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Procurement Type:	Central Contract - Fixed Am	ıt		SO Dept:	0211		
Vendor ID:	00000208495	2		SO Doc ID:	GSD240000008		
Legal Name:	ZDS LIMITED LIABILITY CON	MPANY		Published Date:	5/23/24		
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Response Time:	12:13			Solicitation Description:	EOI: House Chambers Dedicated Outsi System Project	ide Air	
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Last Name:	Price						
Email:	pat.price@zdsdesign.com						
Phone:	304-755-0075						



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

State of West Virginia **Solicitation Response**

Proc Folder:	1417429				
Solicitation Description:	EOI: House Chambers Dedicated Outside Air System Project				
Proc Type:	Central Contract - Fixed Amt				
Solicitation Closes		Solicitation Response	Version		
2024-06-11 13:30		SR 0211 ESR06102400000007660	1		

VENDOR					
00000208495 ZDS LIMITED LIABILITY COMPANY					
Solicitation Number:	CEOI 0211 GSD2400000008				
Total Bid:	0	Response Date:	2024-06-10	Response Time:	12:13:51
Comments:					

FOR INFORMATION CONTACT TH Melissa Pettrey (304) 558-0094 melissa.k.pettrey@wv.gov	E BUYER		
Vendor Signature X	FEIN#	DATE	
All offers subject to all terms and offers	conditions contained in this solicitation	DATE	

all terms and conditions contained in this solicitation

Line	Comm Ln Desc		Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
1	EOI: House Chambers I System Project	Dedicated Outside Air				0.00
Comm	Code	Manufacturer		Specificati	on	Model #
8110150	08					

Commodity Line Comments:

Extended Description:

EOI: House Chambers Dedicated Outside Air System Project



DESIGN/CONSULTING SERVICES



Expression of Interest to Provide Architectural/Engineering Services

Building 1 West Virginia State Capitol House Chambers Dedicated Outside Air System Installation

June 10, 2024



MECHANICAL / ELECTRICAL / STRUCTURAL / COMMISSIONING

Table of Contents

Section I. Executive Summary Letter Project Goals & Objectives

Section II. Company Overview

Section III. Description of Project Experience Additional Project Experience Brochures

Section IV. Proposed Team Staffing Plan Team Certifications Team Resumes

Section V. References Client Testimonial Letters

Section VI. Attachments State of WV Agency Expression of Interest Signature Certification







SECTION I.

Executive Summary

Letter

Project Goals & Objectives





MECHANICAL • ELECTRICAL • INDOOR AIR QUALITY • ENERGY • COMMISSIONING • FORENSIC



June 10, 2024

WV Department of Administration General Services Division 2019 Washington Street, East Charleston, WV 25305-0130

Please accept our Expression of Interest to provide Professional Architectural/Engineering Services for the West Virginia State Capitol, Building 1 House Chambers Dedicated Outside Air System Installation.

ZDS Design/Consulting Services was founded in 1994 and is located in Scott Depot, WV, only minutes from the project. The project will be assigned to **ZDS**' principal-in-charge of planning/design, who will follow the project from inception through Construction Administration and has full authority to execute a binding contract on behalf of **ZDS**:





Todd A. Zachwieja, PE, CEM, LEED AP – Principal, CEO ZDS Design/Consulting Services 135 Corporate Center Drive, Suite 532, Scott Depot, WV 25560 Office: 304-755-0075; Mobile: 304-545-4550

Todd.Zachwieja@ZDSDesign.com; www.ZDSDesign.com

The ZDS Team will provide comprehensive professional services for the proposed Installation of the Dedicated Outside Air System in Building 1 House Chambers. We have successfully completed numerous projects on the Capitol Complex grounds for the State of West Virginia. We assisted GSD in incorporating DOAS units into Building #4 renovations. Other DOAS projects include Riverside High School Renovations, WVDHHR facilities, William R. Sharpe, Jr. Hospital, and multiple WVArNG facilities, as well as cities and counties throughout the state and regionally.

ZDS has designed and coordinated upgrades for projects of all sizes, budgets, and schedules. We have successfully managed renovation projects through dialogue and proper planning with the Owners and Contractors for phasing the work successfully and minimizing the impact on the occupants' daily activities.

We are committed to maintaining close communication with the appropriate personnel in the General Services Division to ensure that our approach to the Project will effectively address their needs and concerns. Recognizing the alignment of our mission with the desire to serve West Virginia clients, we would be privileged to collaborate with you.

ZDS has previously teamed with CAS Structural Engineering on many successful projects and will utilize their structural engineering services as necessary for the **Building 1 House Chambers Dedicated Outside Air System Installation**. Carol Stevens, PE, F. ASCE, President of CAS Structural Engineering, Inc., located in Alum Creek, WV, will provide necessary structural engineering services. Carol has extensive experience working with the State of West Virginia, including many projects within the Capitol Complex and historical facilities. She was the first female engineer appointed to the WV Professional Engineers Board.



GSD typically addresses hazardous materials using existing in-house personnel or contracts. If hazardous materials are suspected or discovered, we will work with the Owner to assess and resolve any suspected issues, as we have done on previous projects. If this needs to be included in the scope, ZDS works with consultants to address these needs.

Project Goals, Objectives & Approach

<u>GOAL/OBJECTIVE 1:</u> The Agency requests a response from parties in schematic design, design development, construction documents, procurement phase, and contract administration to replace the duct line and incorporate a Dedicated Outside Air System for dehumidification of the House Chambers. The system will be used year-round for dehumidification control, regardless of the seasonal operation of steam. The House Chambers are also only fully utilized primarily in Winter months.

ZDS RESPONSE: We provide the evaluation, schematic design, design development, procurement, and construction administration to meet your goals and objectives as we have for previous projects with the GSD. We also can commission the new HVAC system. **ZDS** has successfully worked with the WV State Purchasing Division to prepare documents to procure competitive bids from potential contractors and provided Construction Administration services through the completion of the projects. Governmental agencies we have experience with include, but are not limited to, the following: WV General Services Division, Kanawha County Commission, WV Dept of Education, WVDHHR, WVDNR, WVANG, WVArNG, WV Higher Education Policy Commission, WV Public Service Commission, WV DOH, Dept. of Environmental Protection, US Department of Justice, and PJKK Federal Building, as well as many city government agencies and most WV County School systems. Our experienced staff includes senior construction administration who not only have design experience but also construction experience.

The ductwork upgrades located on the roof of Building #1 can be utilized to incorporate the proposed new DOAS unit(s). The other ductwork from the roof to the basement and indoor air handling unit will be evaluated. The existing indoor return fan, basement HVAC unit, and control system would also be evaluated for additional needs. The House Chamber occupancy varies dramatically from when the legislature is in session to time outside of the session. This type of occupancy swing is among the hardest to design HVAC systems effectively; however, we have done it successfully on many projects. The outdoor ventilation requirements depend on the occupancy and help maintain the space pressure relationship to adjacent areas. Our design approach would be to pressurize the House Chambers so adjacent spaces positively have minimal impact. If the DOAS system is appropriately sized, it would also help adjacent spaces to the House Chambers. Humidity control is essential in the space to preserve this historical landmark and control high humidity to minimize the potential for degradation of the building elements and comfort for the occupants. Drier air will also be more comfortable for the occupants.

Dedicated Outside Air Systems (DOAS) is an excellent method to condition outside air, is the preferred approach by ASHRAE, and was used at their headquarters. **ZDS** has been using these systems for years. The DOAS could allow for dehumidification improvement beyond the House Chambers by drying out the air, which can help remove higher moisture levels in adjacent spaces. A "drying mode" can be used as part of the operating and control strategies during hot, humid periods, vastly improving Indoor Air Quality. **ZDS** designed the 2023 ASHRAE Award-Winning Riverside High School renovations that used DOAS units, where the **energy usage was reduced by 64%** over the baseline previous energy use, which solved many of their comfort and humidity issues. That project included DOAS units comparable to the ones needed for this project. We also assisted GSD in incorporating the DOAS unit for the Building #4 renovations project. We also commission DOAS systems and can integrate control strategies to optimize their year-round operation through the Trane Ensemble control system. We have designed/commissioned many schools using DOAS systems and completed projects for the WVArNG using DOAS systems. These systems were designed and available for year-round operation.

We have worked on multiple projects in Building #1, including extensive work in the basement; we performed 3D scans for previous heating renovations tied to the Trane control system. We have also been in the dome performing 3D scanning. Our previous knowledge and proximity to the WV Capitol will provide GSD with an excellent, well-thought-out design that meets your needs. We understand where gas service could be extended to serve the new proposed DOAS equipment so the DOAS system is not dependent on the steam heating system and is capable of year-round operation.

<u>GOAL/OBJECTIVE 2</u>: This project will require coordination with the State Historic Preservation Office and the Capitol Building Commission and the Department of Administration GSD Architecture and Engineering Section. The intent is to retain the original look of the 1930s era and upgrade to a technologically advanced dehumidification system that can modulate with the outdoor temperatures.

ZDS RESPONSE: We have successfully worked with all the agencies listed. When carefully planned and designed, engineering renovation projects can minimize the concerns of the State Historic Preservation Office and Capitol Building Commission. We have done other WV State Capitol Complex projects and worked through these agencies. We have also worked with the WVDHHR on engineering renovations to some of their historic buildings, successfully meeting the State Historic Preservation Office's needs. We can do it for this project, too. The proposed renovations would be planned to minimize being seen both within important spaces within the Capitol Building and on the roof. Equipment design and placement would consider sight lines from the ground level to keep the historical integrity of the building.

<u>GOAL/OBJECTIVE 3</u>: Building Automation Controls should be accessible to our technicians and reside on the Trane Ensemble operator station. The space should incorporate several relative humidity sensors and demand-controlled ventilation carbon dioxide sensors, as occupancy varies greatly.

ZDS RESPONSE: We have designed and commissioned multiple renovations at the WV Capitol Complex involving integrating new HVAC equipment into the Trane Ensemble system. We believe our hands-on knowledge through commissioning makes us better engineers when designing controls since we see the controls from an operation and maintenance point of view. Our engineering staff has decades of extensive control experience. The House Chambers and basement AHU with return fan controls can be designed to be integrated into the Trane Ensemble system. The return fan and indoor AHU may require modifications to permit proper sequencing of the fans with the remote DOAS units, which will need to be determined during the evaluation phase of the project. Demand Control Ventilation is the recommended approach for controlling outdoor ventilation, which would be incorporated into the controls with careful consideration of the carbon dioxide and humidity sensor placement to protect the House

Chambers' historical integrity. We also consider using a recirculation mode in the design of the DOAS units where appropriate, which is useful for dehumidifying when the outdoor ventilation air requirements are low or unoccupied.

Our team is the best choice for professional engineering planning and design services for the **Building 1 House Chambers Dedicated Outside Air System Installation.** Our goal is the Client's satisfaction and knowing we have addressed their needs and requirements. We make every effort to involve the Client throughout the process, beginning with identifying the needs and then planning for a long-term solution that benefits the Client.

ZDS has an excellent track record of completing successful projects on time and within budget guidelines. We are ready and willing to start immediately on your project. We are confident that our specialties will provide you with the best expertise to provide economical solutions for your facility. We look forward to discussing our qualifications. If there are any questions, please do not hesitate to call.

Sincerely,

Todd A. Zachwieja, P.E., CEM, LEED AP Principal, Chief Executive Officer



SECTION II.

Company Overview





ABOUT ZDS DESIGN/CONSULTING SERVICES

In 1983, Todd A. Zachwieja founded ZECO Consultants. In 1994 **ZDS** Limited Liability Company was incorporated in West Virginia using dba **ZDS** Design/Consulting Services, and was founded to provide design and consulting services.

Each new project is assigned to a principal in charge who will follow the project from inception through commissioning. **ZDS** assigns the production staff according to the nature of the project and the work force necessary to meet the schedule. The principal in charge of that project determines if consultants are needed and coordinates all areas. After bidding, a principal of **ZDS** coordinates visits to the job site regularly, all the way through the post-warranty inspection. **ZDS** believes in the team approach when providing engineering design and consulting services. We start with our client as the number one member on our team. We listen to the needs and concerns of our client and that becomes the basis for our design.

COMPANY LEGAL NAME

ZDS Limited Liability; Company dba **ZDS** Design/ Consulting Services

LOCATION OF INCORPORATION West Virginia

FOUNDER\$

Todd A. Zachwieja, P.E., C.E.O.

Lori L. Zachwieja, C.P.A., C.F.O.

Daniel H. Kim, Ph.D.

FIRM LOCATION

135 Corporate Center Drive, Suite 532 Scott Depot, WV 25560

EMPLOYEE\$

ZDS currently employs design professionals covering all aspects of our services.







www.zdsdesign.com

ZDS Company Overview - PAGE 1



CLIENTS & EXPERIENCE	Tyler County Commission Courthouse Design/Consulting Services
Charleston Area Medical Center	Tucker County Courthouse
Charleston National Bank/Chase	University of Charleston Innovation Center
Coal Heritage Discovery Center	Veterans Administration
 Concord University Nick J. Rahall II Technology Ctr. 	Webster County Development Authority
 District 2 Headquarters' Building HVAC Renovations 	White Sulphur Springs Welcome Center
◆ Tyler County 911 Center - <i>Net Zero</i>	• William R. Sharpe, Jr. Hospital, WVDHHR
General Motors North America Operations	• World Trade Center, MD
 Harvard University Arboretum Lab 	WV Air National Guard
 Hopemont Hospital, WVDHHR 	WV Army National Guard
◆ IMC Data Center	• WV Chief Medical Examiners Office Renovations
◆ Jackie Withrow Hospital, WVDHHR	• WV Dept. of Education - State wide PreK-12 Schools
 Kanawha County Commission Courthouse & Judicial Annex 	 WV Division of Energy WV Dept. of Transportation
♦ Kanawha County Metro 911	WV Dept. of Health & Human Resources
Laidley Towers	WV Division of Culture and History Renovations
 Marshall University Harris Hall & Smith Hall Meadowbrook & Burnsville Rest Areas, WVDOT Mercer County Courthouse 	 WV Division of Protective Services WV General Services Division WV Higher Education Policy Commission
 Pendleton County Courthouse & Annex Pocahontas County Community Center Pocahontas County EMS 911 Center Robinson Grand Performing Arts Theatre St. Patrick Church Renovations 	 WV Higher Education Foncy commission WV Parkways Authority HVAC Renovations WVU Health WVU Morgantown Campus WVU Tech (Montgomery Campus) Engineer Bldg.
	• WVDOT Lab

ZDS provides comprehensive design services. We have experience and specialties in indoor air quality, energy management and commissioning, along with traditional mechanical and electrical design experience dating back as far as 1958. We offer a complete package. **ZDS** works with all levels of the client's staff: the building owner, budget supervisor, operating and maintenance staff and others impacted by the project. We recognize that the maintenance and operating staff live with the design long after the project's completion. We listen to and work with those who will continue to operate and maintain the equipment. We find that proper communication benefits the client throughout the design process and beyond.

The **ZDS** design team provides a total system evaluation for cost-effective selection, installation, and ease of maintenance for both new systems and retrofit of in-place systems. Design begins with our client. Our staff meets with our client to review their concerns, budgets and schedules. The **ZDS** design team reviews the entire picture, and ends with "A Total Design." The **ZDS** staff has the expertise with codes and standards. We have extensive experience in conducting engineering code surveys of existing facilities. Our staff has excellent working relationships with the West Virginia Fire Marshal's Office, West Virginia Department of Education and the West Virginia School Building Authority. In addition to comprehensive Engineering services from an experienced design team, another major consideration in the selection of your engineer and design staff should be their track record.

ZDS' organization has an unbeatable, long running, and well-known track record for meeting our clients' needs, on time and within budget, with outstanding quality. **ZDS** views these characteristics as the foundation of Quality. We look forward to the opportunity to discuss our ideas with you and assist you by providing solutions for your needs with a full range of services from Planning to Commissioning.



INDOOR AIR QUALITY SERVICES

ZDS provides consulting engineering services for the indoor air quality (IAQ) environment. These services include: strategic planning for renovation and new construction projects; technical research and writing; specialized applications software development; corporate and professional training programs; publications support and fulfillment; and site-specific engineering and scientific consultation. Todd Zachwieja, **ZDS** Principal, is contributing editor for the following IAQ publications:

- Technical Review Panel for the publication of the *INvironment™ Handbook* of *Building Management and Indoor Air Quality*, by Chelsea Group and published for Powers Educational Services
- Technical Review Panel for the quarterly publication of the *INvironment*TM *Newsletter*, by Chelsea Group for Powers Educational Services
- Ventilation for a Quality Dining Experience: A Technical Bulletin for Restaurant Owners and Managers, released in January 1993
- The New Horizon: Indoor Environmental Quality, published as a supplement to an issue of Consulting-Specifying Engineer magazine, a trade magazine distributed to roughly 50,000 engineers
- Editorial Advisory Board member reviewing the articles of the monthly publication *INvironment*TM *Professional*
- Editorial Advisory Board member of POWER PRESCRIPTIONSTM Indoor Air Quality Publication by Electric Power Research Institute

ZDS provides Indoor Air Quality (IAQ) services for major corporations, government organizations and property owners to resolve their specific facility problems:

- Resolve "sick building syndrome"
- Identify solutions to building-related illnesses due to extensive biological contamination
- Develop solutions for HVAC systems, temperature controls, equipment, operating and maintenance practices for indoor air quality
- Commission new and renovated facilities to minimize or eliminate IAQ issues before problems arise
- Develop and establish master plans as well as conduct training seminars for IAQ of schools and commercial buildings

As one of the nation's leaders in Indoor Air Quality (IAQ), **ZDS** provides sophisticated technical expertise that enables our client to be proactive in solving and preventing indoor environmental problems.







At **ZDS**, our engineering staff integrates energy efficiency into each project design to provide you, our client, with the added value that you expect and deserve. The **ZDS** team approach represents a tremendous amount of experience in

tremendous amount of experience in designing energy efficient facilities. **ZDS** offers a comprehensive range of energy management services including:

- Providing detailed analysis of facilities
- Recommending sound and proven energy saving solutions
- Implementing energy management improvements
- Determining, quantifying and assisting in securing available Utility and Government grants

The **ZDS** team members take pride in the quality of their projects and have been responsible for designing and implementing numerous energy management programs. These programs are providing significant energy improvements and include optimizing, central utility plant equipment, control systems, air handling systems, lighting systems, and other energy consuming equipment.



Recent projects include:

- Interconnecting boilers and chiller plant systems
- Designing Geothermal HVAC systems
- Optimizing HVAC equipment and operating sequences, including upgrades to variable speed operation
- Installing Direct Digital Control (DDC) Energy Management Systems
- Replacing inefficient lighting equipment with energy efficient systems
- Modifying air handling equipment from 100% outside air to return air operation
- Implementing heat recovery units into HVAC equipment
- Improving laundry, kitchen and other process application efficiencies





In addition to the energy management projects outlined above, the **ZDS** team members have extensive experience in identifying and implementing energy efficient operating and maintenance measures. These are typically low cost or no cost measures that include:

- Inspecting, calibrating temperature controls and adjusting outdoor air dampers.
- Commissioning HVAC system controls operation.
- Testing steam traps and pressure relief equipment operation.
- Enabling heating and cooling equipment only when required.

ABOVE: ZDS designed and implemented a geothermal system for *Riverside High School in Kanawha County* showing a *reduction in energy use of over 64% with an EUI of 30.6 from an EUI of 84.*



The **ZDS** team is trained and experienced in advising you of program options to incorporate energy efficiency and operational savings features into the design of your new construction and renovation projects. At **ZDS**, we view our role as helping you to define your own energy efficiency needs and goals through identifying energy savings options and providing supporting financial information. We then help you fit your energy efficiency needs and goals into a workable budget and schedule, and then design a program to fill those needs.

Sustainable "Green Building" design, including LEED certification, recognizes the importance of commissioning. The design and construction industry have had start-up problems when a facility is occupied and construction deficiencies were not discovered until the contractor's traditional one-year warranty period expired. The mechanical and electrical systems have continued to become more complex with sophisticated control systems and equipment, and a mountainous amount of changing technology. If not properly addressed, building owners could face numerous operational problems from "Sick Building Syndrome," excessive energy costs, and uncomfortable indoor environments.

Commissioning is the missing link between design and implementation. Prior to joining **ZDS**, Todd Zachwieja established commissioning services for one of the nation's largest energy service companies. He is also a LEED Accredited Professional. Many utility companies and building owners now require commissioning for new or renovated facilities in order to maximize the use of their investments in their facilities and to obtain LEED certification.

ZDS offers commissioning services for their clients, including meeting LEED enhanced commissioning requirements. These services include strategic planning and operations assistance for renovation and new construction projects. Commissioning services consist of construction document review, equipment performance documentation of design criteria, value testing. engineering, operational fine tuning, coordination of professional operations training programs and site-specific engineering consultation. Our project team has the unique experience of in-depth design knowledge and hands-on operations knowledge that fills in the gap between traditional design services and the building owner's operational needs.

The commissioning process now required by ASHRAE 90.1 Energy Code and offers the following benefits:

- Improved comfort, serviceability and owner understanding of systems and design intent
- Added technical support for the owner and being proactive in preventing new problems
- Reduced maintenance and decreased expenses related to operating deficiencies
- Early identification and resolution of system discrepancies while designers and contractors are still under contract and on the job
- Verification of system performance while meeting financial restraints

The National Conference on Building Commissioning invited Todd Zachwieja to speak and he jointly presented a paper with the Director of Maintenance of Charleston Area Medical Center's Memorial Division. The Tampa, Florida Conference involved experts nationwide.

Since 1958, the ZDS design staff has provided millions of dollars of engineering design services on a variety of project types. The ZDS design team will provide comprehensive services utilizing experienced staff through planning, cost estimating, engineering,



coordination of bidding, regular site visitation during construction and specifications for equipment.

You, our client, will greatly benefit from a single point of responsibility for every need your project may have.

3D Scan to BIM Services BIM Collaboration



Why 3D Laser Scanning is Better

3D laser scans can be beneficial with NEW construction projects by capturing concealed elements during construction before they're concealed. 3D laser scans also provide superior details with data that is more comprehensive.

"With the 3D laser scanning service, ZDS saved me countless hours communicating with all project team members, even those who work or live far away. Also, we now have an accurate record of the existing conditions that we can rely on for future projects." - Retired COO of WV DHHR

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Benefits

ofBIM

process

High Level of Flexibilit. .Conflict Detection

Risk Mitigation

-Optimization of Cost

High Level of Customization

3D allows facility owners to view and measure areas with others on their planning and construction team.

Real-time, anytime, anywhere access with co-authoring ability! Brings **teams** together for the highest level of collaboration.



3D Laser Scanning



Company Overview



Firm Profile

CAS Structural Engineering, Inc. – CAS Structural Engineering, Inc. is a West Virginia Certified Disadvantaged Business Enterprise structural engineering firm located in the Charleston, West Virginia area.

Providing structural engineering design and/or analysis on a variety of projects throughout the state of West Virginia, CAS Structural Engineering has experience in excess of 30 years on the following types of building and parking structures:

- Governmental Facilities (including Institutional and Educational Facilities)
- Industrial Facilities
- Commercial Facilities

Projects range from new design and construction, additions, renovation, adaptive reuse, repairs and historic preservation (including use of The Secretary of the Interior's Standards for Rehabilitation) to evaluation studies/reports and analysis.

CAS Structural Engineering utilizes AutoCAD for drawing production and Enercalc and RISA 2D and 3D engineering software programs for design and analysis. Structural systems designed and analyzed have included reinforced concrete, masonry, precast concrete, structural steel, light gauge steel and timber.

Carol A. Stevens, PE is the firm President and will be the individual responsible for, as well as reviewing, the structural engineering design work on every project. Carol has over 30 years of experience in the building structures field, working both here in West Virginia and in the York, Pennsylvania vicinity. Carol is also certified by the Structural Engineering Certification Board for experience in the field of structural engineering.

CAS Structural Engineering, Inc. maintains a professional liability insurance policy.



SECTION III.

Description of Project Experience

Additional Project Experience Brochures



State of West Virginia Capitol Complex Charleston, WV

Project Cost: \$26,500,000 Size: 1,900,000 ft² covering 9 buildings

Peer Review, Commissioning, HVAC Renovations, Fire Protection, Electrical Renovations, Consultant for

Performance Contracting



Numerous design and renovation projects for the WV State Capitol Complex including engineering planning, design, supervision, preparation of construction documents, specifications, construction administration, and commissioning of HVAC systems, sprinkler systems, plumbing systems, electrical power, lighting, fire alarm, security, technology and communications for many facilities on the WV Capitol Complex: WV Division of Protective Services: Engineering master planning & design for specific life safety issues involving homeland security, fire alarm, sprinklers, emergency power, CCTV, intercom, mass notification and "giant voice" system for all State facilities on the Capitol Complex under a 10-year open-end contract. WV Division of **Culture and History Library:** Renovations addressing long-term HVAC and IAQ problems including fire alarm and fire protection upgrades completed in 2011. Renovations conserved energy without sacrificing comfort or indoor air quality. District Heating System: As a consultant to Johnson Controls under a Performance Contracting program to provide master planning and design for the district heating system for the WV Capitol **Complex.** The project included the Master Planning, IAQ evaluation, energy analysis, code analysis and Mechanical design involving more than 1,900,000 ft² of facilities including the Capitol Building, Buildings #3, #4, #5, #6, #7, Holley Grove, Governor's Mansion and the Culture Center and subsequent renovations to the steam systems. Recent work includes Bldg. #3 Hydronic Boiler Upgrades and Bldg. #4 Peer Review and Commissioning.





The Capitol Complex renovations are estimated to <u>save</u> <u>nearly \$2,000,000 annually</u> over the costs of operating the old systems.



Kanawha County Schools Riverside High School HVAC/Lighting Renovations





Riverside High School, built in 1997, the academic wing's HVAC system consisted of four large Dual Duct custom Rooftop units and gas-fired packaged DX rooftop units to serve the other areas of the school. The Dual Duct HVAC equipment was unique to the County and the only school to have this HVAC system type, challenging the maintenance department. The school went through a Performance Contracting Program around 2011 when original pneumatic controls were retrofitted along with other upgrades; however, the utility usage for this school was still nearly twice the national average.

ZDS' goal for the design of HVAC, roof replacement, and lighting renovations was to reduce the overall energy usage by 50% while improving comfort and Indoor Air Quality. Many HVAC systems were analyzed and energy modeled, resulting in selecting a closed-loop geothermal HVAC system using indoor high-efficient heat pumps, eliminating the Dual Duct units, and replacing them with VAV Dedicated Outside Air Units (DOAS). Air cleaning technology was incorporated into the HVAC systems. The existing ductwork from the dual duct system was able to be reused and then VAV boxes were added with Demand Control Ventilation. Other HVAC systems included both water source heat pumps and packaged VAV Rooftop Units. The project included replacing and retrofitting the existing lighting systems with high-efficiency LED sources. The locker areas in the school were converted from heating/ventilation only to full HVAC. The project also included roof replacement concurrent with other renovations.

ZDS provided the design and assisted with the bidding and Construction Administration process. Work was designed/phased so construction could occur while the school was in use. In addition to energy savings, the systems are reducing long-term operating and maintenance costs.

High Performance Design using ASHRAE Advance Energy Design Guides saved **64% less energy for HVAC/Lighting systems** from the base years' usage and

Incorporates Air Cleaning Technology in HVAC System.

EUI reduction from 84 to 30.6 and Energy Star Certified!

Construction Costs: \$17,400,000 completed in 2023 School Size: 189,318 square feet Contact: Chuck Smith, Director/Support Services: (304) 348-6148



Kanawha County Commission Judicial Building & Courthouse







"No one else could identify the MEP problems even though many had tried. Yet, ZDS provided an excellent evaluation while working well with our Judges and staff for a very successful project. We use them for all our challenging work." - Kanawha County Commissioner



ZDS assisted in identifying a phased approach to addressing and defining Indoor Environmental Quality (IEQ) issues and modifications for the Kanawha County Courthouse.

Total Judicial Bldg. Project Costs:\$13,807,000ZDS Team Project Cost:\$6,737,000Annex Project Size:118,400 ft² latest projects completed 2023Client Reference:Mike Moles, 304-357-0103

ZDS has worked with the Kanawha County Commission on various projects since 1998. The Scanning, most recent involved 3D design/commissioning for **HVAC** & Roof Replacement incorporating cleaning air technology into new energy efficient HVAC system, renovations to the 3rd floor and upgrades to the building smoke control system. All major HVAC equipment and the roof replacement work were completed in 2023 on time and in budget. Other past work includes engineering planning, design, bidding and construction administration services for the renovation of the 95,400 ft² Judicial Building and a 23,000 ft² addition using the ground floor of the parking garage connected to the Judicial Building. The facility includes circuit courtrooms, jury deliberation, attorney conferencing, witnessing, court clerical staff, public research, adult probation, prosecuting, maintenance. voter registration, court administration, and all public areas. The addition included a new entrance, security checkpoint, and lobby to accommodate a building expansion for Juvenile Probation and Family Court.



www.zdsdesign.com



Robinson Grand Performing Arts Center

Clarksburg, WV

Renovations & Additions Area: 45,000 ft² **Construction Cost:** \$17,000,000

EPAct Qualified renovations resulted in <u>over a 50% reduction</u> in energy over ASHRAE 90.1-2007 standards and an EUI <u>below</u> the national medium.

The design includes Dedicated Outside Air Systems with energy recovery, coupled with VRF for optimal zoning to fit within very limited space supplemented with high performance condensing gas fired boilers and Variable Water Volume pumping. HVAC systems include comprehensive DDC controls with demand control ventilation, high performance fan wall system for redundancy/acoustic performance on VAV custom units serving stage/performance hall. LED lighting throughout provides uncompromised lighting quality. Energy efficient design recognized the envelope upgrades limitation due to the historical preservation grants while significantly reducing operating costs.



The historic Robinson Grand Theater was originally built in 1913 and eventually closed to the public in the year 2000. When the City of Clarksburg purchased the building in 2014, extensive renovations were needed to re-open the theater and **ZDS** was hired for planning and evaluation. This includes all **NEW** HVAC/Electrical/Plumbing/FP upgrades for the 45,000 ft² building. 3D-Scan-to-BIM of the existing facility was invaluable to develop the comprehensive existing conditions. Now called the **Robinson Grand Performing Arts Center**, this beautiful award winning historic theater has been brought completely back to life! Resurrection through adaptive reuse brings out the best the City of Clarksburg has to offer through the Robinson Grand Performing Arts Center.





Project Cost: \$1,398,100 Size: 41,300 ft²; Date Complete: 2022

Study/Evaluation, HVAC Renovations, Lighting Upgrades, Fire Protection, Electrical Renovations, 3D Scanning

Client Reference: Kenneth Goodson; (304) 561-6337

ZDS provided comprehensive professional engineering services for HVAC renovations at the Brushfork Armory located at 2915 Old Bramwell Road near Bluefield, West Virginia. Project included providing Variable Refrigerant Flow (VRF) systems for administration, offices, and other selected areas. Systems were comprised of indoor VRF cassette units, outdoor condensing units and a roof mounted DOAS unit to provide Code required ventilation air. The twinned condensing units were provided to reduce issues when in defrost cycle by allowing one side at a time to be in defrost mode. Our services included preparation of Construction Bid Documents, assistance with Bidding and Construction Administration through completion of the contract.



Engineering for State & Local Government Facilities

ZDS engineering project experience includes facilities registered as official Historic Buildings



Hopemont State

Hospital

WVDHHR hired ZDS to engineer the upgrades for three historic hospital facilities in three separate locations. ZDS successfully completed the projects while meeting the requirements of the State Historic Preservation Office (SHPO).





Renovations included HVAC, fire safety, energy efficient lighting, plumbing, indoor air quality and electrical power engineering.



University of Charleston The Russell and Martha Wehrle Innovation Center





ZDS evaluated the University of Charleston's existing Eddie King Gym and adjacent Gorman Hall Mechanical and Electrical systems' infrastructure while using 3D scanning to capture "built conditions". The evaluation findings and recommendations were presented to UC prior to beginning the design phase of the proposed Project for decisions on phasing the project since the needs exceeded available funds. The Project consisted of major renovations to the Gvm to meet NCAA competition requirements, interconnection/reconnection of MEP systems impacting the Gorman Hall facility, and a 30,000 SF addition to the front of the facility that is known as the Russell and Martha Wehrle Innovation Center. The facility consists of classrooms, offices, flexible meeting areas, and a large two-story Innovation Center space. Mechanical work included new chiller and boiler plants with pumps, accessories, and distribution piping as well as air handling units, DDC Controls, new domestic and fire protection water services, new gas service, domestic water heating equipment, extensive plumbing fixtures/showers/lockers. Electrical work included new electrical service from the campus 12.5 kv distribution loop, switchgear, distribution, and branch panel boards, and new energy-efficient LED lighting systems.

Gary Boyd, Director of Facilities University of Charleston (304) 357-4871





Construction Cost: \$17,000,000





Kanawha County Schools Ben Franklin Career Center HVAC/Roof Renovations

The **ZDS** team conducted an extensive study and performed a 3D Scan-to-BIM of the facility to develop comprehensive existing conditions and assist KCS with procuring SBA funds. The work was done in two (2) phases to replace the aging HVAC equipment, ductwork, and piping. It included electrical upgrades accommodate to the new equipment, new lighting throughout, roof replacement, and new exterior overhead doors for the shops. **ZDS** provided Design, Bidding, Construction Administration, and services. Commissioning Work was designed and phased so construction could occur while the school was in use.



ZDS involved the Faculty and Staff in the design to address specific HVAC, Electrical needs and Future IT Expansions. Specialized custom energy-efficient HVAC was included to meet the challenging comfort and Indoor Air Quality needs for the Welding, Machine, Wood, Sheetmetal, HVAC, Diesel and Heavy Equipment Shops and the remaining school. HVAC systems include 100% dedicated outside air systems (DOAS) with energy recovery.

The project qualified for EPAct for energy efficient HVAC design while <u>using over 27.3% less energy for</u> <u>HVAC</u> and over <u>60% less energy for Lighting</u> than schools designed using ASHRAE 90.1-2007.

Project Costs: \$9,651,722 with SBA Funding \$6,992,759 School Size: 78,050 square feet Contact: Chuck Smith, Director: (304) 348-6148 Charles Wilson, AIA, (Retired): (304) 533-6149



Piedmont Elementary School HVAC Renovations

ZDS performed MEP design, 3D Scan-to-BIM, bidding and CA services for the replacement of an existing custom multizone unit, associated DDC controls and refurbished other HVAC units that had failed and were in need of constant maintenance/repairs. The work included necessary electrical modifications to serve the new rooftop unit. Project was completed within the budget allocated by the County.

The project qualified for EPAct for energy efficient design while <u>using over 27% less energy for HVAC</u> than schools designed using ASHRAE 90.1-2007.

Project Costs: \$352,090, Project under budget! School Size: 31,500 square feet Contact: Chuck Smith, Director: (304) 348-6148 Charles Wilson, AIA, (Retired): (304) 533-6149



Tyler County Schools Tyler Consolidated Middle/High School HVAC Upgrades, Auditorium Additions/Renovations









The project qualified for EPAct for energy efficient design, using **over 35% less energy** than schools designed using ASHRAE 90.1-2007.

ZDS provided professional engineering design, bidding, construction administration, and commissioning services for HVAC upgrades at the Tyler Consolidated Middle/High School to meet Indoor Air Quality and today's energy codes. The initial step in the project was to provide engineering investigations of existing conditions where **ZDS** performed 3D Scan-to-BIM for reliable and accurate 3D capture of "built" conditions to use in design, bidding, and construction. The demolition and new work to be included in **Phase I** of the project included two (2) new highly efficient chillers piped so they could be used even during winter months, three (3) new high-efficient condensing boilers, variable water volume hydronic pump system, VAV Air-Handling Units, VAV Blower Coil Units, Fan Coil Units, Energy Recovery Ventilators, DDC control upgrades, select new hydronic piping and ductwork for the equipment, exhaust fans, electric work associated with serving the new HVAC system equipment and new electrical panel-boards. **Phase II** work includes DOAS units for classrooms, air cleaning technology, and lighting upgrades to LED. Also, it includes renovations to the auditorium to performance hall standards, providing a highly efficient programmable lighting system and high-performance audio sound system, which is a showcase for the community and the best auditorium for a WV school.

Estimated Phase I Project Costs: \$4,796,903, SBA funding \$3,698,578 Estimated Phase II Project Costs: \$11,515,000 Date Completed: Phase I was completed in 2019; Phase II completion in 2024 School Size: 188,156 square feet Contact: Ms. Amanda Kimble, Dir. Child Nutrition, Facilities & Support Services (304) 758-2145 ext. 111, akimble@k12.wv.us



COMMISSIONING



The Prince Jonah Kūhiō Kalaniana'ole (PJKK) Federal Building and United States Courthouse Honolulu, Hawaii



130th Airlift Wing at Yeager Airport, Phase I and Phase II: Aircraft Maintenance Fuel Systems Hangars and Shops

Awarded a **LEED Silver Certification** for each of the two phases

"ZDS's commissioning services were invaluable in helping us understand our facility and ensure the systems were installed as intended and optimized for long-term operating benefits. We would recommend them again!" - Captain Harry Netzer, WVANG Project Manager



- CAMC General Division, Memorial Division & Women & Children's Hospital
- ✓ General Motors (GM) of North America
- Maryland Calvert County Indoor Aquatic Center
- Montgomery County Departments of Correction and Police
- ✓ Roane General Hospital, WV
- Ohio University Chillicothe Campus, Stevenson Library and Bennett Hall

Harvard University Arnold Arboretum Weld Hill Research and Administration Building

LEED Gold Certified

- Santa Ana Federal Building Renovations
- University of California, Davis School of Veterinary Medicine Instructional Facility
- Washington & Lee University
- ✓ William R. Sharpe Jr. Hospital
- WV Museum of Culture and Natural History
- WV State Capitol Complex
- WVU—Downtown Campus
- United Hospital Center



EXTERIOR FAÇADE RESTORATION MAIN CAPITOL BUILDING

Charleston, West Virginia



Exterior façade restoration included cleaning, pointing, and repairs to the limestone and terra cotta components, windows and doors.

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Portions of the limestone cornice were damaged to the point that they fell when work was being conducted and had to be pinned back in place.





Other repairs included various spall repairs, pinning and epoxy injection of larger cracks and lifting and pinning keystones over windows.



STRUCTURAL ENGINEERING, INC.

STRUCTURAL INVESTIGATION MAIN CAPITOL BUILDING DOME

Charleston, West Virginia



The structural steel in the lantern level shows evidence of deterioration. Project included probing to determine extent of deterioration and preparation of plans and specifications for repairs.



The structural steel after being repaired and the regilding complete. Project included returning the dome to the original Cass Gilbert color scheme.



AIA New York State Merit Award 2006

Removal of one decorative column wrap indicated that back-up structure was severely deteriorated. Members were replaced with new galvanized components.

CAS

STRUCTURAL ENGINEERING, INC.



Deterioration of steel supporting sheet metal exhibited such deterioration that portions of the steel have disintegrated.



Concrete at the railing level was hidden from view and repaired once the sheet metals was removed and the deterioration was found.





Completed dome restoration shows the original sheet metal detail on the previous lead coated copper sheet metal. The lead coating was compromised over the years. As a result, a coating system had to be applied to protect the copper sheet metal.



UPSHUR COUNTY COURTHOUSE STONE COLUMN RESTORATION

Buckhannon, West Virginia



The structural sandstone columns were coated with a cementitious coating that helped to deteriorate the natural stone by trapping moisture within the stone.

After the coating was removed, additional areas of the columns and bases required extensive repairs.





The repairs included pinning the columns across cracks, building up architectural elements with Cathedral Stone Jahn Repair Mortars, and also included pinning new stone to the original host stone.





AIA West Virginia Honor Award 2008

ROBINSON GRAND THEATRE RESTORATION AND ADDITIONS

Clarksburg, West Virginia



This early 1900's structure was devastated by fire and partially re-built in 1939. The front portion of the building was salvaged, and the rear of the auditorium and stagehouse were reconstructed. This structure is listed on the National Register of Historic Places.

The design included a large two-story addition to the side to provide dressing rooms for performers on the 1st floor and conference space on the 2nd floor. On the other side of the original building was another two-story addition with a stair tower and electrical rooms. Both additions were supported on deep foundations and grade beam with structural slabs.







SECTION IV.

Proposed Team Staffing Plan

Team Certifications Team Resumes



Team Staffing Plan







Certifications



Better

ANSI







Todd Zachwieja, PE, CEM, LEED AP

Todd has over 45 years of experience involving the analysis, design, construction management and specifications for mechanical engineering, heating, ventilating, air conditioning, plumbing, fire protection, electrical and lighting, as well as indoor environmental quality analysis, building system commissioning and forensic engineering for educational, governmental, military, commercial, industrial and healthcare clients. He is also recognized as a campus master planner for utility infrastructure providing master planning for the Technology Park in South Charleston and at many universities, hospitals and the State of WV Capitol Complex.

Prior to starting a consulting engineering firm, Todd Zachwieja coordinated comprehensive energy conservation programs resulting in annual energy savings of millions of dollars. He has managed a profitable regional office for one of the country's largest energy companies that service the southeastern United States. Todd also developed computer modeling programs for building energy analysis and monitoring. He has been invited as an industry leader to present technical papers and speak at professional conferences both regionally and nationally.

Todd selected and designed the pilot project for one of the largest geothermal heat pump applications in the Eastern US including designing custom geothermal rooftop AHU's. He has retro-commissioned HVAC systems for millions of square-feet for facilities located in 10 states. He has been involved with many commercial, healthcare and industrial structures including high-rise building renovations. Todd designed renovations to many facilities which received *Energy Star Certifications* placing them in the nation's top 25% for energy efficiency. *The College Planning and Management Magazine* featured Todd and his work with a major university for the performance contracting programs that save millions of dollars in energy and operating costs. Most projects also qualified for EPAct which requires buildings use over 50% less energy than buildings designed using ASHRAE 90.1.

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GOVERNMENT/COMMERCIAL PROJECT EXPERIENCE

- Bank One/Chase Towers
- Bayer Material Science
- Calvert County Aquatic Center, MD
- Charleston Area Medical Center
- Chief Medical Examiners Office Retrofit
- Culture Center, HVAC & Fire Protection,
 WV State Capitol Complex
- General Motors Corp. Re-commissioning
- Harvard University Research Laboratory
- Hopemont Hospital, WVDHHR
- Jackie Withrow Hospital, WVDHHR
- Jackson County Courthouse Annex
- Kanawha County Commission: Judicial Annex additions/renovations
- Kanawha County Courthouse
- Kanawha County Schools
- Laidley Towers
- Marshall University
- Mercer County Schools
- Mercer County Courthouse Annex
- Mildred Mitchell Bateman Hospital
- Olin Corporation
- Pocahontas County 911/EMS Center
- Public Service Commission of WV
- Raleigh County Schools
- Rhone-Poulenc

- Roane General Hospital
- Robinson Grand Performing Arts Theatre
- Santa Anna Federal Building, CA
- Tyler County Courthouse
- Tyler County 911 Center Net Zero
- Tyler County Schools
- Toyota Motor Manufacturer, WV Inc.
 - UC Davis Veterinary Medicine, CA
- Union Carbide/DOW
- United Center
- University of Charleston Innovation Ctr.
- William R. Sharpe, Jr. Hospital, WVDHHR
- World Trade Center, MD
- WV Air National Guard including Cx Fuel Cell/Maintenance Hangars at Yeager Airport - *LEED Silver Certified*
- WV Army National Guard
- WV Capitol Complex Renovations
- WVDHHR State-wide Hospitals
- WV DOH Testing Lab
- WV Division of Natural Resources
- WV Division of Protective Services
- WV Higher Education Authority
- WV General Services Division
- WV State Capitol Complex Renovations
- WVU Health System



PROFESSIONAL REGISTRATIONS

Professional Engi	neer:
Florida	
Georgia	
Kentucky	
Maryland	
North Carolina	j
Ohio	
Pennsylvania	
South Carolina	
Virginia	
West Virginia	

Fire Investigation Certification under the direction of Peter Vallas, Sr.



Certified Energy Manager (C.E.M.) National Certification No.



LEED Accredited Professional, National Certification through USGBC No.

EDUCATION

Masters of Science in Engineering Management from West Virginia University College of Graduate Studies.

> Bachelor of Science in Mechanical Engineering from West Virginia Institute of Technology.



Todd Zachwieja, PE, CEM, LEED AP

PROFESSIONAL AND COMMUNITY AFFILIATIONS

Past President 2013-14, current Governor - WV ASHRAE Chapter, Served as ASHRAE's Energy and Technical Affairs Chairman for six years. Recognized by ASHRAE Region VII in 2014 with the David Levine Award of Excellence, Presidential Award of Excellence

Recognized by the International Who's Who of Professionals Recognized nationally as West Virginia's Business Man of the Year Recognized by AEE nationally in 2007 as a Legend in Energy Recognized by AEE nationally in 2008 as a Charter Legend in Energy Charter Life Member of the Association of Energy Engineers Professional Affiliate Member of the American Institute of Architecture Associate Member West Virginia Society for Healthcare Engineering Member of the International Code Council Member of the National Society of Professional Engineers

OTHER RECOGNITIONS

Selected by WVU and the WV Division of Energy to train Code officials and the design community on ASHRAE 90.1 State Energy Code

Presented at regional and national conferences including the annual National System Commissioning Conference

Contributing editor and served on the Editorial Review Panel for "The Handbook of Building Management and Indoor Air Quality"

Contributing editor "Ventilation for a Quality Dining Experience"

Contributing editor and served on the Editorial Review Panel for INvironment Professional, Power Prescriptions and other publications and articles featuring Indoor Air Quality (IAQ) and MEP engineering systems

Energy Star Certified for facilities in the nation's top 25% of energy efficiency

1st Place 2014 ASHRAE Technology Award, Region VII

LEED Silver Certified WVANG Fuel Cell/Maintenance Hangar, Charleston, WV

LEED Gold Certified Harvard Arboretum, Boston, MA

First ASHRAE bEQ certified building in West Virginia, 2015

1st Place 2023 ASHRAE Technology Award, Region VII



























Ted Zachwieja III, PE, CEM

Ted, a third generation engineer and Principal in the firm, has over 20 years of experience in building construction design industry that includes award winning designs including the first Net Zero 911 Center in WV and technology awards for design innovation in multiple facilities. Innovation in HVAC, Plumbing, Fire Protection, lighting design/controls, technology, engineering design, communication methods and management of the design process are the areas of his expertise. As a pioneer and a believer in technological processes, Ted has championed Integrated Design Practices and Commissioning that has become the fabric of ZDS's day-to-day operations.

Ted develops ZDS's 3D Scanning and BIM services which have assisted in collecting key existing conditions for renovation projects, forensic engineering, historical preservation, and high definition reality capture. Ted has in-depth experience on collection, registration, and scan to BIM processes. He has provided training and developed materials for best practices when using 3D scan data. Ted's 3D scanning experience includes governmental, educational, healthcare, industrial, and commercial facilities. He also has experience in speaking on how 3D laser scanning impacts our industry today.

Ted is the Engineer-of-Record for design projects. As Engineer of Record he is responsible for all aspects of the project and takes a hands-on approach to the overall management, design and construction of the project. He works well with all stakeholders involved throughout the entire project lifecycle.

As Chief Technical Officer Ted develops and deploys a strategy of forward thinking and strategic development for ZDS' Integrated Design Processes, research and development into new technologies for improving quality of services for our clients.

Ted's project experience includes design and commissioning for electrical, lighting, security, IT, A/V, heating, ventilating, air conditioning, plumbing, fire protection, and acoustical systems for educational, healthcare, industrial and commercial facilities. His experience encompasses working both on new construction and renovation projects. He also is experienced in historical facilities including theatrical. He has significant experience in designing, commissioning and implementing efficient lighting and HVAC systems for various commercial, healthcare and educational facilities.

Ted maintains an active membership in the ASHRAE professional society and also has a lifetime membership in the Association of Energy Engineers. He maintains an active continuing education towards today's standards and codes as well as participates in ASHRAE at both a local and society level. He served on the Electronic Communications Standing Committee with ASHRAE. He has designed renovations to existing facilities which received *Energy Star Certifications* placing them in the *nation's top 25% of energy efficiency* facilities.





PROFESSIONAL REGISTRATIONS

Professional Engineer:

Florida West Virginia

Certified Energy Manager (C.E.M.) National Certificate No.



EDUCATION

Bachelor of Science in Mechanical Engineering from Rochester Institute of Technology, Rochester, NY

AWARDS AND RECOGNITIONS

Awarded 2012 Legend in Energy by the Association of Energy Engineers

Awarded acceptance into ASHRAE's 2015 Leadership University

ASHRAE Blue Ribbon Award of Excellence Co-Author at Autodesk University

> 1st Place 2023 ASHRAE Technology Award, Region VII

Energy Star Certified for facilities in the Nation's top 25% of energy efficiency



Ted Zachwieja III, PE, CEM

RELEVANT PROJECT EXPERIENCE

- WV State Capitol Complex Bldgs. 1, 3, 5, 7, 8, & 9 Renovations and #3 & #4 Cx
- Kanawha County Judicial Building Renovations and Cx EPAct Qualified
- Office of Chief Medical Examiners Renovations and Commissioning
- CASCI Building Electrical Renovations, Charleston WV
- WV Air National Guard Maintenance Hangar and Fuel Cell Hangar
- University of Charleston Virtual Dissection Lab, Innovation Center, Gorman Hall/ Eddie King Gym Renovations campus natural gas, medium voltage and water upgrades.
- Marshall University, Jomie Jazz, Harris Hall, Smith Hall Renovations
- WV Higher Education Policy Commission, S. Charleston Tech Center Master Planning
- Ben Franklin Career Center Renovations EPAct Qualified
- Glade Middle School Energy Star Certified
- Kanawha County Schools County-Wide includes Master Planning, Renovations
- New laeger Elementary Schools Energy Star Certified
- Pendleton Co Middle/High School, North Fork Elem Renovations EPAct Qualified
- Pocahontas County 911/EMS Center
- Princeton Middle and High School HVAC Renovations Energy Star Certified
- Raleigh County Schools County-Wide
- WVDHHR Master Planning, Renovations for seven healthcare facilities
- William R. Sharpe, Jr. Hospital Additions/Renovations & Cx EPAct Qualified
- Riverside High School HVAC/Lighting Renovations Energy Star Certified
- Tyler County 911 Center Net Zero
- Tyler County Courthouse Additions, Renovations and Commissioning
- Tyler Consolidated Middle/High School HVAC Renovations EPAct Qualified
- Meadowbrook, Servia, White Sulphur Springs Rest Areas for WV DOT
- World Trade Center, Renovations, MD
- West Virginia University Renovations
- WV DHHR Healthcare Facilities master planning, additions/renovations, lighting renovations - *EPAct Qualified*

OTHER RECOGNITIONS

Presented and co-authored at regional and national conferences

Energy Star Certified for facilities in the nation's top 25% of energy efficiency for many facilities

1st Place 2014 ASHRAE Technology Award, Region VII

First ASHRAE bEQ certified building in West Virginia, 2015

1st Place 2023 ASHRAE Technology Award, Region VII

ASHRAE Blue Ribbon Award of Excellence

2012 Legend in Energy by the Association of Energy Engineers

2015 ASHRAE Leadership University Recipient









Professional Affiliations

Member of ASHRAE WV Chapter

Prior Membership Promotions Chair WV ASHRAE Chapter

> Prior Chapter Secretary WV ASHRAE Chapter

Lifetime member of the Association of Energy Engineers

> Associate Member WV Society for Healthcare Engineering











Jim Watters

Jim has over 50 years of experience in design and implementation of lighting, HVAC, plumbing and electrical systems including nine years in the construction industry. He has a comprehensive knowledge of construction documents, contracts, and development of cost estimates, budgets and schedules. Jim's strengths reside in his ability to manage projects and people in an organized and cost-effective manner. Jim has been involved with the design and production of mechanical and electrical drawings including HVAC, plumbing, fire protection, lighting, electrical power, fire alarm and specialized systems. He has worked with and managed engineers in projects for health care, educational and commercial buildings in the states of West Virginia, Florida, Maryland, Pennsylvania, Ohio, Kentucky, Virginia, Georgia, New York, Arizona, Illinois and Massachusetts.

Jim has extensive experience in energy savings' programs for lighting, HVAC, plumbing and electrical systems in hospitals, state and government office buildings, school systems, and manufacturing facilities, as well as managing performance contracts for a large hospital campus in Georgia that included the conception, design and construction administration for the installation of a 1.5 Megawatt emergency generator to provide peak shaving/load shedding to save on the campus utility costs as well as provide emergency power to the facility. He has previously provided design and Construction Administration services for a multitude of labs of varying used for Charleston Area Medical Center (CAMC). Through the years, Jim has researched and implemented into practice International Building Codes, NFPA Codes, National Electrical Codes, Life Safety Codes, IES standards, AIA Guidelines for Design and Construction, and ADA guidelines. His involvement in construction through the years has been mainly from the design side of the industry with a 9 year stint working for a contracting firm at the turn of this century. His experience includes coordinating with Architects, Owners and Agencies including an excellent relationship with the office of State Fire Marshal.

GOVERNMENT/COMMERCIAL PROJECT EXPERIENCE

- Bluefield Area Transit Authority
 Administration and Maintenance Facility
- Kentucky Judicial Center, Boyd County
- CAMC Various Labs
- Chief Medical Examiners Office
 Lodox Renovations
- Coal Heritage Highway Authority
- Chase Towers (formerly Charleston National Bank)
- Culture Center Fire Alarm/Sprinklers, WV State Capitol Complex
- Department of Transportation Rest Area prototype
- Department of Transportation Welcome Center prototype
- Fenway Park Lightning Protection/ Grounding Study, Boston
- Glenville State College
- Hopemont Hospital, WVDHHR
- Jackie Withrow Hospital, WVDHHR
- Jackson County Libraries Renovations
- Kanawha County Commission Judicial Annex Renovations
- Laidley Towers
- Meadowbrook Rest Areas
- Morgantown Welcome Center
- Pocahontas County 911/EMS Center
- Redmond House, WVDOT

- Rhone-Poulenc New Admin. offices
- Robinson Grand Performing Arts Theatre
- Sacred Heart Pavilion and Daycare Ctr
- St. Patrick's Church
- Shawnee Park Clubhouse
- Stonewall Jackson Marina Renovations
- Tucker County Board Office Boiler Retrofit
- Tucker County Courthouse
- Tyler County Courthouse
- Tyler County 911 Center Net Zero
- University of Charleston Innovation Ctr
- William R. Sharpe, Jr. Hospital, WVDHHR
- World Trade Center, MD
- WV Air National Guard including Cx \$45M Fuel Cell/ Maintenance Hangars at Yeager Airport – LEED Silver Certified
- WV Children's Home, WVDHHR
- WV Department of Military Affairs, Public Safety Maintenance Facility, Eleanor
- WV Department of Transportation Burnsville Rest Area and Domestic Water Pumping Station - AIA Merit Award Recipient
- WV State Capitol Complex Renovations to Buildings 1, 3, 4, 5 & 7
- White Sulphur Springs Welcome Center





PROFESSIONAL AFFILIATIONS

Member of the National Fire Protection Association (NFPA)



Member of the Health Care Section of the NFPA

Past Member of the Illuminating Engineering Society (IES)

Past member of the American Society of Plumbing Engineers (ASPE)

> Past member of the Institute of Electrical Engineers (IEE)

OTHER RECOGNITIONS

Energy Star Certified for facilities in the Nation's top 25% of energy efficiency



Paul O'Dell, PE

Paul has 30 plus years of engineering experience involving the analysis, design, project management, specifications' writing and construction management on many projects throughout the region. This experience includes heating, ventilation, air conditioning (HVAC), plumbing, electrical systems and lighting for governmental, commercial, educational, healthcare, industrial and military facilities. He also has knowledge and experience with indoor environmental quality assessment, recommended remedial work and design of the necessary modifications in various types of buildings.

Paul assisted in the design and implementation of the pilot project for one of the largest geothermal heat pump systems in the mid-Atlantic region. He has also been involved in the design of facilities that have received the Energy Star Certification placing them in the nation's top 25% in energy savings for similar buildings and systems as well as his contribution as part of a large team effort performing mechanical systems' retro-commissioning at numerous automotive manufacturing facilities in North America.

His project experience is wide-ranging and includes the development of scope, design criteria and budget conscious designs. Working with other design professionals and through rapport with the clients he has conducted design peer reviews, construction budget and project schedule overview, Construction Administration and closeout of projects.

GOVERNMENT/COMMERCIAL PROJECT EXPERIENCE

- WVARNG Armory/Annex Bluefield
- WV Capitol Complex Central Bldg. #3 Renovations and Campus Central Boiler Plant
- Bruceton Bank
- Bank One
- Culture Center, WV State Capitol Complex
- Cuissets Residence
- Camp Dawson barrack/mess hall
- DOT Huntington District II Headquarters Renovations
- Yeager Airport Terminal Expansion/ Renovation
- DOH Testing Lab
- GMC Assembly Plants in Lordstown OH, Janesville WI, Pontiac East MI, Bowling Green KY, Arlington TX
- Harrison County Bank
- IMC Office Bldg.
- Riverside High School Renovations
- Chief Medical Examiners Lodox CT Scanner Renovations
- Pocahontas County 911/EMS Center

- Kanawha County Commission, Judicial Annex Renovations
- Mercer County Courthouse
- Tyler County Courthouse Additions/ Renovations
- Tyler County 911 Center NET ZERO
- Appalachian Tire
- Laidley Towers
- Robinson Grand Performing Arts Theater
- USDA Forestry Building
- University of Charleston Innovation Center Additions/Renovations
- World Trade Center, MD
- William R. Sharpe, Jr. Hospital Additions/Renovations, WVDHHR
- WV Capitol Complex Bldg. #3 Central Boiler Plant Additions/Renovations
- Numerous K-12 School Renovations including Mercer, McDowell, Raleigh, Kanawha, Clay, Grant, Harrison, Marion, Pleasants, Pocahontas, Putnam, Summers, Tyler, Tucker, Upshur, Webster County Schools.





PROFESSIONAL REGISTRATIONS

Professional Engineer: West Virginia

EDUCATION

Bachelor of Science in Mechanical Engineering from WV Institute of Technology, Montgomery, WV (Graduated Cum Laude)

PROFESSIONAL AFFILIATIONS

Member American Society of Mechanical Engineers

Member ASHRAE

AWARDS AND RECOGNITIONS

1st Place 2023 ASHRAE Technology Award, Region VII



Mark Estep, PE



Mark has over 33 years of experience and is responsible for the design of commercial, institutional, and industrial mechanical and electrical projects. He works with architects, civil and structural engineers to coordinate design and construction documents. He is responsible for project specifications and submittal review. Mark holds Degrees in Engineering and Architectural Technology which provide more than engineered solutions. He designs solutions that incorporate essential and functional needs, as well as aesthetic, life-safety, and constructability considerations.

Before joining ZDS, Mark was the President and Principal Engineer of another firm where he provided mechanical and electrical engineering design and analysis for commercial construction projects and was responsible for acquiring new projects.

He analyzes systems to determine best value solutions. He evaluates proposed equipment and materials through submittals as well as conducts on-site progress and quality reviews.

PERSONAL COMMERCIAL/GOVERNMENTAL PROJECT EXPERIENCE

- General Motors Dealerships; Lewisburg, Charleston and Beckley
- Toyota Manufacturing Facility; multipurpose addition containing office spaces, medical treatment area, and weight room
- Toyota Manufacturing Facility; air handler replacement
- Buzz Food Processing Facility; New 12,000 sf facility includes offices, refrigeration, and abattoir spaces
- Summersville Hospital Operating Room HVAC upgrade
- Princeton War Memorial; HVAC Upgrade
- HIMG Medical Center; 150,000 sf renovation including a new Endoscopy Suite
- Brickstreet Insurance Headquarters; 86,100 sf renovation including elevator upgrade
- Beckley PSD; 3 Water Storage Tanks; Sweeneysburg Water Treatment Plant
- Culloden PSD; Water Storage Tank
- Shops at Kanawha Plaza; extensive renovation and tenant fit-up project of 195,000 sf shopping center
- Huntington Museum of Art; HVAC
 Renovations
- First Bank of Charleston; New four story building
- Charleston Housing Authority; dedicated outside air unit replacement for Lee Terrace and Carroll Terrance
- Shawnee Sports Complex; Six multipurpose fields and four baseball field complex with offices, concession stand and other amenities
- Charleston Housing Authority; boiler replacement and HVAC upgrade for Lee Terrace; Jarrett Terrace; Carroll Terrace; Switzer Center

- Clay County PSD; Water Storage Tank; Water Treatment Plant
- Upshur County Commission; Upshur County Courthouse Addition
- Putnam County Courthouse Complex; Sheriff's Office Building and the Main Courthouse Building HVAC upgrades
- Putnam County Schools; surveillance system design
- Willow I & II and Elk Village Senior Centers; Three new two-story senior apartment buildings
- Raleigh County Airport; Runway Lighting Upgrade
- Yeager Airport Construction Administration; Runway and Tarmac Repairs
- Huntington Housing Authority; New 50 Unit Apartment Building; Administration Building Renovations including elevator
- Maranatha Fellowship Church; New Annex Building
- State of West Virginia Bioterrorism Lab; Upgraded existing mechanical and electrical systems to Bioterrorism facility to current federal standards
- Tyler County Courthouse Additions/ Renovations
- Kellys Creek Bridge and Marmet Pony Truss Bridge Replacement
- WV Water Development Authority; New Facility
- WV Hygienic Lab; HVAC & Electrical Upgrades, including rabies, HIV, and TB laboratories
- WV Division of Motor Vehicles; Kanawha City
- Chief Medical Examiners Office Imaging Machine implementation



PROFESSIONAL REGISTRATIONS

Professional Engineer:

West Virginia

EDUCATION

Bachelor of Science Mechanical Engineering WV Institute of Technology

Bachelor of Science Architectural Engineering Technology

Associates of Science Mechanical Engineering Technology Fairmont State College



David Cotton, PE, LEED AP BD +C



David is a professional Mechanical Engineer with over 18 years of experience in the design and construction of over 500 projects having construction values up to \$35 million. His commissioning/ design experience ranges from commercial, industrial, institutional, healthcare, education, restaurant, retail, government, airport, and recreational facilities.

David collaborates well with fellow engineers, architects, owners, contractors, code officials and vendors to meet the goals and objectives. As a project manager he successfully manages projects from start to finish in design, bidding, and construction administration.

PROJECT EXPERIENCE

DOAS Systems

- Tyler County Courthouse Additions/Renovations
- Tyler County 911 Center Net Zero
- New Clendenin Elem Commissioning
- Independence Middle HVAC/Roof Renovations and Commission
- Shady Spring Middle School HVAC Renovations & Cx
- Maxwell Hill Elementary School HVAC Renovations & Cx
- Tyler Consolidated MS/HS Renovations and Commissioning
- Boy Scouts of America, Rex W. Tillerson Leadership Center
- Pocahontas County 911/EMS Center
- Saint Marys K-8 School Renovations
- New River Lab Facility
- Mylan Pharmaceuticals
- Fairmont Fire Station
- Westmoreland Community and Technical College, Indiana, PA
- HP Hood Addition/Renovations, Winchester, VA
- WVU Rehabilitation Center
- Mylan Park Aquatic Center

Other Project Experience

- Braxton County 911/EMS Center
- Dominion Office Building LEED Gold
- Mon General Hospital Echo Renovations
- Mon Health LTAC for Acuity

- Belmont County Commission Coroner, Records & Health Dept. Facility
- Clarksburg Comprehensive Care Clinic Renovations
- Jerry Dove Medical Office Building
- Medbrook Building HVAC Replacement
- Beckley Police Station
- Doddridge County Athletic Complex
- White Hall Public Safety Building
- Webster County 911/EMS Center
- Beitzel/Pillar Innovations Office Building
- Percival Hall Absorption Chiller and Cooling Tower Replacement
- Thrasher Engineering Office Building, Bridgeport
- Upshur County 911/EMS Center
- WVU Creative Arts Center Rehearsal Hall
- WVU Towers Dining Hall Renovations
- WVU Athletic Performance Center
- Dominion Office Building, Delmont, PA
- University of Pittsburgh Softball Practice Facility
- WVU Alumni Center
- WVU Biomedical Research Facility
- WVU Milan Puskar Locker Room Renovations
- NOAA GOES-R Supercomputing Center, Fairmont, WV
- WV Capitol Complex Bldg. #3 & #4 Renovations and Commissioning
- Harrison County 911/EMS Center
- Renaissance Academy, Morgantown



PROFESSIONAL REGISTRATIONS

Professional Engineer: West Virginia Maryland Virginia Ohio Pennsylvania

LEED AP BD+C Professional Accreditation NCEES Record Certificate

EDUCATION

Bachelor of Science Mechanical Engineering WV Institute of Technology

MEMBERSHIPS

WV ASHRAE, Past President

National Fire Protection Association

WV Society of Healthcare Engineers

Vineel Busa, PE, MSME

Vineel is a professional Mechanical Engineer with a Masters Degree in Mechanical Engineering and over 7 years experience in HVAC & Refrigeration. Technically sophisticated engineering professional with solid history of effective integration, and deployment of HVAC systems. Significant experience in designing, commissioning and implementing efficient HVAC systems for various commercial, healthcare and educational facilities.

Vineel is knowledgeable on HVAC systems, Controls, Heat Transfer, Refrigeration and Thermodynamic specializing in HVAC heating and cooling load calculations, Psychrometric and hydronic analyses and Energy modeling. He has applied that foundation in the MEP industry, manufacturing industry and the commercial industry. Vineel has a comprehensive knowledge of mechanical systems, principles and applications.

He is experienced hands-on in designing Variable Refrigerant Flow systems, Steam systems, Hydronic systems, Geothermal systems, DOAS and Building Automation systems. He is also proficient in Revit, AutoCAD, IESVE, Navisworks, and Autodesk Recap. Vineel is experienced in utilizing point clouds in the development of Scan to Building Information Modeling (BIM) and performing 3D scanning. Vineel is well-versed in technical specification writings and development of construction drawings. He has hands-on experience in performing Functional Performance Testing in leading Commissioning projects.

PROJECT EXPERIENCE

- WV Chief Medical Examiners Lodox CT Scanner Renovations, Commissioning
- WV Capitol Complex Campus Heating System Renovations Buildings #1, #3, #4, #5 and #7 over multiple phases
- WV State Capitol Complex Bldg. #3 Renovations & Bldg. #4 Commissioning
- New Belmont Co Commission Coroner, Records & Health Dept. Facility
- Oglebay Wilson Lodge Renovations
- Roane General Hospital Commissioning
- Veteran Administration Clarksburg Hospital & Huntington Hospital
- Kanawha Co. Judicial Building Renovations/Commissioning EPAct Qualified
- Marshall University—Jomie Jazz HVAC Renovations
- New Bluefield Elementary & Timberline Elem School Commissioning
- Clay County High School Commissioning EPAct Qualified
- New Clendenin Elementary Commissioning
- North Fork Elementary School HVAC/Roof Renovations, 3D Scanning, Scan-to-BIM and Commissioning - *EPAct Qualified*
- Pendleton County Middle/High School HVAC/Roof Renovations, 3D Scanning, Scan-to-BIM and Commissioning - *EPAct Qualified*
- New 911 Center high performance "Net Zero" facility
- Tyler County Courthouse Additions/Renovations and Commissioning
- Riverside High School HVAC/Lighting Renovations Energy Star
- New Spencer Middle School Commissioning
- New Clendenin Elementary School Commissioning
- WVARNG Brushfork Armory HVAC Renovations *EPAct Qualified*
- St. Marys High School Renovations
- Raleigh County Schools: 6 Schools Renovations & Commissioning
- New Pocahontas County 911/EMS Center





PROFESSIONAL REGISTRATIONS

Professional Engineer: West Virginia

EDUCATION

VIT University Bachelor of Science in Mechanical Engineering

Southern Illinois University Edwardsville Master of Science in Mechanical Engineering

University of Cumberlands Working on PhD in Project Management

AWARDS AND RECOGNITIONS

Certified by ASHRAE in HVAC Design Essentials & Applications

1st Place 2023 ASHRAE Technology Award, Region VII

Energy Star Certified for facilities in the Nation's top 25% of energy efficiency



Meher Meka, E.I.

Meher is an Electrical Engineering graduate with a Master's in Electrical Engineering specializing in power systems. He has over 10 years of experience designing power distribution systems, power system protection, lighting design, lightning protection, fire alarm, security systems, access controls, technology systems, and communication systems. He also specializes in the design of surveillance, access control, and security systems for government, judicial, 911 facilities.

Meher leads our team in solar power application design. He used his high-performance building knowledge to design and specify the equipment for West Virginia's first net zero 911 facility. The system involved aggregate net metering where the balance of the solar power generated was credited back towards the county courthouse.

PERSONAL PROJECT EXPERIENCE

- WV Capitol Complex Renovations Bldg.
 #1, #3, #4, #5 and #7
- WVArNG Brushfork ArmoryRetrofit
- Belmont County Commission Coroner, Records & Health Dept. Facility
- Blennerhassett Island Dock Study
- CEA office
- Coney Island Hot Dogs Central kitchen
- C.R. Hipp Industrial Warehouse
- Eucalyptus Wellness Company
- High Wire Distillery
- Kanawha County Judicial Bldg.
- Kimley Horne Charleston Buildout
- HSGS Solar Office Space
- JW Aluminum Upfit office space
- JMcLaughlin Upfit Retail Outlet
- Maple Street Office Building
- Mildred Mitchell Bateman Hospital
- North ForkElementary Retrofit
- Northwood Middle School
- Raleigh County Schools 4 Schools Renovations
- Oglebay Wilson Lodge Renovations

- Pack Rat Storage Bees Ferry Road
- Pocahontas Co 911/EMS Facility
- Pendleton County Middle/High School Renovations
- Sherwin Williams
- Orange Theory fitness
- South State BankRenovations
- St. Marys High School
- Steel City Pizza Cranes
- Stella Nova Cigar Factory
- Trimnal Mayers Law office
- Tyler County Middle/High School
- Tyler County 911 Center Net Zero
- Tyler County Courthouse Retrofit
- VA Hospital Clarksburg
- VA Hospital Huntington
- WVDOT Servia Rest Area
- Airforce Base Clinic
- Canadian Consulate office
- JBL Harman office space
- West Union WWTP & WTP
- Riverside High School Energy Star





PROFESSIONAL REGISTRATIONS

Certified Engineer in Training (E.I.T) Fundamentals of Engineering (F.E)

EDUCATION

UNC Charlotte Bachelor of Technology, Electrical and Electronics Engineering

> Master of Science Electrical Engineering

AWARDS AND RECOGNITIONS



Energy Star Certified for facilities in the Nation's top 25% of energy efficiency

Carol A. Stevens, PE, F.ASCE

Structural Engineer



EDUCATION

West Virginia University, BSCE, 1984 Chi Epsilon National Civil Engineering Honorary The Pennsylvania State University, ME Eng Sci, 1989

PROFESSIONAL REGISTRATION

P.E.	1990	Pennsylvania
P.E.	1991	West Virginia
P.E.	1994	Maryland
P.E.	2008	Ohio
P.E.	2010	Kentucky
P.E.	2013	Virginia

BACKGROUND SUMMARY

2001 – Present	President, Structural Engineer CAS Structural Engineering, Inc.
1999 – 2001	Structural Engineer Clingenpeel/McBrayer & Assoc, Inc.
1996 – 1999	Transportation Department Manager Structural Engineer Chapman Technical Group, Inc.
1995 – 1996	Structural Engineer Alpha Associates, Inc.
1988 – 1995	Structural Department Manager Structural Engineer NuTec Design Associates, Inc.
1982 – 1988	Engineer AAI Corporation, Inc.

PROFESSIONAL ASSOCIATIONS

American Society of Civil Engineers National Society of Professional Engineers American Concrete Institute American Institute of Steel Construction West Virginia University Department of Civil and Environmental Engineering Advisory Committee West Virginia University Institute of Technology Department of Civil Engineering Advisory Committee

EXPERIENCE

West Virginia, WVU Woodburn Hall: Structural repairs to clock tower of 1870's building on Downtown Campus at WVU. Clock tower was moved from Martin Hall in 1910. Building is on the National Register of Historic Places.

West Virginia, WVU Martin Hall: Structural repairs to wooden octagonal cupola of 1870 building, the first building constructed at Woodburn Circle at WVU. Building is on the National Register of Historic Places.

West Virginia, Marshall University Morrow Library: Performed evaluation of existing structural floor system and developed options to upgrade system.

West Virginia, West Virginia State University Phase II Housing: Designed foundations and roof framing for new university housing unit.

West Virginia, Sharpe Hospital HVAC Renovations: Designed framing for piping enclosures, tank and generator foundations, cooling tower foundations, steel structure support and other miscellaneous support designs and analyses for complete redesign of HVAC systems in existing facility.

West Virginia, Robinson Grand Theatre Restoration:

Completed analysis and design for complete restorations of historic theatre. Project also included design of large two-story addition for dressing rooms and conference space. Another two-story addition included a stair tower and electrical rooms. Both additions were supported on deep foundations and grade beams with structural slabs. Building is on the National Register of Historic Places.

West Virginia, Logan Middle: Structural analysis for HVAC upgrades.

West Virginia, Western Greenbrier Middle School: Structural analysis for HVAC upgrades.

PO Box 469 • Alum Creek, WV 25003-0469 PHONE 304-756-2564 FAX 304-756-2565 WEB www.casstruceng.com

West Virginia, Logan High School: Structural analysis for HVAC upgrades.

West Virginia, Smoot Elementary School: Structural analysis for HVAC upgrades.

West Virginia, Chamberlain Elementary School: Structural analysis for HVAC upgrades.

West Virginia, Hamlin PK-8 School: Structural analysis for HVAC upgrades.

West Virginia, Mabscott Elementary School: Structural analysis for HVAC upgrades.

West Virginia, Maxwell Hill Elementary School: Structural analysis for HVAC upgrades.

West Virginia, Shady Spring Middle School: Structural analysis for HVAC upgrades.

West Virginia, Independence Middle School: Structural analysis for HVAC upgrades.

West Virginia, Geary Elementary School: Structural design for modifications for new safe school entry.

West Virginia, Duval PK-8 School: Evaluation of structural elements of school for repairs or replacement.

West Virginia, Elkins High School: Structural evaluation report.

West Virginia, Chapmanville Primary School: Structural analysis for HVAC upgrades.

West Virginia, Mountain View Elementary HVAC: Structural analysis for HVAC upgrades. West Virginia, Mabscott Elementary School: Structural analysis for HVAC upgrades.

West Virginia, Maxwell Hill Elementary School: Structural analysis for HVAC upgrades.

West Virginia, Independence Middle School: Structural analysis for HVAC upgrades.

West Virginia, George Washington High School: Structural design of additions including 3-story classroom addition, new commons area and auxiliary gymnasium.

West Virginia, Sissonville High School: Structural design of auxiliary gymnasium for Kanawha County Schools.

West Virginia, Herbert Hoover High School: Structural design of new gymnasium for Kanawha County Schools.

West Virginia, Nitro High School: Structural design of new gymnasium for Kanawha County Schools.

West Virginia, South Charleston High School: Structural design of new gymnasium for Kanawha County Schools.

West Virginia, Logan Elementary School: Repairs to roof structure from wind damage.

West Virginia, Spencer Middle School: Structural design of new middle school.

West Virginia, Pendleton County MS/HS: Structural analysis for HVAC upgrades.

West Virginia, Chapmanville Middle School: Structural analysis for HVAC upgrades.



SECTION V.

References

Client Testimonial Letters



ZDS has worked on hundreds of projects in West Virginia. We encourage you to call the references listed below:

Mike Moles, Maintenance Director, Kanawha County Commission: (304) 533-7888

Chuck Smith, Director, Kanawha County Schools: (304) 348-6148 and for Kanawha County Judicial Bldg.

Gary Boyd, Director of Facility Services, University of Charleston & WVU: (304) 357-4871, garyboyd@ucwv.edu; worked on projects at both WVU and University of Charleston involving MEP systems since 1990's.

Kris Wilcoxen, Director of Plant Operations, WV DHHR: 304-993-0480, Kristopher.R.Wilcoxen@WV.Gov

<u>Greg Nicholson</u>, Retired COO, WV DHHR: (304) 552-0101, gregcnicholson@suddenlink.net.

Dale Freeman, Director of Facilities, Roane General Hospital: (304) 927-6345, dafreeman@rghwv.org.

Kenneth C. Goodson Jr. Facilities Maintenance Supervisor, NFG, WV Army National Guard: 304-561-6337















Gary Boyd MA CEFP

2300 MacCorkle Ave. SE | 304 357-4871 | garyboyd@ucwv.edu

March 12, 2024

To Whom it May Concern

I have worked with the ZDS design team on multiple projects which include a chilled water interconnect loop, the UC Innovation Center, the UC athletic arena, and most recently, the UC Virtual Dissection Lab.

The Dissection lab project was a fast-tracked project that had many innovative components that had to be perfectly aligned to ensure the lighting was correct, the cooling for the computers mounted in the ceiling was sufficient, and headsets were accessible and properly positioned to name a few. I was extremely impressed with the speed and efficiency that ZDS provided to design and complete this project over the Summer and have this innovative space ready for our students for the 2022 Fall semester. The cooling, lighting, equipment placement and aesthetics have performed flawlessly, ZDS designed a high-quality show piece for UC in record time.

ZDS also took on the task of developing the MEP for the new athletic arena and addition of the Innovation Center and new athletic offices. This project included 3D imaging of the space prior to construction. The project also included LED lighting, a chiller and chilled water distribution with a roof mounted cooling tower and roof mounted AHUs. The Wehrle Innovation Center and Athletic Arena have served UC extremely well over the past 6 years, the arena has become the choice location for the UC graduation ceremony since completion. The plumbing, electrical, and HVAC systems have performed extremely well due to the quality of the design and specifications that ZDS provided. I highly recommend ZDS for their impressive attention to detail, skilled design team, and commitment to their projects.

Gary Boyd - University of Charleston Director of Facilities



Michael Pickens 172 Oak Street Dunbar, WV 25064 (304) 400-9993

RE: ZDS Design/Consulting Services

I have had the privilege to work with ZDS Design/Consulting Services' principals and many of their staff since working at the School Building Authority in the 1990's in my roles at the School Building Authority to my current role as Executive Director of the Office of School Facilities at the West Virginia Department of Education.

When an emergency issue arose, they would immediately make themselves available to help. ZDS's principal, Todd Zachwieja, did not hesitate to board a helicopter during a weekend to help assess the damage to the State's school facilities when damaging floods occurred. Helicopters were the only way to reach many of the facilities because the roads had been washed away or were impassible. Anytime a challenging issue has arisen that no one knew how to resolve, ZDS has stepped up to solve the challenges. Their extensive engineering knowledge of energy efficient systems, HVAC, controls, lighting, power and plumbing systems has always been at the leading edge in the industry, providing innovative solutions that also minimize energy and operating costs. I have always considered their approach in engineering design and commissioning for buildings to be the best and would highly recommend them to anyone.

Their ability to work with the State Fire Marshal and other agencies – while guiding everyone to a practical design approach – always provided each project with the best value. They are much more than excellent design engineers; they also understand the importance of operating and maintaining equipment and have hands-on knowledge to troubleshoot and also commission to ensure our projects were a great success. Their combined engineering design and commission skills prove to be invaluable.

ZDS Design/Consulting Services was also selected to help the WV Department of Education and the School Building Authority in writing new codes and standards to raise the bar for the entire State. They were chosen because their projects were a success while we were having challenges with others. Todd Zachwieja was also asked to teach school facility staff members, and his reference books continue to be used today. I would always think of ZDS first whenever a challenge would occur, knowing I would get the best results possible.

I trust ZDS's staff in their technical expertise and their approach in solving challenging engineering issues and believe that anyone who uses them will be as satisfied as I have been. They are worth it!

Sincerely,

hickof F. Fraker

Michael E. Pickens



ELSWICK & ASSOCIATES, LLC

To Whom It May Concern:

I am distinctly honored to provide this letter of recommendation for ZDS Design/Consulting Services to your organization. I have known ZDS's principals and many of their staff since working with Ted and Todd Zachwieja at West Virginia Institute of Technology located in Montgomery, WV, from the 1970's, while I was the Physical Plant Director there. That relationship continues through today. Their knowledge of energy efficient systems related to Heating, Ventilating, and Air-Conditioning (HVAC), Building Automation Systems (BAS), lighting, power distribution, and plumbing systems has always been at the cutting edge of the industry. They have routinely provided innovative solutions to complex design challenges while minimizing energy and operating costs and enhancing maintenance efficiency. I have always considered their approach to engineering design and commissioning systems first for higher education, hospitals and schools to be superior and I would recommend them to anyone.

Throughout my career I have continued my working relationship with Ted and Todd Zachwieja and Jim Watters while I was Director of Facilities Management at Charleston Area Medical Center (CAMC), General Division, located in Charleston, WV. During that time, they provided mechanical, electrical, and plumbing (MEP), engineering, and construction administration services for all areas of CAMC's facilities. Their knowledge of health care code and practical design approach always provided the uniqueness required for the scope of the work. They understood the importance of operating and maintaining equipment and used their hands-on knowledge to ensure all our projects were on schedule and within budget. As a matter of fact, Todd led the first energy services performance contract in West Virginia. Through Todd's leadership, CAMC saved in excess of \$800,000.00 annually in energy costs and those savings were used for mechanical, electrical, and infrastructure upgrades at all three CAMC divisions. Ted, Todd, and Jim also assisted in many other projects at all CAMC divisions, including commissioning the work implemented as part of the energy savings program. Their combined engineering design and commissioning skills proved to be invaluable.

I also worked with ZDS Design/Consulting Services while I was Director of Facilities, Planning and Management at Washington & Lee University in the 1990's. They designed, acted as the construction project manager and commissioned the campus chilled water plant and distribution system to address the needs of the growing campus while fast tracking the project from start to finish in just nine months. I would always think of ZDS first whenever I was faced with a challenge, knowing that I would get the best technical expertise available.

> 513 Havana Dr. Charleston, WV 25311 304.542.8877

Likewise, ZDS helped establish one of the first performance contracting programs in the State of Ohio's higher education system for Ohio University, saving the Athens campus millions annually while the savings were used for the mechanical, electrical and building automation improvements to generate the savings.

I have the utmost confidence in the technical expertise, the collaborative approach and ethical standards of ZDS Design/Consulting Services. Furthermore, these individuals are truly honorable professionals. In this regard, if you have questions or need additional information, please don't hesitate to contact me.

Sincerely,

C.C.

Bill Elswick, MBA, CEO



SECTION VI.

Attachments

State of WV Agency Expression of Interest

Signature Certification





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

State of West Virginia Centralized Expression of Interest Architect/Engr

Proc Folder:	1417429		Reason for Modification:
Doc Description:	EOI: House Chambers De	ct	
Proc Type	Central Contract - Fixed A	Amt	
Date Issued	Solicitation Closes	Solicitation No	Version
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DEPARTMENT OF	ADMINISTRATION		
PURCHASING DIV	ISION		
019 WASHINGTC	N ST E		
CHARLESTON	WV 25305		
JS			
ÆNDÖR			
Vendor Customer	Code:		
Vendor Name: Z	DS Design Consulting S	ervices	
Address: 135 C	orporate Center Drive		
Street: Suite 53	2		
City: Scott Depo	ot		
State: WV		Country : USA	Zip: 25560
Principal Contact	: Ted A. (Todd) Zachw	vieja	
Vendor Contact P	hone: (304) 755-0075	Extension:	1001
FOR INFORMATIC Melissa Pettrey (304) 558-0094 melissa k pottrov@	ON CONTACT THE BUYE	R	

Vendor Signature X vera

FEIN# 550735995

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

DESIGNATED CONTACT: Vendor appoints the individual identified in this Section as the Contract Administrator and the initial point of contact for matters relating to this Contract.

(Printed Name and Title)Ted A. Zachwieja, Principal, CEO				
(Address)135 Corporate Center	er Drive, Suite 532,	Scott Depot, WV 25560		
(Phone Number) / (Fax Number)	(304) 755-0075	(304) 755-0076		
(email address) Todd.Zachiweja@zdsdesign.com				

CERTIFICATION AND SIGNATURE: By signing below, or submitting documentation through wvOASIS, I certify that: I have reviewed this Solicitation/Contract in its entirety: that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation/Contract for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that this bid or offer was made without prior understanding, agreement, or connection with any entity submitting a bid or offer for the same material, supplies, equipment or services; that this bid or offer is in all respects fair and without collusion or fraud; that this Contract is accepted or entered into without any prior understanding, agreement, or connection to any other entity that could be considered a violation of law; that I am authorized by the Vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on Vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

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

ZDS Design Consulting Services

(Company) <u>Hed A. Zachwieja</u> (Signature of Authorized Representative) <u>Ted A. Zachwieja, Principal, CEO</u> (Printed Name and Title of Authorized Representative) (Date) (304) 755-0075 (304) 755-0076 (Phone Number) (Fax Number) Todd.Zachwieja@zdsdesign.com

(Email Address)