting team – with a focus on meeting GSD's vision, budget, and schedule. ZMM has demonstrated the ability to

successfully collaborate with other design firms, including tvsdesign, AECOM, GAI, Terradon, Newcomb and Boyd, BSP, Potesta, Cooper Carry, Odell Associates, and Gensler.

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

Respectfully submitted,
ZMM Architects and Engineers



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



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Attachments: Capitol Complex Building 3 – HVAC Study

Building Four Renovations: Third Party Peer Review Services Concepts and Methods of Approach

Project Understanding

Building 4 is a stately 1952 limestone faced office building located at 112 California Avenue (intersection of California Avenue and Washington Street East), which is across the street from the East Wing of the Main Capitol Building. The entry to the building is a black marble entrance portal with no canopy. The entry leads to a vestibule that discharges into a marble lined lobby with a dark marble base and a lighter (tan) marble with horizontal veining above. The main entry is approximately 3' (6 risers) lower than the first floor. Both of the exit stairs as well as both elevators currently discharge through the main lobby, which creates a life safety hazard. Most of State Office Building 4 is currently vacant, although the General Services Division does occupy some space on upper levels.



Perfido Weiskopf Wagstaff & Goettel (PWWG) has been selected as the Architect of Record to assist with a renovation of Building Four, which will include improvements to the HVAC system and elevators/lifts. The intent of the current engagement is to have a Third-Party Peer Review performed for the mechanical (HVAC) systems and elevator/lift conveyances. This will include a review of the building commissioning specifications, as well as the development of cost opinions for various systems and improvements.

Our Team

Established in 1959, ZMM is a Charleston based, full-service A/E firm, and is noted for design excellence and client focus. ZMM has extensive mechanical engineering experience at the West Virginia Capitol Complex, and our mechanical engineers have routinely assisted in resolving HVAC issues in collaboration with the General Service Division (GSD). This experience includes:

- Resolving building pressurization issues in Buildings 5, 6, & 7.
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- Resolving heating and cooling issues at the Governor’s Mansion.

To supplement our mechanical engineering experience, ZMM will be partnering with Lerch Bates Inc. (LB) for this endeavor. LB was founded in 1947 offering specialized consulting services in the field of vertical transportation systems. LB's primary emphasis centers on the safe, efficient, and comfortable movement of people and materials. As an independent consulting and engineering firm, LB has provided its services on thousands of projects where expertise in elevator, escalator, and other vertical and horizontal transportation systems was required. ZMM and Lerch Bates previously collaborated on an elevator replacement project for WVU at the Engineering Classroom Building in Montgomery. The full design team will include:

Team Member	Role	Proposed Staffing
ZMM Architects & Engineers	Engineering Principal/PM	Bob Doeffinger, PE
	Mechanical Engineers	Sam Butzer, PE
		John Pruett, PE
		James Lowry, PE
	Elevator Consultant	Lerch Bates
	Cost Estimating	Win Strock

Concepts and Methods of Approach

ZMM has assembled a team with the relevant experience to provide a Third-Party Peer Review of the mechanical and elevator/lift conveyance systems to ensure that the design meets the expectations of the General Services Division. ZMM recommends commencing the project with a collaborative meeting to establish the expectations of GSD, as well as any proposed design criteria. The intent of the preliminary meeting will be to establish scope and expectations for the project, and to discuss potential mechanical systems that will be utilized.



At the completion of the conceptual design phase, and again at 50% and 90% construction documents, ZMM would meet with GSD staff as well as PWWG and their consultant team to review the design of the HVAC and elevator systems. ZMM would document the meeting with minutes. Following the meeting, ZMM/Lerch Bates would prepare a written report documenting progress, findings, and recommendations. ZMM would request a response to the report from the Architect and Engineer of Record to ensure that recommendations were considered and incorporated into the final documents.

ZMM routinely employs a similar internal peer review on HVAC renovation projects that we complete. The process that we have developed is intended to be collaborative and productive, with the intent of improving both the design and project delivery.



Our methodology for elevator renovation was developed to provide our clients with the knowledge and tools to efficiently upgrade their vertical transportation systems while meeting all code and life safety requirements. Initially we would review the present condition of all the vertical transportation and other related building systems. Our reporting allows us to communicate our evaluation discoveries to our clients regarding what is required to complete the project and the most cost-effective options for moving forward. We would assist GSD and PWWG in determining the appropriate scope of work and the proposed cost for the project. After the scope is determined we would provide a third-party peer review of the construction documents for the required improvements and communicate the review simultaneously with the HVAC review.

ZMM will ensure that the elevator/lift conveyance and HVAC portions of the Building Four Renovation will meet expectations – for quality, budget, operation, and schedule.

About ZMM Architects & Engineers



LOCATION:
222 Lee Street, West
Charleston, WV

CONTACT:
Phone 304.342.0159
Fax 304.345.8144
www.zmm.com



HISTORY

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

Post Design

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

Design

- Architectural Design
- Sustainable Design
- Interior Design
- Lighting Design
- Landscape Architecture

Engineering

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



Award Winning Design



2020

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



2019

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



2018

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



2017

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



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

2016

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



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

Award Winning Design



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



Firm Overview / Qualifications



LOCATION:

9780 S. Meridian Blvd.
Suite 200
Dublin, OH, 43017

CONTACT:

Phone 614.648.8961
lerchbates.com

HISTORY

Lerch Bates Inc. (LB) was founded over 64 years ago offering specialized consulting services in the field of vertical transportation systems. Since its beginning as a localized firm in Chicago, Illinois, LB has grown into an internationally recognized firm with regional and district offices throughout the United States, Canada, Europe, India, China, and the Middle East. During this time, we have also expanded our service offerings to include the specialties of façade access system design, and automated materials handling system design in addition to vertical transportation consulting services.

As a totally independent consulting firm, LB has provided its services on thousands of projects where expertise in lifts, escalators, façade access, materials handling and other vertical and horizontal transportation systems was required. We offer totally objective planning for every aspect of "our services" from design planning, traffic studies or preparing plans and tendering documents, to providing construction services for new or modernized complexes, evaluation of maintenance of existing facilities, and acquisition survey analysis.

LB is not a general engineering firm. We are concerned specifically with the transport of people and materials. Our talents, skills, and efforts are concentrated on projects which require transport of people or goods, façade access, and automated materials management and handling considerations. For clients requiring expertise in any or all of these areas, we are able to provide total solutions to meet architectural, operational, and organizational concerns. Clients are assured that any work performed by our staff has been accomplished by a specialist who is knowledgeable and experienced in his or her field.

LB is the oldest and largest independent consulting group of our kind, in our specialty with a total staff of over 200. LB staff include: Lift, Material Management and Handling, and Façade Access specialists, analysis specialists, CADD technicians, specification writers, construction managers, and administrative and clerical staff. LB places a strong internal emphasis on quality control and knowledge of local, national, and international codes. All Principal Consultants, Consultants, Project Managers, and Field Services Managers are QEI certified by the National Association of Elevator Safety Authorities (NAESA) which is the National accreditation agency in the United States. We are also members of the International Association of Elevator Engineers (IAEE) and the International Association of Elevator Consultants (IAEC).

Our depth of human resources in the lift fields provides our clients with the assurance that all tasks assigned to LB will be handled in a professional and timely manner.

PROJECT OFFICES

LB is incorporated in the State of Colorado and has project offices in 29 cities in the North America and 12 offices internationally specializing in providing consulting services in all aspects of planning, design, specifying, and construction.

The Colorado office is the LB Global Corporate Headquarters. This office was opened over 50 years ago. It has handled hundreds of projects including design, contract documents, and construction services for new projects, evaluation, contract documents, and construction services for modernization projects, clinical surveys of existing equipment, and continuing services for preventive-maintenance management.



LERCH BATES

Building insight

PHYSICAL RESOURCES

LB's staff is fully supported with the resources required to perform our assigned tasks, including in-house computer capabilities for traffic and queuing studies, etc.; word processing equipment; automatic lift performance monitoring equipment and reproduction equipment.

CADD services are provided from our Design Application Department. This group operates a variety of the latest software, including AutoCAD, Revit, Rhino, and NavisWorks software, and provides electronic drawings and information directly to our clients FTP sites.

In addition, the Corporate Headquarters office in Denver and the regional and district offices are served by an on-line computer system to facilitate the sharing of information between offices.

FINANCIAL

LB is a financially sound firm with excellent references. Bank, business, credit references, and other relevant data will be provided at your request.

GENERAL EXPERIENCE

Since 1968, our staff has been responsible for the recommendations for, and the inclusion of, over \$22,000,000,000 in lift, escalator, façade access and other vertical and horizontal conveyance systems. Virtually all projects require LB staff to analyze objectives and requirements for each project and establish alternative systems and architectural features to be further analyzed and compared for their ability to perform the functions required at the lowest life cycle costs.

We have also assumed the responsibility for providing the space, flow, and environmental considerations to the primary architect or planner.

EQUIPMENT EXPERIENCE

LB personnel have a comprehensive working knowledge of virtually all manual, semi-automatic, and automated systems that may be applicable to your project. We have the experience (planning, application and budgeting), to be of special value on projects such as yours. LB is generally able to work without the assistance of manufacturers or other vendors. This greatly decreases the "turn around".

State Office Building Renovation Experience



State Office Building No. 6: 8th Floor (Department of Education) 11,800SF



The partial renovation of the 8th Floor in State Office Building No. 6 on the State of West Virginia Capitol Campus was recently completed for the Department of Education. The renovation included the east half of the floor, the building core, the demolition of the existing construction, as well as significant hazardous material abatement.

ZMM, working with the State of West Virginia General Services Division, developed a strategy to renovate approximately 11,800 Sf of space for 55 employees. The design included a mix of private and open office space which responded to current workplace trends. ZMM also developed the interior furniture and equipment design with significant coordination with the Department of Education.

To improve the opportunity for daylighting, the enclosed office spaces line the building core while the systems furniture workstations inhabit the large room adjacent to the perimeter windows. 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 agency suite has a separate reception area off the elevator lobby with a large conference room which helps divide each open office area. In addition, renovations to the building core consisted of elevator lobby upgrades, a large breakroom, restroom ceilings & lighting and significant upgrades to the mechanical and electrical systems. Of those, the elevator lobby renovations would have been the most significant, creating a consistent look and level of finish at each entry point.

State Office Building No. 6: 5th Floor (Department of Commerce) 4,000SF

The partial renovation of the 5th Floor in State Office Building No. 6 on the State of West Virginia Capitol Campus was recently completed for the Department of Commerce. The renovation included a partial renovation of west half of the floor and the demolition of the existing construction. ZMM, working with the State of West Virginia General Services Division, developed a strategy to renovate approximately 4,000 Sf of space for 12 employees which included a large office for the Cabinet Secretary. ZMM also developed the interior furniture and equipment design.

State Office Building Renovation Experience



State Office Building No. 6: Floors 2-3 (Department of Education) State Office Building No. 6: 4th Floor (Division of Personnel) 66,000SF

The renovation of the floors 2-4 in State Office Building No. 6 on the State of West Virginia Capitol Campus were originally designed for the Department of Education and the Division of Personnel. Education would occupy floors 2 & 3 while Personnel would reside on the 4th floor. The renovation was to include demolition of the existing construction, as well as significant hazardous material abatement.



ZMM, working with the State of West Virginia General Services Division, developed plans to renovate approximately 44,000 Sf of space for 187 employees for the Department of Education which included a large executive suite for the State Superintendent's staff on the 3rd floor. The renovation also included approximately 20,000 Sf of space for 78 employees for the Division of Personnel along with a 2,000 SF separate tenant space. Each plan included a mix of private and open office space which responded to current workplace trends. ZMM also developed the preliminary interior furniture and equipment design with significant coordination with both state agencies.

To improve the opportunity for daylighting, the enclosed office spaces line the building core while the systems furniture workstations inhabit the large room adjacent to the perimeter windows. 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. Each side of the building has a separate reception area off the elevator lobby with a large conference room which helps divide each open office area. In addition, renovations to the building core would have consisted of elevator lobby upgrades, a large breakroom, restroom ceilings & lighting and significant upgrades to the mechanical and electrical systems. Of those, the elevator lobby renovations would have been the most significant, creating a consistent look and level of finish at each entry point.

State Office Building Renovation Experience



State Office Building No. 5: Floors 7-9 (Division of Highways) State Office Building No. 6: 7th Floor (Department of Education) 88,000SF

The renovations in State Office Building No. 5 & No. 6 on the State of West Virginia Capitol Campus were recently completed for the Division of Highways and the Department of Education. Highways would occupy floors 7-9 in Building No. 5 while Education would reside on the 7th Floor of Building No. 6. The renovation was conducted in two phases and included the demolition of the existing construction, as well as significant hazardous material abatement.

ZMM, working with the State of West Virginia General Services Division, developed a strategy to renovate approximately 66,000 Sf of space for 271 employees for the Division of Highways which included two large training areas on separate floors and the relocation of their main data hub room. The renovation also included approximately 22,000 Sf of space for 87 employees for the Department of Education which included a large executive suite for the State Superintendent's staff. The design included a mix of private and open office space which responded to current workplace trends. ZMM also developed the interior furniture and equipment design with significant coordination with both state agencies.

To improve the opportunity for daylighting, the enclosed office spaces line the building core while the systems furniture workstations inhabit the large room adjacent to the perimeter windows. 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. Each side of the building has a separate reception area off the elevator lobby with a large conference room which helps divide each open office area. In addition, renovations to the building core would have consisted of elevator lobby upgrades, a large breakroom, restroom ceilings & lighting and significant upgrades to the mechanical and electrical systems. Of those, the elevator lobby renovations would have been the most significant, creating a consistent look and level of finish at each entry point.



WV State Capitol Roof Replacement



LOCATION:
Charleston, WV

COMPLETION:
2016



The West Virginia State Capitol Building was constructed in 1924-1932 and is listed on the National Register. The scope of work includes replacement of the roof on connectors and roofs above as well as the base of the dome. This project started with an in-depth study of existing drawings and site conditions and a site visit to the Capitol to ascertain the actions necessary to provide the new roof system.

The investigation included:

- Review all Roofing Components for Integrity/Ability to Control Moisture Collection/Removal
- Conduct Destructive Testing (Multiple Roofing/Flashing Systems?)
- Hazardous Material Testing of Components (Paint, Mastic, Insulation, Caulking)
- Review all Points of Roof Access: Walkways, Walkway Pads, Stairs
- Work with GSD to Develop Recommendations for the Roofing System
- Consider Building Envelope Performance/Insulation Requirements

All the roof system components will need to be reviewed for their integrity and ability to control moisture collection and removal from the building's roof. The components that are to be reviewed will include parapet walls, railings, wall conditions, colonnades, roof penetrations, roof drains, roof equipment, and walking surfaces. Investigative holes will need to be cut into the existing membrane to identify conditions of insulation, roof deck and any remains of former roofing materials and flashing systems. Test of roofing materials will need to be made for any possible hazardous materials. Our ability to provide comprehensive design solutions will be advantageous as it relates to mechanical equipment curbs and structural supports.

A report will be prepared and presented showing findings and recommendations from the investigation of all the roof conditions. The report will include recommended option for the roof membrane material, discussion of repairs to roof components, as well as any required repairs to the roof deck. Also included in the report will be a preliminary cost estimate including cost differences for each proposed option. ZMM will provide construction observation services and will work with the owner's representative during the construction process. We will be responsible for reviewing all shop drawings and questions that occur during the project. ZMM will also participate in all progress meetings and make site visits on a regular basis. ZMM will remain available to assist the state throughout the warranty phase of the project.



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 the 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.

Cultural Center - Great Hall Lighting Wiring System



LOCATION:
Charleston, WV

COMPLETION:
2011

CONTACT:
Randal Reid Smith
Cultural Center Director
1900 Kanawha Blvd., E.
Capitol Complex, Building 9
Charleston, WV 25305
304.558.0220



ZMM completed the Great Hall Wiring System located at the Cultural Center on WV State Capitol Complex. The existing wiring and conduit system was approximately thirty-five years old and in need of drastic improvements. The existing conditions that were observed included the conduit and outlet boxes were mounted on the underside of the existing grating above the ceiling, the dimming circuits shared a common neutral, bad fixture connections and cables.

ZMM performed a complete survey and drawings of the existing conduit, wiring, and dimming systems. The circuiting requirements were confirmed and ZMM proposed new correction methods with a dimming equipment manufacturer.

The bidding documentation included the following:

- Drawings to indicate 141 dimmer circuits, conduit, and wiring to be removed back to the existing dimmer cabinet.
- Drawings to indicate new conduit and wiring requirements run above the existing grating with new twist-lock recap tacles for the lighting conditions.
- Drawings and details to indicate rewiring and cleaning methods to be used for 192 light fixtures.
- Specifications for all electrical work to be performed in accordance with National Electrical Code and all applicable codes.



LOCATION:
Pittsburgh, PA

COMPLETION:
On-Going through 2021

CONTACT:
Joseph Beerans
412.683.3230 x219
jbeerans@desmone.com

OWNER:
Desmone Architects

The project includes the modernization and design of a total of four (4) elevators, located at the Arrott Building in Pittsburgh, Pennsylvania. Two (2) elevators were subjects of modernization and two (2) elevators were new design. The Arrott Building is listed in the National Register of Historic Places. Serving low, mid, and high-rise levels, the design team performed an analysis of building traffic and designed with both new equipment and the modernization of existing elevating systems. Service for the building will be taken into account when designing both new and modernized equipment.

A traffic analysis was completed based on building usage. Design is ongoing, and many challenges are faced to design with minimal impact to the building and structural components. Alignment of new equipment with existing building constraints creates a need for resolve. The modernization of existing equipment will take into account current building aesthetics, performance to the building, and equipment reliability. As construction and design for the building is ongoing, the design team has worked closely with the Owner to coordinate new and recurring design resolutions.



Albert Kahn Building



LERCH BATES

Building Insight

LOCATION:
Columbus, OH

COMPLETION:
On-Going

CONTACT:
Monique Becker

OWNER:
The Platform LLC

The project includes the design of seven (7) elevators, including six (6) passenger elevators and one (1) service elevator, in the Albert Kahn Building, located in Detroit, Michigan. The building was listed on the National Register of Historic Places in 1980 and serves office and residential applications. The building was constructed in 1930 and serves low, mid and high-rise levels. The design team was tasked by evaluate existing equipment and need for new or additional vertical transportation necessary to meet the building's tenants.

The analysis of the building was performed under various usage scenarios based on different building applications and restrictions. Additionally, the existing equipment was assessed with compliance with the Americans with Disabilities Act, performance, and equipment reliability. The modernization of existing equipment will take into account current building aesthetics, performance to the building, and equipment reliability. The design team has worked closely with the Owner to minimize impact to the building during the course of construction.



LeVeque Tower Maintenance Audit



LERCH BATES

Building Insight

LOCATION:
Columbus, OH

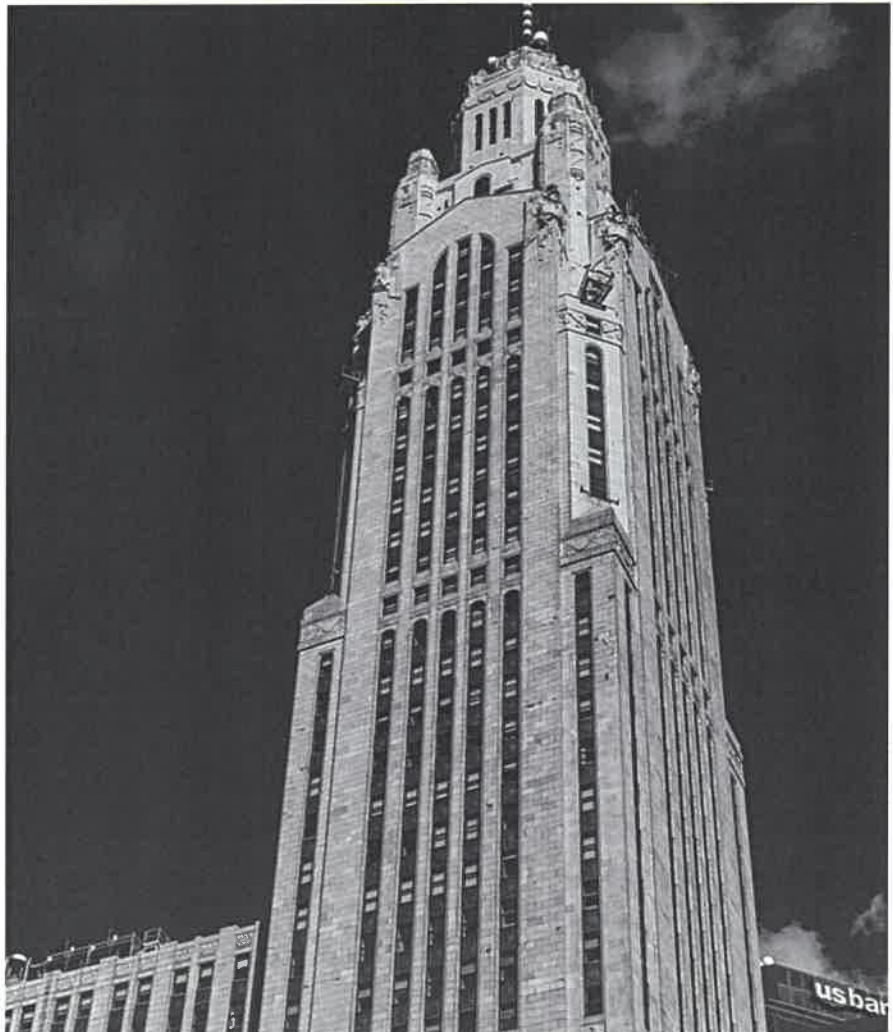
COMPLETION:
2018

CONTACT:
Daniel O'Harra

OWNER:
Lawyers Development
Corporation

The project includes a Maintenance Audit of eleven (11) Elevators and their respective machine rooms in LeVeque Tower—a historical high-rise in downtown Columbus, OH. LeVeque Tower was added to the U.S. National Register of Historic places in 1975. The elevators consist of Low, Mid, and High-rise passenger and service elevators, serving mixed-use applications including a hotel, apartments, condominiums, offices, and a restaurant.

A review of the maintenance being performed on the elevating equipment led to increased efficiency of the elevators as well as reliability. This maintenance audit was performed in the midst of a major reconstruction project, to modernize the building's finishes and function. The design team has worked closely with the Owner to phase the work in such a manner to minimize any impact to the building occupants.





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

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

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

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

Building 5 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
- Huntington High School
- Cabell-Midland High School



Kanawha Valley Bank

Elevator and Fire Alarm Upgrades



LOCATION:
Charleston, WV

COMPLETION:
2014

COST:
\$750,000

Pat McGivern
Real Estate Resources
500 Virginia Street, East
Suite #950
Charleston, WV 25301
304-345-9348

The client had obtained bids from four elevator companies for upgrading the elevators for the high-rise building and requested ZMM evaluate the bids and prepare construction documents for the project. ZMM performed a building electrical, mechanical and fire alarm survey to determine the feasibility of the proposed elevator upgrade. ZMM then prepared a detailed tabulation of the bids highlighting the pros and cons of each proposal and aided the client in determining which company to use for their upgrade.

ZMM met with the local building code officials and the fire department to determine the extent of the electrical, mechanical and fire alarm renovation necessary to support the elevator renovations. It was determined that the modifications to the electrical feeds to the elevators, new penthouse heating and air conditioning, elevator shaft smoke evacuation and replacement of the existing high-rise fire alarm system were necessary. ZMM prepared bidding and construction documents for the electrical upgrades, new elevator penthouse heating and air conditioning systems, an elevator shaft smoke evacuation system and a new addressable high-rise fire alarm system for the building.





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

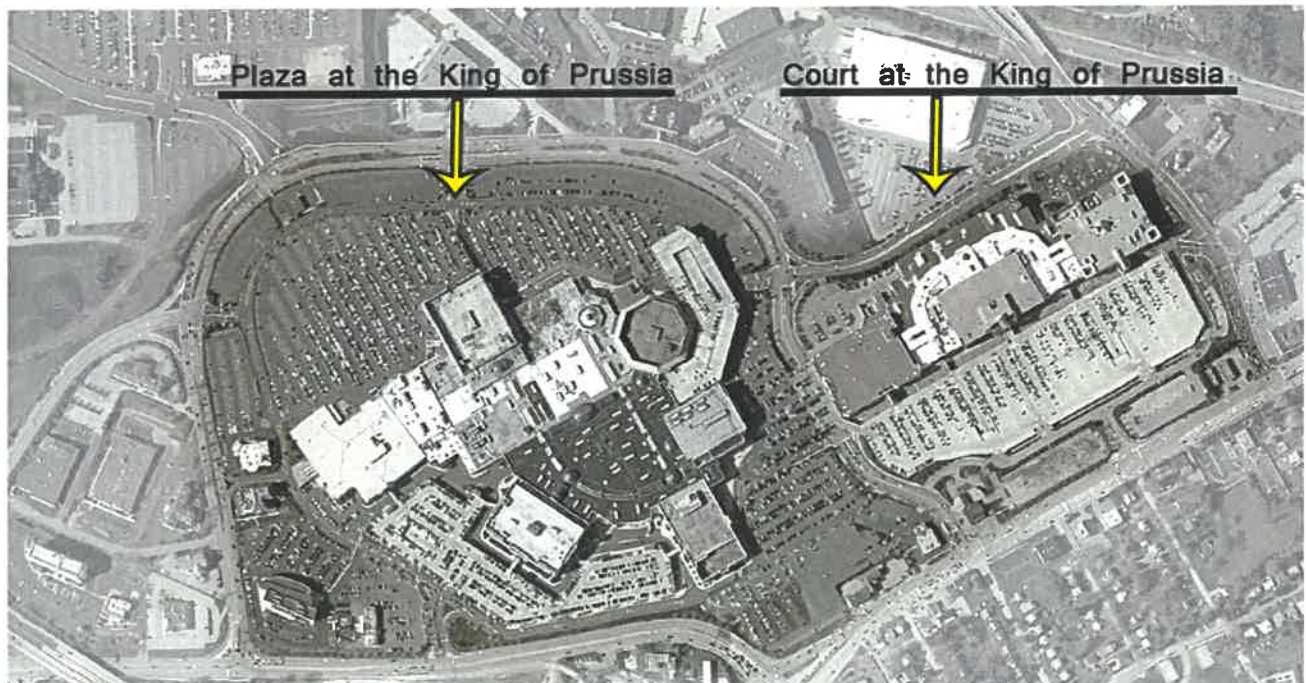
MEP Services

- 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



Robert C. Byrd Regional Training Institute

WVARNG



LOCATION:
Kingwood, WV

SIZE:
148,066 SF

COST:
\$21M

COMPLETION:
2002

CONTACT:
Todd Reynolds
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.



Charleston Coliseum & Convention Center



LOCATION:
Charleston, WV

SIZE:
283,000 SF

COMPLETION:
2018

COST:
\$75M

CONTACT:
Jim Smith, Acting Director
200 Civic Center Drive
Charleston, WV 25301
304.345.1500

AWARDS:
2019 AIA Honor Award
West Virginia Chapter

2019 AIA Citation Award
West Virginia Chapter

2019 AIA People's Choice
West Virginia Chapter



The Charleston Coliseum & Convention Center (formerly named Charleston Civic Center) Expansion and Renovation is a transformational project for both the city of Charleston and West Virginia. Our team was influenced by 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 Coliseum & Convention 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 Coliseum & Convention Center



The renovated facility is a building that emerges from this iconic landscape, with the architecture and topography working together. The Coliseum & Convention Center also has 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 was to create separate entries and identities for the arena and convention center. This allows 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 is 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 transforms the southeast to the middle of the northern zone of the site, the existing building mass still dominates 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 was 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 transform the look and feel of the center into a fun and festive landmark.

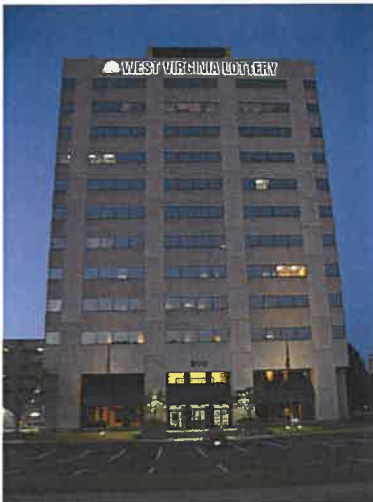
West Virginia Lottery Headquarters

Office Building and Parking Garage



LOCATION:
Charleston, WV

CONTACT:
John Myers, Director
900 Pennsylvania Ave
Charleston, WV 25302
304.558.0500



The project is an extensive renovation of an existing 13-story office building and 7-story parking garage in downtown Charleston, WV. The building is currently owned and operated by the WV Lottery but also houses many other state government agencies.

Major renovations within the office building consist of the demolition and renovation of three existing tenant floors, the relocation of the existing fitness center and replacement of the existing roof. The West Virginia Division of Insurance is being relocated from their existing, outdated office space to floors 7, 8 & 9. Off the newly renovated elevator lobbies on each floor is a reception area which leads to an interior space primarily constructed of enclosed offices to better suit current department requirements. To provide contiguous floor space for the Division of Insurance an existing tenant space on the 6th floor is being demolished and renovated into the new fitness center located across from the existing Café. Construction on the roof includes the removal and replacement of the existing roof insulation and membrane and the installation of new roof davits and stainless steel guardrail meeting current OSHA requirements.

The existing precast concrete parking deck will be undergoing a widespread renovation including structural repairs and restoration, major electrical upgrades and an addition to the existing storage warehouse. After vast investigative work it was determined that bearing pads need to be replaced under the existing concrete double-tee framing members, concrete structure and topping slabs needed repair and concrete spandrel panels required epoxy injection to repair extensive cracking. Horizontal driving surfaces are receiving new waterproofing, sealant joint replacement and restriping. The circulation connector between the office building and the parking deck is in structural repair also, requiring partial demolition and reconstruction of the existing steel deck and concrete floor slabs. Electrical improvements will consist of new LED lighting throughout and additional pole fixtures on the top level along with power and life-safety upgrades. The one-story storage warehouse located underneath the existing parking deck is being increased by approximately 1,800 sf. The addition will consist of masonry exterior walls clad in EIFS with a sloped steel-framed roof and single-ply membrane system.

Wood County Justice Center Renovation



LOCATION:
Parkersburg, WV

SIZE:
32,000 SF

COST:
\$5M

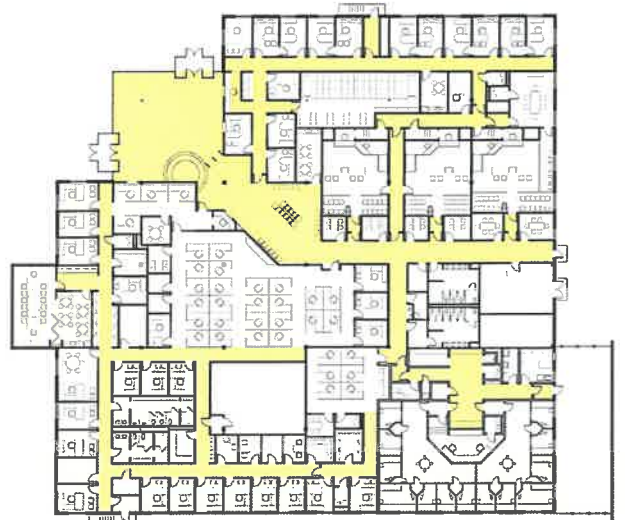
COMPLETION:
2011

CONTACT:
Mr. Blair Couch
Commissioner
No. 1 Court Square
Suite 205
Parkersburg WV 26101
304.424.1984
dbc@woodcountywv.com



This project was an extensive renovation of a 15 year old, 32,000 square foot, single story office building located in downtown Parkersburg, West Virginia. The building was purchased by the Wood County commission with the purpose of bringing together 3 government functions that had outgrown the 3 separate buildings that they occupied.

The renovated building consists of offices and 3 Courtrooms for the County's Magistrate Court system, public service windows for document pick-up and payment of fines, offices for the Sheriff's Department and Home Confinement and a 12-hour Inmate Holding Center.



Due to the building's new use, the interior was completely demolished leaving only the shell. The building's main entrance was relocated and redesigned to provide a new, more prominent identity to the building and to align with the new parking area created by the demolition of the adjacent existing magistrate court building. The old HVAC system was removed and replaced with a more energy efficient system and new, energy efficient lighting was installed. The project was designed around the U.S. Green Building Council's New Construction and Major Renovation Guidelines and is LEED Silver Certified.

St. Margaret's Judicial Center - 3rd Floor Renovation

Jefferson County Commission



LOCATION:
Charles Town, WV

SIZE:
7,000 SF

COMPLETION:
2017

CONTACT:
Bill Polk
Director of Maintenance
Jefferson County Commission
128 Industrial Blvd.
Kearneysville, WV 25430
304.728.3355



St. Margaret's Judicial Building is a three-story judicial building located in downtown Charles Town, West Virginia. The brick building was constructed in 1909 and has been updated throughout the years. The magistrate courts are located in this building. ZMM Architects and Engineers renovated the 7,000 square foot third floor to accommodate a bigger courtroom, more efficient office and meeting space, and increased security.

The main courtroom received security upgrades, an expanded jury area, and an enlarged visitor seating area. The office space was renovated to allow the judge easy access to the courtroom, while maintaining a secure path. The elevator was reconfigured to allow the judge direct, secured access to his office. An expanded waiting area and two attorney/client rooms were provided to meet the needs of the new court. An upgraded jury room was added with direct access from the courtroom. The existing restrooms were renovated for ADA accessibility.

The low-budget renovation was possible by working closely with the owner, using existing stair and elevator circulation patterns, and utilizing the existing structure.

Construction & Facilities Management Office Expansion

WVARNG



LOCATION:
Charleston, WV

SIZE:
19,935 SF

COST:
\$3.5M

COMPLETION:
2008

CONTACT:
Todd Reynolds
Deputy Branch Chief
WVARNG
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 brings all of the operations of the CFMO together under one roof. The branches that 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.



Goodwill Prosperity Center

Historic Renovation



LOCATION:
Charleston, WV

SIZE:
10,200 SF

COMPLETION:
2015

COST:
\$960,000

CONTACT:
Cheri Bever, President
Goodwill Industries
215 Virginia Street, W.
Charleston, WV 25302
304.346.0811



Goodwill's newly renovated Prosperity Center is located on Virginia Street (West) in Charleston. This facility will help prepare members of the community for the workforce, and will expand Goodwill's outreach opportunities. Inside the facility is several classrooms, a computer room, and a Career Center that is equipped with all the tools needed to prepare and apply for a job. A spacious and colorful lobby provides a relaxed atmosphere for visitors. Inside the center is a "Suited for Success" room where work-appropriate clothing will be available to those who need it.

The building, which was once the Charleston Transit Authority's bus garage, underwent a major exterior transformation. Layers of stucco were removed to open up the old garage bays, and glass was infilled into these openings to give the center a tremendous amount of natural light. The original brick was exposed, repointed, and painted. The improvements made to the exterior showcase the historic nature of the building while upholding the modern amenities needed for today.

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*

Interior Before Pictures



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!"

Adam R. Krason, AIA, LEED AP, ALEP



Role
Principal

Professional Registrations

Registered Architect (WV, OH, KY, VA, MD, NJ)
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 Coliseum & Convention Center, Charleston, WV

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

Education

Bachelor of Architecture, The Catholic University of America, 1998

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

Employment History

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

Civic Affiliations

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

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

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.

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

Morgantown Readiness Center (WVARNG), Morgantown, WV

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

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

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

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.

Edgewood Elementary School, Charleston, WV

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

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

2019 WV AIA Honor Award Charleston Coliseum & Convention Center, Charleston, WV

2018 WV AIA Citation Award Charleston EDGE, Charleston, WV

2017 WV AIA Merit Award Logan-Mingo Readiness Center, Holden, WV

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

2015 WV AIA Merit Award Edgewood Elementary School, Charleston, WV

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

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

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

Charleston Coliseum & Convention Center, Charleston, WV

Mr. Doeffinger was the mechanical project engineer on the expansion and renovation to the Charleston Civic Center project. The \$75M, 283,000 SF design-build project was a collaboration with tvsdesign and BBL Carlton. The design commenced in the spring of 2015, and construction was completed in October 2018. The mechanical design is expected to reduce the energy requirements defined by ASHRAE 90.1-2013 by an estimated 25% and extensive water savings will be shown. The project includes a new chilled and hot water central plant with extensive replacement and upgrades to the facilities existing mechanical systems. Multiple phases of construction will allow the Civic Center to remain operational throughout the construction progress.

Education

Master of Science Architectural Engineering, 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, Bridgmont Community and Technical College
- City of Pt. Pleasant, WV – 2nd Ward Councilman for 20 years

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

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

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

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

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

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

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

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

The Plaza at King of Prussia, 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.



BILL MOORE
Consultant

Elevator Consulting Group

Bill Moore began working for Lerch Bates in 2016 and has over 6 years' experience in the Vertical Transportation Industry. He is currently working in the Lerch Bates Columbus Ohio office, participating in the conceptual planning, design, construction administration, audits, surveys, inspections, and modernization projects for vertical transportation systems (elevators, escalators, moving walkways, freight lifts, platforms, dumb-waiters, etc.). His responsibilities include overseeing project organization, scheduling, coordination, deliverables, billing and collections. In addition, Bill manages assigned projects to assure completion for multiple deadlines, and that milestones are met on time and in a professional manner, while meeting constantly changing priorities. Previously, Bill worked for Oracle elevator as a General Manager in Ohio.

PROJECT RESPONSIBILITIES

As a Consultant, Bill is accountable for establishing project objectives, schedule and deliverable requirements and his main job functions as following:

- **Perform all aspects of client projects for which assigned** which include but are not limited to Site and equipment surveys, Maintenance audits, Maintenance management services, Inspection of equipment, controllers, machine rooms, pits, shafts, etc., Modernization of existing equipment/facilities to include analysis and specifications and New building analysis and design services (CD, DD, SD, CA, etc.)
- **Monitor and control project** resources and provide direction of LB personnel to ensure projects are completed on schedule, meet quality standards, and are within budget. Meet or exceed financial goals set by management.

RELATED EXPERIENCE

- Ohio State University – Columbus, OH
 - Smith/Steeb
 - Park/Stradley
 - Bradley
- Downtown YMCA – Columbus, OH
- Mt. Vernon Towers – Columbus, OH
- Worthington Education Center – Columbus, OH
- Ohio Department of Public Safety – Columbus, OH
- Department of Education – Columbus, OH
- St. Lukes Hospital – Maumee, OH
- Summit One – Cleveland, OH
- Burlington Coat Factory - Multiple Locations
- AT&T – Multiple Locations
- Department of Administrative Services - Columbus, OH
- 11 Buttles Ave – Columbus, OH
- Columbus School District – Columbus, OH
- Promedica – Toledo, OH
- Euclid Beach Properties – Cleveland, OH
- Pictoria Towers – Cincinnati, OH
- Lexington Hilton Downtown – Lexington, KY
- PNC Towers – Ft. Wayne, IN
- Springhill Suites – Cincinnati, OH
- Jaycee Arms Apartments – Columbus, OH
- 309 Vine St. – Cincinnati, OH
- Dublin retirement Village – Dublin, OH

EDUCATION

- Navy. A-School
- Certified Product Manager/Marketing Manager
- AIPMM



DAVID BORCHERS

**Project Manager
Ohio Region**

Elevator Consulting Group

David Borchers is Project Manager for the Ohio Region of Lerch Bates. With over 2 years' experience in the Vertical Transportation Industry, he serves as valuable point of contact for those associated with ongoing projects. Tracking client issues and seeking resolve, he helps solve an array of issues utilizing his engineering background and critical-thinking skills—proving valuable to Lerch Bates and their associates. Prior to joining Lerch Bates, David worked as a Project Manager and Engineer for E.P. Ferris and Associates, Inc. in Columbus, Ohio, bringing 13+ years of Engineering experience, including 3+ years of Project Management in and around Roadway Design and Construction. David is an appointed leader, always seeking to be challenged and thrives on seeing the progression of a project through completion. His proven ability demonstrates strong communication skills and the ability to establish rapport with clients and coworkers. Above all, he takes personal accountability and initiative in getting the job done. His role involves participation in many of the Ohio Region projects from Requests for Proposals, to Final Review, including: Data-Analysis, Specifications, Attending/Hosting meetings, Maintenance Audits, Drawing Examination, Invoice Review, and Performance Evaluations, among many others.

PROJECT RESPONSIBILITIES

As a Project Manager, David is responsible for maintaining control of the progress of multiple projects. Highly organized and detail oriented, many of his responsibilities include:

- **Serving as liaison between Consultant and Client**, responding timely to client request and inquiries, facilitating the client's expectations and needs, assisting with resolving challenges relating to vertical transportation as an advocate for the client.
- **Involvement with the following:**
 - Vertical Transportation System Studies
 - Design, Contract Documents, and Construction Services for Vertical Transportation Equipment
 - Vertical Transportation Maintenance Evaluations
 - Due Diligence Studies
 - Maintenance Management

RELATED EXPERIENCE

- | | |
|--|--|
| The Ohio State University – Columbus, OH <ul style="list-style-type: none">o Dreesse, Math, Hitchcock, Scotto Bradley Hallo OSU East Towero OSU – Paterson, Baker, Canfield | Nationwide Insurance Plaza I and III – Columbus, OH
Vern Riffe Center – Columbus, OH
CRAA Elevator Modernizations – Columbus, OH
Dayton VA Building 330 – Dayton, OH
UK Research Building, Phase 2 – Lexington, KY
Berkshire Condominiums – Cleveland, OH
200 Public Square – Cleveland, OH
Stark County Modernizations – Canton, OH
City of Dayton Safety Building – Dayton, OH |
| BGSU – Maurer Hall, Bowling Green, OH | |
| University of Akron Elevator Modernizations – Akron, OH | |
| ProMedica Healthcare Systems – Toledo, Ohio | |
| CampusParc Maintenance Management – Columbus, OH | |

EDUCATION

The Ohio State University, Columbus, OH, Bachelor of Science, Civil Engineering: Structures
Columbus State Community College, Columbus, OH, Associate of Arts and Sciences, Architecture



SPENCER WILLIAMS CSI
Regional Manager
Ohio Region

Elevator Consulting Group

Spencer Williams is one of the consultants of the Ohio Region for Lerch Bates participating in the conceptual planning, design, construction administration, audits, surveys, new construction and modernization projects for vertical transportation systems (elevators, escalators, moving walkways, freight lifts, platforms, dumb-waiters, etc.). His responsibilities include overseeing project organization, scheduling, coordination, deliverables, billing and collections. In addition, managing assigned projects to assure completion for multiple deadlines, and milestones are provided on time, in a professional manner, while meeting constantly changing priorities. Spencer has over 8 years experience in the Vertical Transportation Industry. Prior to joining Lerch Bates, Spencer worked for KONE Elevator & Escalator as New Equipment Sales Executive and ThyssenKrupp Elevator as an Account Manager in both Service Sales and New Construction Sales.

PROJECT RESPONSIBILITIES

As a Regional Manager, Spencer is accountable for establishing project objectives, schedule and deliverable requirements and his main job functions as following:

- **Perform all aspects of client projects for which assigned** which include but are not limited to site and equipment surveys, maintenance audits, maintenance management services, survey of equipment: controllers, machine rooms, pits, shafts, etc., modernization of existing equipment/facilities to include analysis and specifications and new building analysis and design services (CD, DD, SD, CA, etc.)
- **Monitor and control projects** resources and provide direction of LB personnel to ensure projects are completed on schedule, meet quality standards, and are within budget. Meet or exceed financial goals set by management.

RELATED EXPERIENCE

80 On The Commons – Columbus, OH
 Crown Plaza and Loft Hotel – Columbus, OH
 Department of Administrative Services – Columbus, OH
 - North High Complex
 - Vern Riffe Center
 La Quinta Inn and Suites – Cincinnati, OH
 Moreland Courts – Cleveland, OH
 Mount Carmel East Hospital - Reynoldsburg, OH
 Mount Carmel Grove City Hospital – Grove City, OH

Nationwide Children’s Hospital – Columbus, OH
 Nationwide Corporate Real Estate – Various Locations
 - 18th Street Office and Garage
 - Behavioral Health Pavilion
 - Conference & Data Center
 - West Energy Plant
 Parks Edge Condominiums – Columbus, OH
 Port Columbus International Airport - Columbus, OH
 UK Healthy Kentucky Research Building – Lexington, KY

EDUCATION

Bachelor of Science in Business Administration, The Ohio State University, Specialization in Finance and Accounting.

MEMBERSHIP

Construction Specifiers Institute, Columbus Chapter – New Membership Chairperson



Samuel Butzer, PE, LEED AP BD+C



Role

Mechanical Project 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), Fire Protection and Plumbing systems. He has been responsible for an extensive range of projects that include Hospitals, Civic Complexes, Laboratories, Medical and Dental Office Buildings, Retail, Military Installations, Churches, Restaurants, K-12 Schools, Higher Education Facilities, Pharmaceutical Manufacturing, Natatoriums and Historical Renovations.

Mr. Butzer began his career in engineering with a mechanical contractor located in Wisconsin. His collective engineering experience includes projects that were design-build, design-assist and plan & spec. His background in engineering and 3D BIM design and coordination has provided him with extensive experience in the "real world" of HVAC and piping constructability. That experience has forged him into a leader at the integration of all construction disciplines into a multitude of building types and space constraints.

Mr. Butzer's dedication to the community and his civic affiliations demonstrates a strong connection to the engineering principles of energy efficiency, sustainability, occupant comfort and health.

Project Experience

Marshall University - Smith Hall, Huntington, WV

There was an existing dual duct (hot deck / cold deck) HVAC system, served by a single AHU with chilled water and electric heat in the basement of the building. All of the existing dual duct dampers and thermostats were pneumatic, and most were non-functional. The existing AHU had recently been retrofitted with a modulating multiple fan system. The owner had been receiving multiple complaints regarding temperature and humidity control within the building. Smith Music Hall is comprised of classroom spaces, office spaces, rehearsal spaces, and the building housed quite a few pieces of expensive musical equipment.

ZMM chose to have all of the hot deck ductwork demolished, and new VAV terminal units with SCR electric reheat were

Education

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

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

Employment History

2018 - Present, Board of Directors, ZMM

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 of West Virginia State Chapter
- United States Green Building Council (USGBC), Board Member of West Virginia State Chapter
- Marshall University Engineering Advisory Board Member
- Kanawha City Community Association Board Member

provided within the reused, resealed, reinsulated cold deck ductwork. Additional zones were added for occupant thermal comfort, and the majority of the existing low pressure ductwork was reused. The existing electric heater (hot deck) in the AHU was removed, and a smaller electric duct heater was installed in the discharge ductwork since reheat was being provided at the new VAV boxes. ZMM provided a gas-fired, duct mounted humidifier for humidity control. New Building Automation controls were added and connected to the existing campus system. The AHU was changed from constant volume, to true variable air volume control, saving a significant amount of fan energy for the owner.

In addition to the HVAC upgrades listed above, the building acoustics were improved by providing sound absorbing panels, and sound absorbing paint within the existing rehearsal spaces. A majority of the existing ceilings were replaced, and the majority of the lighting was upgraded to LED.

Charleston Coliseum & Convention Center, Charleston, WV

Mr. Butzer was the mechanical project engineer on the expansion and renovation to the Charleston Civic Center project. The \$75M, 283,000 SF design-build project was completed as a collaboration with tvsdesign and BBL Carlton. The design commenced in the spring of 2015, and construction is complete in October 2018. The mechanical design is expected to reduce the energy requirements defined by ASHRAE 90.1-2013 by an estimated 25% and extensive water savings will be shown. The project included a new chilled and hot water central plant with extensive replacement and upgrades to the facilities existing mechanical systems. Multiple phases of construction allowed the Civic Center to remain operational throughout the construction progress.

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.

Appalachian Regional Hospital, Beckley, WV

Mr. Butzer is the mechanical project engineer currently working with the hospital on multiple renovations. The ICU and OR departments will undergo Mechanical and Architectural upgrades in a multiphase project while the hospital remains operational. The existing kitchen will receive a new make-up air unit, and fan coil units to improve pressure and air balance relationships within the hospital. A dedicated HVAC unit was provided for the endoscopy suite to improve thermal comfort and provide code-required ventilation, air-changes and humidity.

Glenwood Elementary School, Princeton, WV

Mr. Butzer was the mechanical project engineer for this successful project that came in under budget, on-time and with zero change orders. The first phase was duct cleaning and sealing that improved indoor air quality and reduced system demand by 8 tons. The second phase was the HVAC improvements which replaced all existing constant volume, single compressor, multizone, air handling units (AHUs) with new variable speed, multi-compressor AHUs. VAV terminal units were installed to create separate zones for each classroom. A new building automation system was provided for system controls and to incorporate the facility into the existing county-wide controls network. All electric heating was abandoned to maximize use of the hot water heating system. Mechanical upgrades saved the school an estimated 18.5% in the electric usage and provided them with over \$13,000 in rebates from the electric utility.

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

WV Lottery Headquarters, Charleston, WV

Mr. Pauley was the project manager and prepared 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 had extensive structural renovations. Renovations included: replacing bearing pads, patch & repair of concrete members and the addition of waterproofing protection. The existing warehouse under the parking deck was enlarged to provide additional storage space.

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

Charleston Coliseum & Convention Center, Charleston, WV

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

Valley Health Systems, Wayne, WV

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

Bridgemont Community and Technical College (Davis Hall, Building 704), Montgomery, WV Mr.

Pauley was the project manager for a design team that prepared construction documents for the renovation to an existing 7-story, 77,000 SF educational building. The project scope included remedying several engineering and life safety deficiencies, as well as architectural improvements to the building envelope.

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.

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 (unbuilt)

Mr. Pauley was the project manager for new lodge and conference center at Beech Fork State Park. The facility will include guestrooms and other guest-only facilities in one area and public functions such as the restaurant, lounge, gift shop, and conference rooms in another area. A high-performance envelope was designed to eliminate thermal bridging and the potential for condensation.

C. Ivan Herndon, PE



Role

Electrical Engineer

Professional Registrations

Professional Engineer (WV, VA)

Mr. Herndon 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.

Project Experience

Fayette County Schools Renovation/Expansion

- Midland Trail HS
- Fayetteville PK-8
- Valley PK-8

Intuit Prosperity Hub Renovation, Bluefield, WV

WVSOM Tech Center Expansion, Lewisburg, WV

Marshall University Smith Hall Study, Huntington, WV

CEFP 10 Year Building Evaluations

- Raleigh County Schools
- Jackson County Schools
- Kanawha County Schools
-

State Office Building #6 Renovation, Charleston, WV

Governor's Mansion Guard House Renovation, Charleston, WV

Marriott Hotel Electrical Upgrade Study, Charleston, WV

One Wall Street Building Study, Ravenswood, WV

CAMC Chiller Pump Replacement, Charleston, WV

CAMC AP Lab HVAC Upgrades, Charleston, WV

Appalachian Regional Hospital – Various Projects

- Tug Valley HVAC Replacements
- Summers County HVAC Replacements

Education

Bachelor of Science in Electrical Engineering, Virginia Commonwealth University, Richmond, Virginia, 2009

Employment History

2019 - Present, Electrical Engineer, ZMM

2012 - 2019, Electrical Engineer, 2RW, Charlottesville, VA

2011-2012, Repair/Assembly Technician, National Optronics, Charlottesville, VA

2010 – 2011, Electrical Engineer, Aker Wade Technologies, Charlottesville, VA

Winfield H. Strock

Role

Construction Management/Estimator

Professional Registrations

Licensed Contractor (WV 000010)

Mr. Strock is a licensed contractor in West Virginia. When the West Virginia Contractor Licensing Act was passed in 1990, Mr. Strock was selected as Chairman of the Contractor Licensing Board and served in that capacity until his resignation in 1995. Mr. Strock's has served as Chief Estimator, Field Engineer, and Project Manager on multiple jobs. Mr. Strock has also been the Principal/ Owner of his construction company for 17 years.

ZMM and Mr. Strock have successfully collaborated on a number of projects, including:

- District V Headquarters
- Forks of Coal
- Beech Fork Lodge
- Camp Dawson Building 202 Improvements
- Marshall County Readiness Center
- Logan-Mingo Readiness Center
- Parkersburg Readiness Center
- New Kanawha County (Clendenin) Elementary School
- New Mercer County Elementary School
- Mountain Valley Elementary School
- Williamstown Elementary School
- Building 5, 6, & 7 Improvements
- West Virginia State Police Information Services Center
- Edgewood Elementary School
- West Virginia State Lottery Headquarters Renovation
- Brooks Manor Addition and Renovation
- WWRTP Building 740 Improvements
- Charleston EDGE (Mixed-Use Housing)

Major Projects Estimated 2005-2012

Charleston Area Medical Center

Robert C. Byrd Clinical Teaching Center - \$70M

CAMC Cancer Center - \$40M

CAMC Memorial 48 Bed Addition - \$30M

West Virginia K-12 Schools

McDowell County Schools Relocation Program - \$50M

Putnam County Schools Bond Program - \$65M

Greenbrier West High School - \$21M

Mingo County High School - \$27M

Pikeview Middle School - \$16M

Spring Mills Primary School - \$13M

Edgewood Elementary School - \$16M

Employment History

1995 - Present, Principal, Construction Manager, Winfield Strock

1978 - 1995, Owner, President, Kenhill Construction Company

1965 - 1978, Field Engineer, Estimator, Project Manager, Messer Construction, Cincinnati, OH

Civic Affiliations

- Associated General Contractors of America - *Past Director*
- Contractors Association of West Virginia - *Past President/Director*
- Kanawha Valley Builders Association - *Past President*

Client References

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

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200 Civic Center Drive
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WVARNG
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Charleston, WV 25311
304.561.6446

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

Mr. Blair Couch, Commissioner
Wood County Commission
No. 1 Court Square, Suite 205
Parkersburg, WV 26101
304.424.1978

Ms. Beth Casey, CEO
Girl Scouts of Black Diamond Council
3211 Virginia Street, East
Charleston, WV 25302
304.345.7722

April 23, 2018

Mr. Gregory L. Melton, Director
General Services Division
The Department of Administration
112 California Avenue, 5th Floor
Charleston, WV 25305



Re: Capitol Complex Building 3 – HVAC Report

Dear Mr. Melton:

Summary:

ZMM was engaged by the State of West Virginia, Department of Administration, General Services Division to provide a third party review of the heating, ventilating and air conditioning system (HVAC) at the recently renovated Capitol Complex, Building 3. The study is to address the unsatisfactory performance of the HVAC system particularly the lack of cooling temperature control in the stacked Conference Rooms on floors 2 through 8.

2-Pipe System:

The perimeter of the building is serviced by 2-pipe, hot/chilled water sensible cooling induction units. The building exhibits temperature control problems inherent in most 2-pipe systems. There can only be heating hot water or cooling chilled water available at any one time serving the induction units. Presently, the changeover of ambient temperature is 55 degrees F. Above 55 degrees ambient chilled water is available; below 55 degrees ambient hot water is available. The problem arises when areas of the building require air conditioning due to solar gain and internal gain due to people, lights, and equipment loads below the changeover temperature of 55 degrees F.

Ideal perimeter room temperature control is not achievable with this system. If the changeover temperature of 55 degrees F is lowered to provide cooling for these areas, other areas requiring heating are cold. There is not a good solution to the dilemma of a 2-pipe system particularly during ambient temperature fluctuation during spring and fall seasons and lack of air conditioning availability during cold and moderately cold ambient temperatures. Control strategies can minimize room temperature differences.

Conference Rooms:

ZMM's calculations indicate the design room cooling sensible load in 7 stacked Conference Rooms is greater than the sensible cooling capacity of the induction units serving the rooms. In addition, occupied Conference Rooms require cooling well below the 2-pipe changeover temperature from heating to cooling of 55 degrees F ambient. Supplemental air conditioning is required to adequately cool these rooms.

Background:

The building is supplied by campus steam and chilled water. Chilled water is available all year and steam is available from October 15th to April 15th.

The connected cooling capacity of the building is 481 tons or 489 sf/ton (148 tons for sensible induction unit load and 333 tons for the remaining loads).

A steam to water heat exchanger produces hot water for heating use. A plate frame heat exchanger produces 44 degrees F chilled water for cooling use.

Primary loop hot and chilled water pumps distributes water to the two variable air volume units, four energy recovery units and to four induction unit plate frame heat exchangers.

The interior zones of the building are conditioned with two variable air volume air handling units serving variable air volume terminal units with hot water reheat. The perimeter zones of the building are conditioned with 382 sensible cooling induction units. Each has a net sensible capacity of 6,398 btuh, 80 cfm of 55 degrees F primary air and 352 cfm supply air at 58.3 degrees F. The primary air induces secondary or room air which is cooled or heated by a water coil. The coil flows 2.4 gpm of either hot water or chilled water depending on ambient temperature. The induction units are supplied either hot or chilled water by two secondary variable speed pumps obtaining heating or cooling from four plate frame heat exchangers one hot water and chilled water for each of two zones. The two perimeter induction unit zones are SW zone and NE zone

The temperature of the secondary hot/chilled water flow to the induction units is controlled by a primary variable speed pumping arrangement on the primary hot/chilled water loops.

Four energy recovery make-up air units supply dehumidified ventilation air to the 382 induction units at a rate of 80 cfm each. The induction units are sized to condition the room sensible load only and do not have latent heat capacity or condensate drain pans. The unit's supply one hundred percent conditioned outside air and recover energy from one hundred percent exhaust air.

The two variable air volume units and four energy recovery units receive return air/exhaust air from the plenum space above the ceilings. Energy recovery units also provide toilet exhaust.

The original 1/8" clear glass windows were retained. About 25 percent were replaced due to breakage. The masonry composite walls are not insulated except for every other pilaster. The pilasters were demolished for duct and pipe chases for the induction units. A new stud wall enclosed the induction pipe and ducts. A few inches of batt insulation was applied in the stud space. The amount of wall insulated on a typical floor is approximately 20 percent.

All windows have manually operated roller shades except the 1st floor has power operated shades.



Discussion:

ZMM used Trane Trace 700 software to check the design engineers (CJL) load calculations for the Conference Room on Floors 3 through 6. Our calculations indicated greater sensible room load and less available cooling capacity from the induction than used by CJL.

ZMM used a higher lighting load taken from the lighting drawings (1.25 w/sf vs. 0.75 w/sf), higher miscellaneous load (1.0 w/sf vs. 0.25 w/sf), higher u-value for wall conduction, and eliminated infiltration load.

The major difference in the calculations is the capacity of the room induction units. We used the capacity from the drawing schedule, shop drawings, and TAB report.

Each induction unit is supplied with 80 cfm of primary air and has a net sensible cooling capacity of 6,398 btuh each. Three units in each of the Conference Rooms from 3rd through 6th floors have a combined capacity of 19,194 btuh with a room temperature of 75 degrees F. If it is desired to maintain the Conference Room at 72 degrees F, the capacity reduces by 6% for every degree below 75 degrees F. For their calculations CJL used units with 108 cfm of primary air and a net cooling capacity of 8,131 btuh or at total of three for 24,393 btuh or 27% more capacity than scheduled on the drawings.

CJL's calculations indicate they have a net ¼ ton air conditioning deficit when no shades are used and a ½ ton surplus when the roller shade is 100% closed. Our calculation indicates there is a net cooling deficit even with use of roller shades.

We suggest that CJL perform a load calculation on a perimeter open office zone on the SSW facing and compare to the induction unit capacity and also review induction unit temperature sensor placement.

Roller Shades:

Although roller shades do contribute to solar attenuation, it is difficult to anticipate the effectiveness of manually operated roller shade since they are left to human operation. Typically manual roller shades attenuation is not considered in equipment sizing.

This reliability of roller shade performance applies to the open plan areas on the SSW facing of the building in addition to the Conference Rooms.

Roller shades do not solve the problem of rooms with net cooling load and no available chilled water due to two pipe changeover based on ambient air temperature.

Induction Unit Primary Air:

The 80 cfm of primary induction air supplied at 55 degrees F contributes about 25% of the total sensible cooling capacity of the unit. Therefore, in swing room loads with the heating coil off there is some capability for cooling. The controls, as presently configured, have a reset temperature of the primary air from 55 to 70 degrees F based on ambient conditions. We suggest reducing the upper reset



temperature because there is heating available for rooms that are at neutral load or require heating. This will help during the changeover seasons. We understand people complain of the cool discharge air during these periods, but we believe this compromise will help over all building temperature control.

Conclusion:

Barring deficiencies noted in this report, the plans are clear and the systems are mechanically functional. The construction of the mechanical systems are well executed.

The problems associated with the 2-pipe system are not easily corrected. The problems with uneven temperature control can be mitigated with systematic use of the roller shades and trial and error resetting the ambient changeover temperature in the two independent zones and controlling the primary air discharge temperature.

The Conference Rooms lack cooling capacity to operate over all ambient conditions and internal loads. Supplemental cooling is required to provide satisfactory temperature control.

Two suggested solutions are 1) variable refrigerant cassettes with condensing unit(s) on the 7th floor balcony or other suitable location, and 2) connect to the central interior zone variable air volume system ductwork with new variable volume terminal units serving each of the Conference Rooms, provided excess capacity is available.



ZMM

Robert Doeffinger, PE
ZMM, Inc.

