

# STATE OF WEST VIRGINIA

## West Virginia Army National Guard Eleanor Readiness Center HVAC

### Expression of Interest to Provide Engineering Design Services

February 6, 2020

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WV PURCHASING  
DIVISION



281 Smiley Drive, St. Albans, WV 25177 / (304) 755-0075 / [www.zdsdesign.com](http://www.zdsdesign.com)

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# SECTION I.

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## Executive Summary Letter

February 6, 2020



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

Please accept our Expression of Interest to provide Professional Engineering Services for the ***Eleanor Armed Forces Readiness Center HVAC Renovations***.

**ZDS Design/Consulting Services** was founded in 1994 and recently celebrated their 25<sup>th</sup> anniversary; located at 281 Smiley Drive, St. Albans, WV 25177. The project will be assigned to **ZDS'** principal-in-charge of planning/design who will follow the **Project** from inception through design and has full authority to execute a binding contract on behalf of **ZDS: Todd A. Zachwieja, PE, CEM, LEED AP – Principal and CEO** of **ZDS Design/Consulting Services**; Telephone: 304-755-0075; Fax: 304-755-0076; Mobile: 304-545-4550; Email: [Todd.Zachwieja@ZDSDesign.com](mailto:Todd.Zachwieja@ZDSDesign.com); Website: [www.ZDSDesign.com](http://www.ZDSDesign.com).

**ZDS** founding members have over six decades of MEP engineering experience in West Virginia with a local understanding of your needs. We have extensive HVAC renovation experience, including phasing construction, to reduce potential disruptions. Our approach is different than the traditional role; **we have actual operational and design experience**. We design and can commission the Mechanical/Electrical systems. By commissioning the systems, we fine-tune them to actual conditions and assist the Owner's personnel after occupancy to improve comfort, provide training and reduce operating costs.

We believe our company is the right size to provide the level of service necessary and small enough to listen and care about your needs. **ZDS** is very active in keeping current with all applicable Codes and specifically with ASHRAE and energy efficiency standards. **ZDS** team members have held or currently hold officer positions in the West Virginia ASHRAE Chapter including Todd Zachwieja, Ted Zachwieja and Chase Thomas serving as President. We pride ourselves on being viewed as an extension of the client's staff and successfully incorporating pertinent information about their facility into any proposed solution.

**ZDS** engineering designs received the EPA's Energy Star® Certification. These buildings perform in the top 25 percent of similar facilities nationwide for energy efficiency while meeting stringent ASHRAE standards. We met the facility requirements while providing very energy efficient HVAC, lighting and power systems.



**ZDS** will provide comprehensive MEP engineering support for the proposed HVAC renovations on this Project. We are known as the region's best for HVAC renovations including successful projects with the WVArNG, State of West Virginia DHHR Hospitals, WVU, Ohio University, Marshall University, the West Virginia Capitol Complex and many others. Our corporate offices in St. Albans, West Virginia are a short drive to the Project site and each member of our staff brings unique strengths to the Project. We have the personnel and experience to provide the necessary services and, realizing the similarity of mission and the desire to serve West Virginia clients, we will be honored to work with you.

## **Project Goals & Objectives**

Renovations to the existing HVAC systems and replacement, or modifications, of the related facility controls on this Project may require upgrades in other infrastructure elements that must be taken into consideration during the design document preparation stage. We will perform field investigations to gather information on the existing systems, discuss concerns with onsite personnel, and review all available drawings and documentation that can be provided by the Owner. ZDS's 3D Scan-to-BIM is extremely effective for renovation projects in capturing built conditions that commonly don't show on original construction drawings which was successfully used on the recent Dunbar Armory HVAC renovations. Evaluation of the information will assist us in preparing a list of recommendations, including preliminary budgetary construction costs, to discuss with the WVArNG for the purpose of establishing the scope of the Project.

**ZDS's** hands on commissioning experience and operational knowledge of Building DDC controls systems would provide the expertise the WVArNG needs for a successful HVAC renovation/controls upgrade. Our proven experience in energy efficient renovations will bring options that improve comfort and provide long-term energy efficient solutions.

Different ideas for phasing of the construction will be discussed with the goal of minimizing disruptions to the daily operations of the facility. When scope has been determined, we will proceed with drawings and specifications to be reviewed with the Owner at 35%, 65%, 95% and ultimately at 100% for final Bid documents. The budgetary construction cost estimates will be updated at each review phase. Our services will continue throughout the construction period including Bidding, Negotiations and Construction Administration. **ZDS** has designed and coordinated upgrades for HVAC systems on many projects of all types and sizes including successfully phased construction activities in governmental facilities, hospitals and schools while occupied. We have the personnel and experience to provide the best services for design and coordination of difficult construction upgrades that require phasing activities.

**ZDS** has teamed with several West Virginia Architectural and Structural Engineering firms and would utilize their services as necessary for the ***Eleanor Armed Forces Readiness Center HVAC Renovations***. If hazardous materials are discovered, we work with an excellent and reputable environmental consultant on an "as-needed" basis in assessment and resolution where those services are needed.

We are recognized for our specialties in HVAC design, electrical design, indoor air quality, energy conservation/performance contracting and commissioning services for Governmental, Commercial, Educational, and Health Care facilities. **ZDS** founder Todd Zachwieja has specialized in energy conservation design in hundreds of millions of dollars in renovations, new construction, and Performance Contracting heavily involving MEP systems. Some projects include the \$43 million West Virginia Air National Guard Fuel Cell/Maintenance Hangars at the Yeager Airport in Charleston, Ohio University's Athens and Chillicothe campuses, and Harvard University's new LEED Gold Arboretum. We work in 24 states, but our home and corporate offices are in St. Albans, West Virginia.

Refer to [Section IV](#) of this document for our Professional Qualifications with detailed resumes. **ZDS Design/Consulting Services** has registered professionals in all the required disciplines to effectively execute the requirements of MEP projects. We believe that our specialties in commissioning/design of HVAC systems, Electrical systems, Energy Management, Planning and Codes compliance make us most qualified to work on your facilities. We continue to have an excellent working relationship with the West Virginia State Fire Marshal and other agencies within the State of West Virginia.

Below is a partial listing of the Project Team:

**Ted (Todd) A. Zachwieja**, **ZDS Principal-in-Charge** BSME, MSEM, P.E., CEM, LEED AP with over 40 years of experience in leading HVAC, electrical, plumbing design, energy management, IAQ and commissioning. *Nationally recognized for expertise in IAQ, LEED and Certified Energy Manager. Founding partner of ZDS.*

**Ted A. Zachwieja III**, **ZDS BIM Manager/Chief Technical Officer**, BSME, P.E., CEM and 2012 Legend-in-Energy recipient, specializes in 3D HVAC, electrical, plumbing design/scanning and technology systems administration with **ZDS** for over 15 years.

**Jim Watters**, **ZDS Construction Administrator/Associate** with over 40 years of experience in HVAC, electrical and plumbing design/commissioning and Construction Administration.

**Chase Thomas**, **ZDS MEP Engineer/Commissioning**, BSME, P.E. with over 10 years of experience specializing in HVAC design, DDC controls and Commissioning.

**ZDS** has an excellent track record of completing projects on time and in budget. We are ready and willing to start immediately on your project and feel confident that our specialties will provide you with the best expertise for economical solutions in 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.

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## 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

### FOUNDERS

Todd A. Zachwieja, P.E., C.E.O.  
Lori L. Zachwieja, C.P.A., C.F.O.  
Daniel H. Kim, Ph.D.

### OFFICE

281 Smiley Drive, St. Albans, WV 25177

### EMPLOYEES

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





## CLIENTS & EXPERIENCE

- ◆ Charleston Area Medical Center
- ◆ Charleston National Bank/Chase
- ◆ Coal Heritage Discovery Center
- ◆ Concord University Nick J. Rahall II Technology Ctr.
- ◆ District 2 Headquarters' Building HVAC Renovations
- ◆ General Motors North America Operations
- ◆ Harvard University Arboretum
- ◆ Hopemont Hospital, WVDHHR
- ◆ IMC Data Center
- ◆ Jackie Withrow Hospital, WVDHHR
- ◆ Kanawha County Commission Courthouse & Judicial Annex
- ◆ Kanawha County Metro 911
- ◆ Laidley Towers
- ◆ Marshall University Harris Hall & Smith Hall
- ◆ Meadowbrook & Burnsville Rest Areas, WVDOT
- ◆ Mercer County Courthouse
- ◆ Pendleton County Courthouse & Annex
- ◆ Pocahontas County Community Center
- ◆ Robinson Grand Performing Arts Theatre
- ◆ Redmond House, WVDOT
- ◆ St. Patrick Church Renovations

- ◆ Tyler County Commission Courthouse
- ◆ Tucker County Courthouse
- ◆ University of Charleston Innovation Center
- ◆ Veterans Administration
- ◆ Webster County Development Authority
- ◆ White Sulphur Springs Welcome Center
- ◆ William R. Sharpe, Jr. Hospital, WVDHHR
- ◆ World Trade Center, MD
- ◆ WV Air National Guard
- ◆ WV Army National Guard
- ◆ WV Children's Home, WVDHHR
- ◆ WV Dept. of Education - State wide PreK-12 Schools
- ◆ WV Division of Energy
- ◆ WV Dept. of Transportation
- ◆ WV Dept. of Health & Human Resources
- ◆ WV Division of Culture and History Renovations
- ◆ WV Division of Protective Services
- ◆ WV General Services Division
- ◆ WV Higher Education Policy Commission
- ◆ WV Parkways Authority HVAC Renovations
- ◆ WVU Stewart Hall & Wise Library
- ◆ WVU Tech (Montgomery Campus) Engineer Bldg.
- ◆ WVU Davis Hall
- ◆ Yeager Airport

**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™ 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™ Professional*
- Editorial Advisory Board member of *POWER PRESCRIPTIONS™ 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

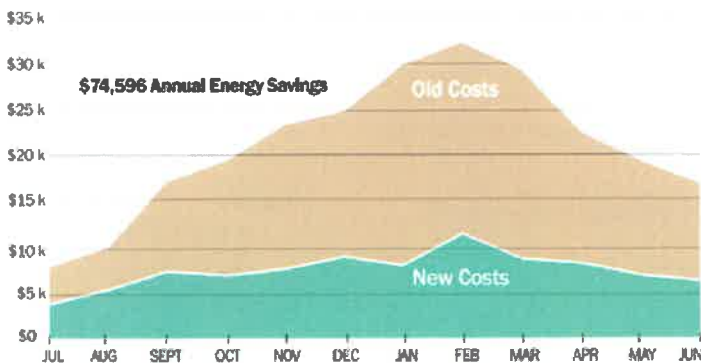
As one of the nation’s leaders in Indoor Air Quality (IAQ), **ZDS** provides sophisticated technical expertise that enables our client to be proactive in solving and preventing indoor environmental problems.



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 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.



**ABOVE:** ZDS designed and implemented the region's first and largest commercial geothermal system saving Webster County High School over \$74,596 in energy savings.

### 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 economizer cycle operation
- Testing steam traps and pressure relief equipment operation
- Enabling heating and cooling equipment only when required

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.

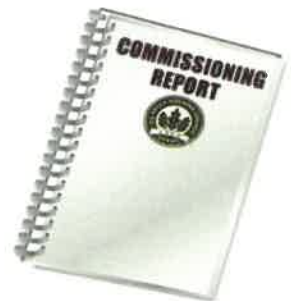
**ZDS** offers commissioning services for their clients, including meeting LEED enhanced commissioning requirements. These services include strategic planning and operations assistance for renovation and new construction projects. Commissioning services consist of construction document review, equipment performance testing, documentation of design criteria, value 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.

# SECTION III.

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**Description of Project Experience**

**Additional Project Experience  
Brochures**

# Engineering for State & Local Government Facilities



Governor's Mansion

Engineering planning and design for central heating plant, DDC controls, Air Handling Unit replacements and retrofits, operating and maintenance, training, heat recovery, fuel conversion, VFD's, variable water volume pumping, steam/heating hot water and chiller optimization.

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



Building #3



State Capitol



LEED Certified Candidate



Design/Consulting Services

# Engineering for State & Local Government Facilities

ZDS engineering project experience includes facilities registered as official Historic Buildings



Jackie Withrow 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).



Hopemont State Hospital



Mildred Mitchell-Bateman State Hospital

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



Design/Consulting Services

# Engineering for State & Local Government Facilities



**ZDS** worked with the West Virginia Air National Guard on the Commissioning for their new Replacement Aircraft Maintenance Hangar and Shops plus a new Fuel Cell Hangar. This facility included a larger maintenance hangar, miscellaneous maintenance shops, central boiler plant and chiller plant. The project successfully achieved LEED Silver Certification with commissioning being an integral part of that certification.

***"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***

130th Airlift Wing at Yeager Airport,  
Phase I and Phase II  
Aircraft Maintenance Fuel Systems  
Hangars and Shops  
**Awarded LEED Silver Certification**

**Construction Costs:** \$43,000,000  
**Project Size:** 128,715 ft<sup>2</sup>





## WV Army National Guard Headquarters & Annex Building

ZDS Design/Consulting Services and its principals Ted and Todd Zachwieja were involved in many mechanical, electrical, and plumbing design projects for the WV Army and Air National Guard. ZDS projects with the Army National Guard include providing electrical Design/Build engineering and project management for emergency power for the Army Headquarters Building and Annex Building in Charleston, WV. This project was completed ahead of schedule and within budget to provide emergency power needs for the Coonskin Army National Guard campus as part of their overall homeland security strategy. ZDS also evaluated and designed HVAC renovations to restore four indoor firing ranges to meet current compliance with Army Standards.



**Total MEP Cost:** Over \$4,000,000

**Contact:** Lt. Co. Todd Justice, Deputy Director of Joint Operations: [anthony.t.justice.mil@mail.mil](mailto:anthony.t.justice.mil@mail.mil)



## WV Army National Guard Dunbar Armory



ZDS provided comprehensive MEP engineering support for HVAC/partial lighting renovations at the Dunbar Armory. Our professional services included preparation of the Construction Bid Documents, issued in one package, and continued through bidding, negotiation and construction administration of the Contract.

Renovations resulted in a **61% reduction** in energy for lighting and **41% reduction** in energy for HVAC renovations over ASHRAE 90.1-2007 standards qualifying the project for EPAct.



**Total Project Cost:** \$1,000,000 (completed under budget)

**Contact:** SGM Kenny Goodson: [kenneth.c.goodson.mil@mail.mil](mailto:kenneth.c.goodson.mil@mail.mil)



Design/Consulting Services

William R. Sharpe, Jr. Hospital  
Weston, WV



**Size:** 219,754 ft<sup>2</sup> plus 33,000 ft<sup>2</sup> Addition

**Date Complete:** 2017

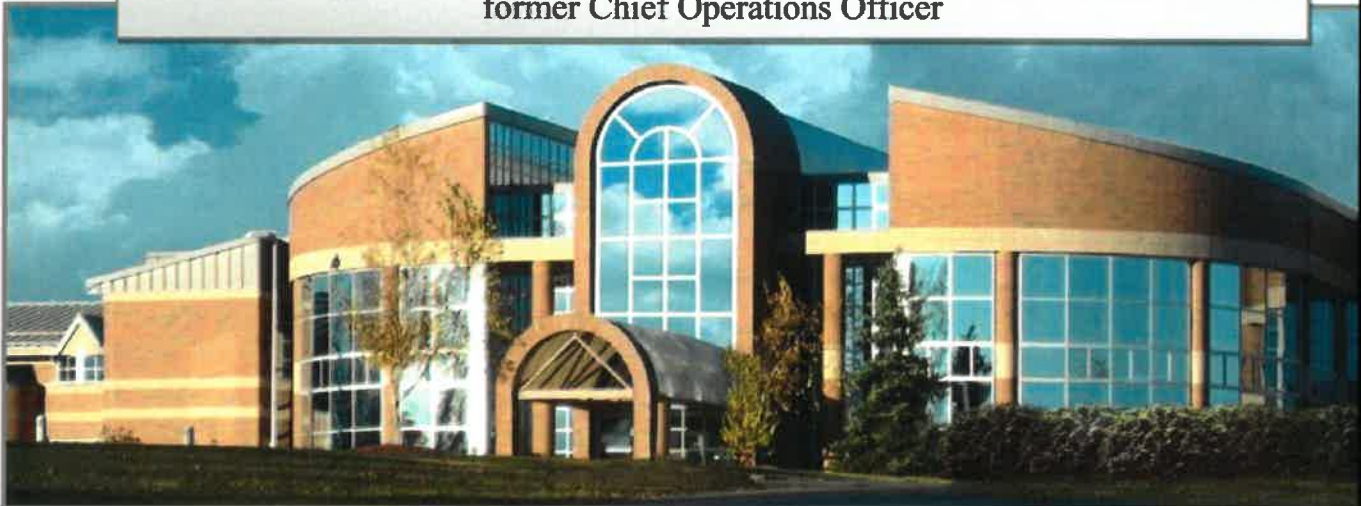
**219,754 ft<sup>2</sup> Renovation plus 33,000 ft<sup>2</sup> New Construction**

**Prime for Engineering Master Planning, HVAC Renovations, Lighting Upgrades, Emergency Generator, Fire Protection, Electrical Renovations, Roof Replacement, Commissioning, 3D Scanning. Consultant for all MEP engineering through IKM, Inc. for the addition.**



MEP Engineering design and Commissioning services for both the HVAC/lighting/roof Renovation project retrofitting Hospital and the patient wing addition. Comprehensive MEP engineering and commissioning services for a central domestic hot water services, central boiler/chiller plant and 1.8 MW bi-fuel emergency generator system. VVW Pumping for heating, cooling and domestic hot water. Integrated DDC controls for central monitoring, troubleshooting and control including demand control ventilation and outside air measuring/monitoring. The HVAC system is also an integral part of the smoke control system. Lighting systems upgraded to LED and controlled to minimize energy. IAQ enhancements were incorporated into the high performance HVAC systems. Careful phasing, and the need to disrupt only small portions of the Hospital at a time, resulted in an extended construction period.

***“The ZDS staff are great planners and designers! They help us make the best decisions for the long term. We would recommend them to anyone!”***  
former Chief Operations Officer



**Renovations resulted in a 48% reduction in lighting and 28.8% reduction in energy for HVAC renovations over ASHRAE 90.1-2001 standards qualifying the project for EAct.**

|                            |                                    |              |                   |
|----------------------------|------------------------------------|--------------|-------------------|
| <b>Construction Costs:</b> | Phase I HVAC Cost                  | \$ 1,403,000 | Completed in 2011 |
|                            | ARRA Funded Lighting Upgrade Costs | \$ 618,700   | Completed in 2011 |
|                            | Comprehensive Renovation Cost      | \$30,000,000 | Completed in 2017 |
|                            | Addition Project Cost              | \$13,500,000 | Completed in 2014 |

Health Care Project Experience

# State of West Virginia Capitol Complex

Charleston, WV



## State of West Virginia Capitol Complex Charleston, WV

**Project Cost:** \$20,000,000

**Size:** 1,900,000 ft<sup>2</sup> covering 9 buildings

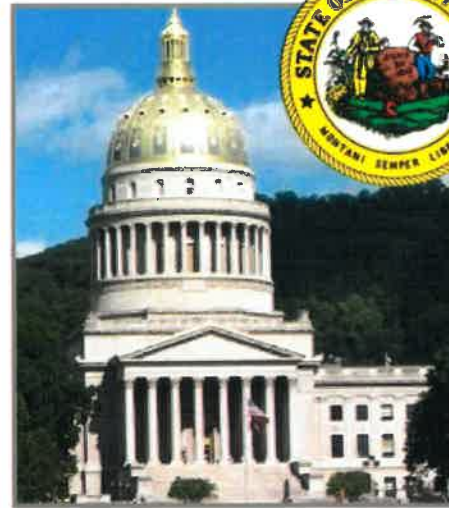
**Date Complete:** 2019 for latest project

**HVAC Renovations, Fire Protection,  
Electrical Renovations, Consultant for Performance Contracting**

**Client Reference:**

Mark Lynch, Mgr. Facility Operations; mark.w.lynch@wv.gov

**Builder Reference:** Constellation Energy; Chuck Moeller  
(previously with Johnson Controls; (724) 584-3331



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 ft<sup>2</sup> of facilities including the Capitol Building, Building's #3, #4, #5, #6, #7, Holley Grove, Governor's Mansion and the Cultural Center.

Master planning & design for central heating plant, DDC controls, Air Handling Unit replacements and retrofits, operating and maintenance, training, heat recovery, fuel conversion, VFD's, variable water volume pumping, steam/heating hot water & chiller optimization.



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

Project Experience

**Project Cost:** \$17,000,000, **Size:** 45,000 ft<sup>2</sup> **Date Complete:** 2018

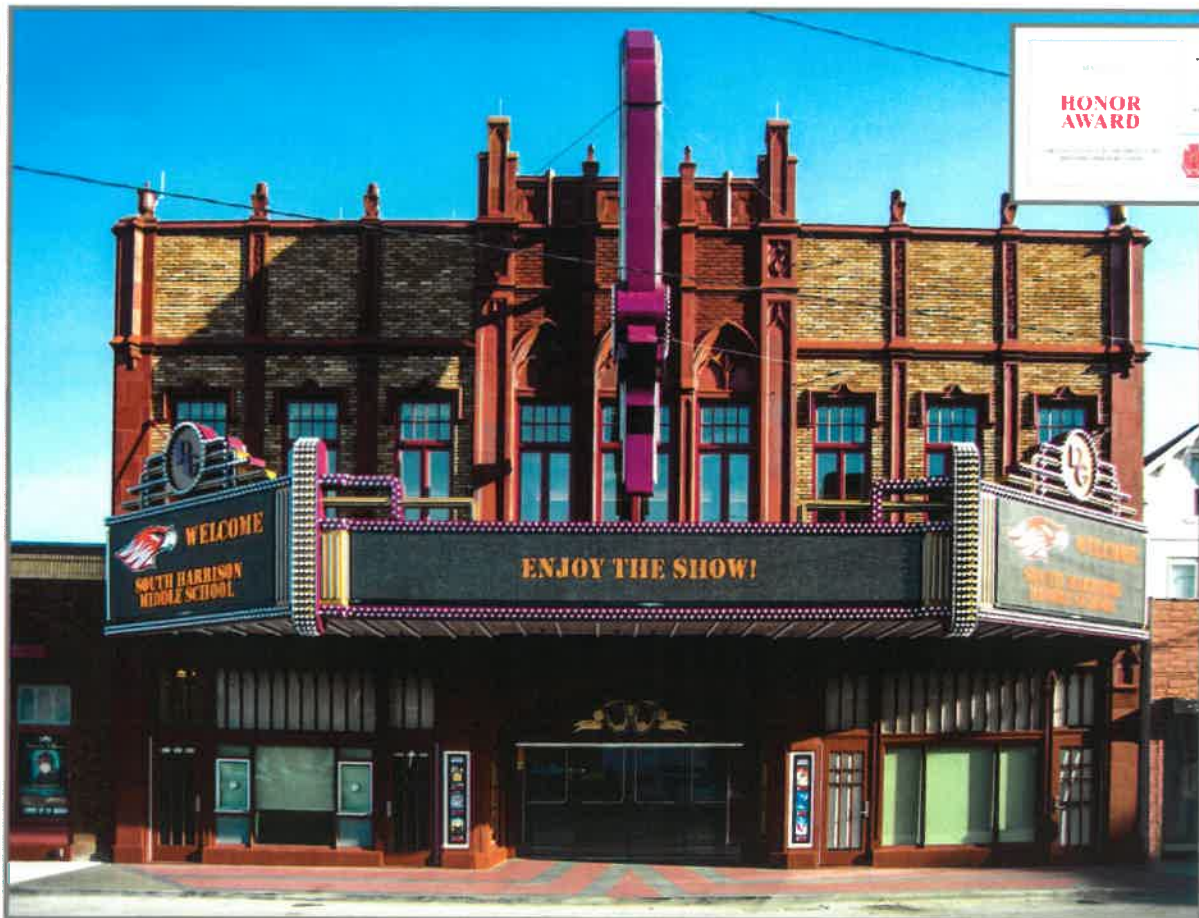
**Study/Evaluation, HVAC Renovations, Fire Protection, Electrical Renovations, Emergency Generator, Lighting Upgrades, 3D Scanning**

**Client Reference:**

**WYK Associates**, James Swiger, President; (304) 624-6326, james@wykassociates.com

High performance sustainable HVAC/Electrical/Plumbing/FP upgrades. Quiet HVAC system meeting stringent acoustical performance requirements for Performing Art. 3D-Scan-to-BIM of the existing facility was invaluable to develop the comprehensive existing conditions. Built in 1913, this beautiful award winning historic theatre has come back to life!

*Renovations resulted in a **50.8% reduction in energy** over ASHRAE 90.1-2007 standards qualifying the project for EPA Act.*



**Project Cost:** \$17,000,000, **Size:** 117,500 ft<sup>2</sup>, **Date Complete:** 2017

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

**Client Reference:** Gary Boyd, Director of Facilities; (304) 357-4871

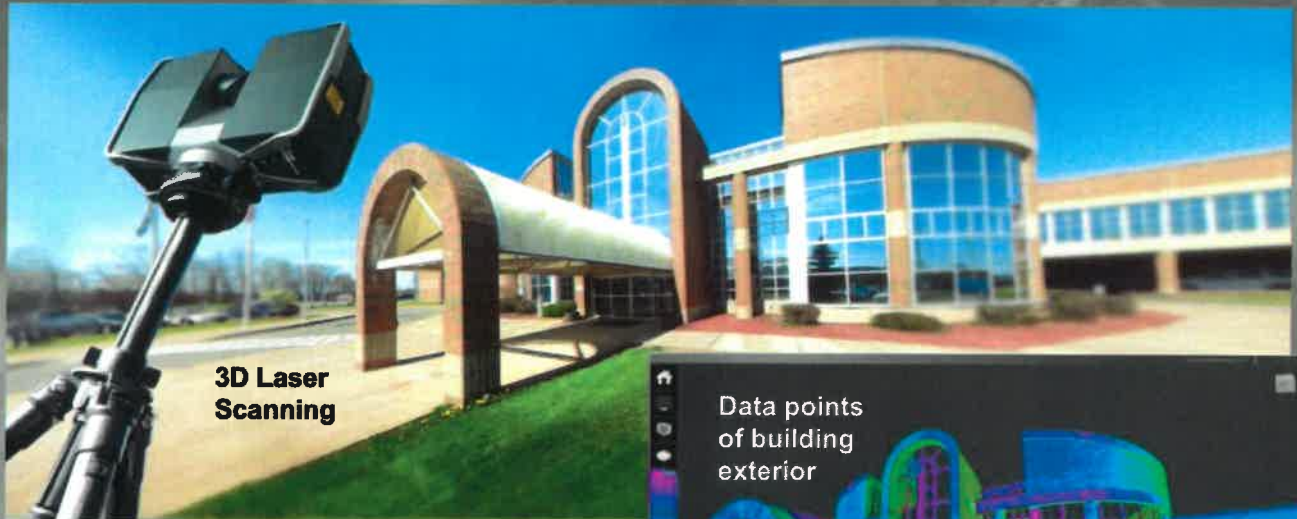
The facility consists of classrooms, offices, flexible meeting areas and a large two-story Innovation Center space. Mechanical and Electrical work includes new chiller and boiler plants with pumps and accessories, HVAC air handling units, DDC Controls, new domestic and fire protection water services, new gas service, domestic water heating equipment, extensive plumbing fixtures/showers/lockers, new electrical service from the campus 12.5 kv distribution loop, switchgear, distribution and branch panel boards, and new state-of-the-art energy efficient LED lighting systems.

***Renovations resulted in over a 50% reduction in energy over ASHRAE 90.1-2007 standards.***

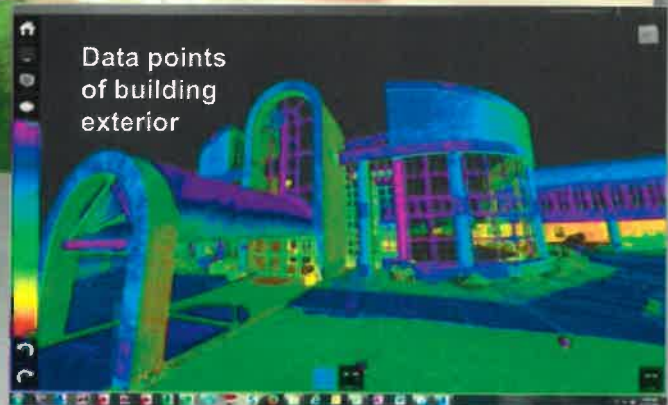


# BIM - 3D Digital Imaging

**Our 3D Laser Scanning Services helped William R. Sharpe, Jr. Hospital document existing conditions and integrate their 50-bed addition.**



**3D Laser Scanning**



Data points of building exterior

## **Why 3D Laser Scanning is better:**

3D laser scans reveal significant differences between existing conditions and the original drawings.

3D laser scans also provide superior details by capturing data that is more comprehensive and precise than conventional methods.

**“With the 3D laser scanning service, ZDS saved us countless hours communicating to all project team members, even to those who work or live far away.**

**Also, we now have an accurate record of the existing conditions that DHHR can easily access now and into the future.”**

*former Chief Operations Officer*



## **Web Share:**

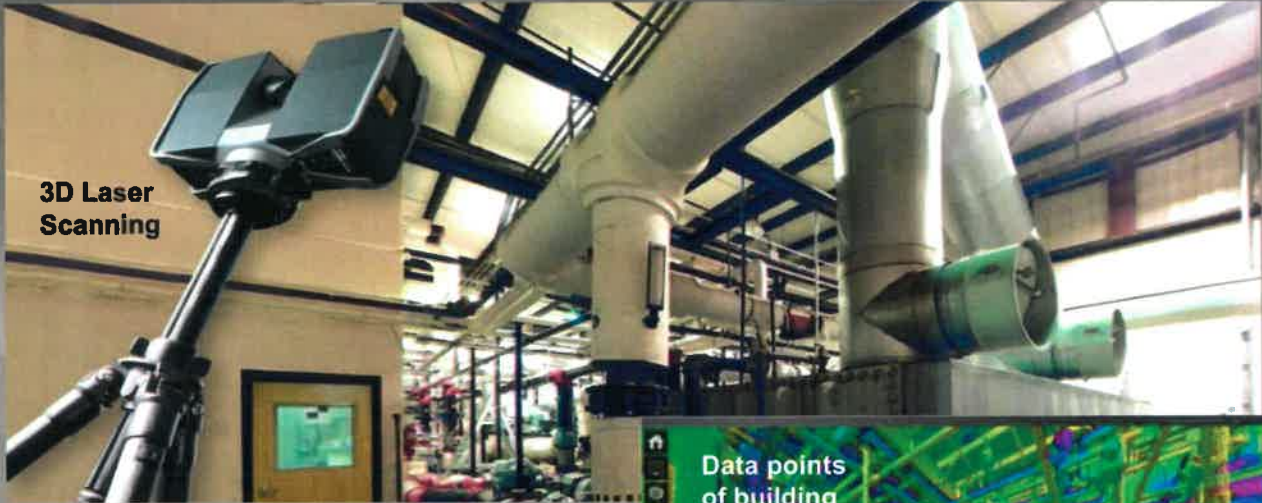
3D laser Scanning allows facility owners to view and measure areas with others on their planning and construction team.



# BIM - 3D Digital Imaging

**“The 3D laser imaging improves quality, saves time and money while providing a valuable resource now and into the future.”**

*DHHR*



**3D Laser Scanning**

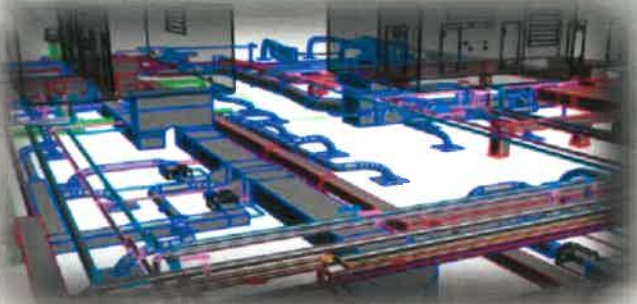
**“The 3D laser scans safely document hard-to-reach interior areas — this greatly reduces our risk for liability.**

**Also, the excellent details of the laser scans convert to accurate construction drawings, both architectural and engineering.”**

*DHHR Director of Construction & Project Management*



**Data points of building interior**



**3D Engineering Drawing:**  
Sample of 3D mechanical drawing converted from 3D laser scan data points.

**Web Share:** Helps construction team members integrate existing conditions into BIM models.



# SECTION IV.

---

## **Proposed Team Staffing Plan**

**Team Certifications**

**Team Resumes**



# ORGANIZATION CHART

**State of WV Purchasing Division**  
Eleanor Readiness Center HVAC Renovations



**Ted Zachwieja III, PE, CEM**  
CTO/BIM Manager  
MEP Engineer

**ZDS**  
Management  
Team

**Todd Zachwieja**  
PE, CEM, LEED AP  
Principal-in-Charge

**Jim Watters, Associate**  
MEP Design  
Construction Administration

**Chase Thomas, PE**  
MEP Engineer  
Commissioning/Controls



## Principal-in-Charge

**Ted (Todd) A. Zachwieja**, BSME, MSEM, P.E., CEM, LEED AP with over 40 years of experience in MEP design, energy management, IAQ and commissioning. Nationally recognized for expertise in IAQ, LEED and Certified Energy Manager. Received "Legend in Energy" by AEE in 2007/2008. Founding partner of **ZDS**.



## Chief Technical Officer BIM Manager/MEP Engineer-of-Record

**Ted A. Zachwieja III**, BSME, P.E., CEM and 2012 Legend-in-Energy Award, specializes in MEP design, energy management, IAQ and commissioning. Forerunner in adaption of 3D scanning for buildings for use in MEP design for renovations. Extensive experience in IT systems administration with over 16 years of experience at **ZDS**. Co-authored BIM Training for Autodesk University presented in Las Vegas 2015, receiving national recognition.



## MEP Design/Construction Admin.

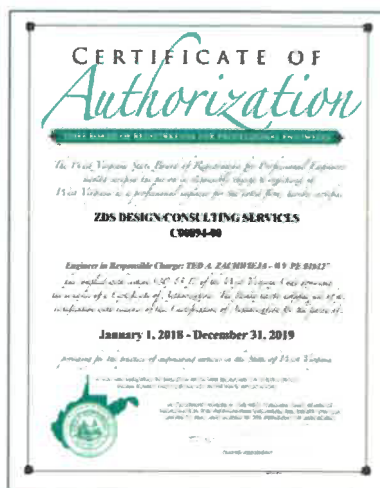
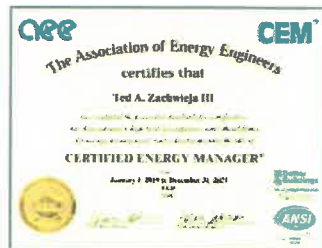
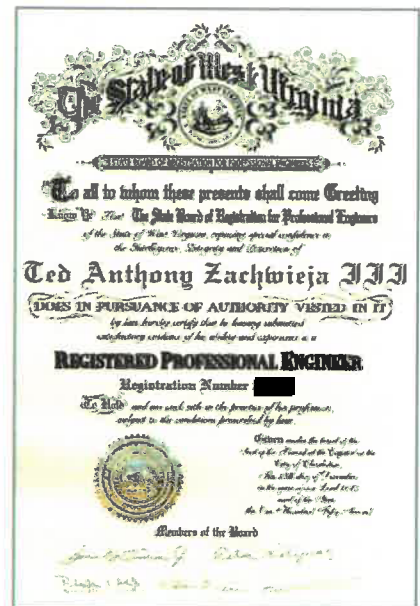
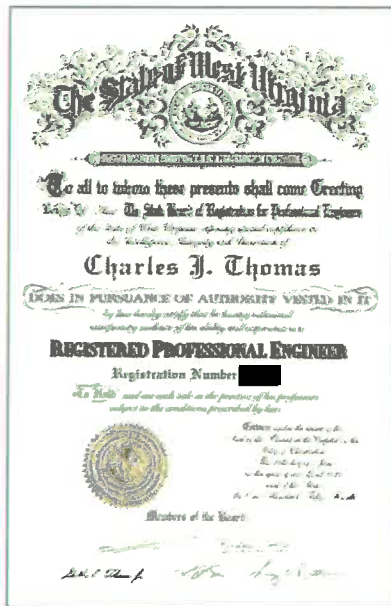
**Jim Watters**, with over 40 years of experience in mechanical, electrical and plumbing design/commissioning and Construction Administration. Extensive construction experience, including cost estimating, contractor coordination and scheduling for various projects.



## MEP Engineer/Commissioning Controls/Energy Modeling

**Chase Thomas**, BSME, P.E. with 10 years of experience specializing in mechanical and electrical engineering design. He provides HVAC, electrical and plumbing design and commissioning services for a variety of clients in West Virginia with extensive experience.

# Team Certifications



# Todd Zachwieja, PE, CEM, LEED AP



Todd has over 40 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 health care clients. He is also recognized as a campus master planner for utility infrastructure providing master planning 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 structures including high-rise commercial building renovations. Todd designed renovations to many existing schools which received **Energy Star Certifications** placing them in the nation's top 25% of energy efficiency schools. *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 EAct which requires buildings use over 50% less energy than buildings designed using ASHRAE 90.1.



## PROFESSIONAL REGISTRATIONS

### Professional Engineer:

Florida  
Georgia  
Kentucky  
Maryland

North Carolina

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. 2205



LEED Accredited Professional,  
National Certification through  
USGBC No. 10083891

## 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.

## GOVERNMENT/HISTORIC/COMMERCIAL PROJECT EXPERIENCE

- Bank One
- Bayer Material Science
- Calvert County Aquatic Center, MD
- Charleston Area Medical Center
- Cass Scenic Railroad Clubhouse, WVDNR
- Coal Heritage Discovery Center
- Culture Center, HVAC & Fire Protection, WV State Capitol Complex
- General Motors Corp. Re-commissioning
- Hopemont Hospital, WVDHHR
- Jackie Withrow Hospital, WVDHHR
- Jackson County Courthouse Annex
- Kanawha County Commission: 120,000 sf Judicial Annex additions/renovations
- Kanawha County Courthouse
- Kanawha County Metro 911
- Kanawha County Public Library
- Kanawha County Schools
- Kohl's
- Laidley Towers
- Marshall University
- Mercer County Courthouse Annex
- Olin Corporation
- Phillip Morris USA
- Public Service Commission of WV
- Redmond House, WVDOT
- Rhone-Poulenc
- Robinson Grand Performing Arts Theatre
- Santa Anna Federal Building, CA
- St. Patrick's Church
- Tyler County Courthouse
- Tyler County Schools
- Toyota Motor Manufacturer, WV Inc.
- Union Carbide/DOW
- United Center
- University of Charleston Innovation Ctr
- William R. Sharpe, Jr. Hospital, WVDHHR
- Word Trade Center, MD
- WV Air National Guard including Cx \$45M Fuel Cell/ Maintenance Hangars at Yeager Airport – **LEED Silver Certified**
- WV Army National Guard
- WV Capitol Complex Central Heating Plant
- WV Children's Home, WVDHHR
- WV Department of Transportation/DOH
- WV Division of Protective Services
- WV Higher Education Authority
- WV General Services Division
- WV State Capitol Complex renovations
- WVU Stewart Hall & Wise Library
- Yeager Airport

# Todd Zachwieja, PE, CEM, LEED AP



## PROFESSIONAL AND COMMUNITY AFFILIATIONS

Member of Investigative Engineers Association (I-ENG-A) and founder of I-ENG-A of the Tri-State Region

**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

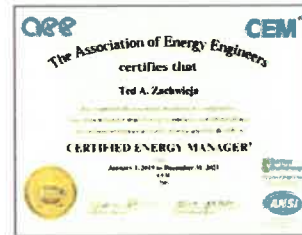
Charter Life Member of the Association of Energy Engineers

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

1<sup>st</sup> 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



# Ted Zachwieja III, PE, CEM



Ted has over 16 years of experience in building construction design industry. His strategic thinking and development of technical resources at ZDS has helped streamline design processes and improve quality of work office wide. Ted is an innovative problem solver in engineering design, communication methods and management of BIM models between stakeholders during a design project. As a pioneer and a believer in technological processes Ted has championed Integrated Design Practices that has become the fabric of ZDS's day to day operations.

Ted developed ZDS's 3D Scanning 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, health care, industrial, and commercial facilities. He also has experience in speaking on how 3D laser scanning impacts our industry today.

Ted develops, designs and manages the IT systems. The experience encompasses development and deployment of central server systems to networked client computer systems, strategic development for ZDS' Integrated Design Processes, and research and development into new technologies to continue staying on the cutting edge for ZDS and others.

Ted's project experience includes design and commissioning for heating, ventilating, air conditioning, plumbing, fire protection, electrical and lighting systems for educational, health care, industrial and commercial facilities. His experience encompasses working both on new construction and renovation projects. He also is experienced in historical facilities including theatrical.

Ted maintains an active membership to the ASHRAE professional society and also has a lifetime membership to 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 was recently appointed to the Electronic Communications Standing Committee with ASHRAE. Ted has designed renovations to existing K-12 schools which received **Energy Star Certifications** placing them in the nation's top 25% of energy efficiency schools.

## GOVERNMENT/HISTORIC/COMMERCIAL PROJECT EXPERIENCE

- WV Air National Guard Maintenance Hangar and Fuel Cell Hangar, Charleston, WV – **LEED Silver Certified**
- Adams Morgan Historic Hotel, DC
- Bayer Material Science
- Catholic Church of Ascension, Parish Hall Renovations
- Coal Heritage Discovery Center
- Culture Center, WV State Capitol Complex
- Highland Museum, KY
- Hopemont Hospital, WVDHHR
- Jackie Withrow Hospital, WVDHHR
- Kanawha County Judicial Annex HVAC Renovations
- Laidley Towers
- Meadowbrook Rest Areas
- I-70 Welcome Center
- CASCI Building, Charleston WV
- Morgantown Welcome Center
- Pocahontas County Community Center
- Redmond House, WVDOT
- Robinson Grand Performing Arts Theatre
- Servia Rest Areas
- St. Patrick's Church, Weston WV
- Stonewall Jackson Marina
- Tyler County Courthouse
- University of Charleston Innovation Center Additions/Renovations
- William R. Sharpe, Jr. Hospital Additions/Renovations, WVDHHR
- World Trade Center, Renovations, MD
- WV Children's Home, WVDHHR
- WV Parkways Authority, Toll Booth Plazas
- WV State Capital Complex Central Heating Plant
- WVU Wise Library
- White Sulfur Springs Rest Area
- Numerous K-12 School Renovations



## PROFESSIONAL REGISTRATIONS

Professional Engineer:

Florida

West Virginia

Certified Energy Manager (C.E.M.)

**CEM**

National Certificate

No. [REDACTED]

## 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



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



Member & Co-Founder  
I-ENG-A of the  
Tri-State Region

# Jim Watters



Jim has over 40 years' 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 facility's campus totaling \$10,000,000 in construction costs on various projects, including the conception, design and construction administration for the installation of a 1.5 Megawatt emergency generator. The propane-fired generator and associated switchgear in conjunction with 60,000 gallons of propane fuel storage served to provide peak shaving/load shedding to save on the campus utility costs as well as emergency power functions. 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.



## PROFESSIONAL AFFILIATIONS

Member of Investigative Engineers Association (I-ENG-A) of the Tri-State Region



Member of the National Fire Protection Association (NFPA)



Member of the Health Care Section of the NFPA

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

## GOVERNMENT/HISTORIC/COMMERCIAL PROJECT EXPERIENCE

- Bluefield Area Transit Authority Administration and Maintenance Facility
- Kentucky Judicial Center, Boyd County
- Coal Heritage Highway Authority
- Chase Towers (formally 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
- I-70 Welcome Center
- Jackie Withrow Hospital, WVDHHR
- Jackson County Libraries Renovations
- Kanawha County Commission Judicial Annex Renovations
- Laidley Towers
- Meadowbrook Rest Areas
- Morgantown Welcome 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
- 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

# Chase Thomas, PE



Chase has over 10 years of experience providing design, Construction Administration and Commissioning services in mechanical, plumbing, fire protection and various electrical systems. His experience encompasses a broad range of Projects including, but not limited to, Commercial, Government, Healthcare, Educational and Industrial facilities. These Projects over the years have ranged extensively from small to large in terms of both physical sizes and construction budgets. He also has construction experience adding a practical hands on knowledge to both design and commissioning.

Chase's specializes in the design/commissioning and layout of HVAC systems, fire protection/sprinkler systems, lighting and other electrical systems. He has an excellent understanding of the design and implementation of piping systems encompassing all domestic water, sanitary waste/vent, storm water and natural gas combined with a knowledge in steam/water heating systems, boilers, pumps, recirculating systems, Thermostatic Mixing Valves, etc. He consistently stays current with applicable Codes and national, as well as local, standards and regulations.

He has a good awareness of all aspects of the design process and how the various disciplines need to be coordinated to avoid conflicts during construction. Chase has maintained growth as technology has changed throughout the years in the field of engineering design and drafting standards beginning with varying degrees of CAD drafting and proficient in BIM/REVIT and energy modeling.

Chase is the President for the WV ASHRAE professional society . 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 has also continued his education with relevant courses associated with the field of engineering, and has been active in leadership training provided through ASHRAE and other highly reputable coaching services.



## PROFESSIONAL REGISTRATIONS

Professional Engineer:  
West Virginia

## EDUCATION

West Virginia University  
Bachelor of Science  
in Mechanical Engineering

## PROJECT EXPERIENCE

- Ashland Community & Technical College HVAC Controls
- Ben Franklin Career Center HVAC Renovations and Commissioning; Kanawha County Schools
- NEW Bluefield Primary School Commissioning; Mercer Co. Schools
- Bluestone Dam Gate Controllers Electrical Renovations
- Bluestone & Dunbar Armory HVAC Renovations
- Bonsak Elementary (VA) HVAC Controls Renovations
- Cabell Huntington Hospital Surgery Center HVAC Controls Renovations
- CAMC Memorial Hospital Patient Rooms HVAC Renovations
- NEW Mountain Valley Elementary Commissioning; Mercer County Schools
- St. Mary's Hospital Patient Rooms
- HVAC Renovations
- North Central Regional Jail Renovations
- North Fork Elementary Renovations and Commissioning
- Pendleton County Middle/High School Renovations and Commissioning
- Tucker County High School HVAC Renovations
- Tyler County Courthouse
- Tyler Consolidate Middle/High School HVAC Renovations and Commissioning
- Urlings General Store Renovations
- West Edge Factory Renovations
- Weston Hampton Inn HVAC Retrofit
- WV Capitol Complex Central Heating Plant Renovations
- World Trade Center Renovations, MD

## AWARDS AND RECOGNITIONS

Member of Boy Scouts of America  
(Eagle Scout)  
General Contractor License Holder

## PROFESSIONAL AFFILIATIONS

President of WV ASHRAE



Member I-ENG-A  
of the Tri-State Region





# SECTION V.

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## References

### Client Testimonial Letters

**ZDS** has worked on hundreds of projects in West Virginia including many with Governmental agencies. We encourage you to call the references listed below:

1. **Mike Pickens**, Retired Executive Director  
**WV Department of Education**  
(304) 400-9993;  
involved with dozens of MEP projects in WV since the 1990's.
2. **Chuck Smith**, Executive Director of Facilities Operation  
**Kanawha County Schools**  
(304) 348-6148, dcsmith@mail.kana.k12.wv.us;  
for projects with Kanawha County Schools as well as previous projects with the Kanawha County Commission.
3. **Charles Wilson**, Retired Executive Director Facilities Operation  
**Kanawha County Schools**  
(304) 533-6149, cwilson@mail.kana.k12.wv.us  
**Amanda Washington**, Coordinator Facilities Planning  
(304) 348-6148, awashington@mail.kana.k12.wv.us;  
for many projects with Kanawha county Schools.
4. **Racine Thomas**, Retired Assistant Superintendent  
**Raleigh County Schools**  
(304) 222-3907
5. **Gary Boyd**, Director of Facility Services  
**University of Charleston**  
(304) 357-4871, garyboyd@ucwv.edu;  
worked on projects at both WVU and UC involving MEP systems since 1990's.
6. **Amanda Kimble**, Director of Facilities  
**Tyler County Schools**  
(304) 758-2145, akimble@k12.wv.us;  
for renovations to Tyler Consolidated Middle/High School.



**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,

A handwritten signature in blue ink that reads "Michael E. Pickens". The signature is fluid and cursive.

Michael E. Pickens

# Boyd, Gary MA, CEFP

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

To Whom It May Concern

With well earned respect I would like to recommend ZDS as a high quality MEP design firm.

I have had multiple opportunities to work on highly technical projects with Todd Zachwieja and his team of skilled engineers. The first project that I had the opportunity to work with ZDS was a WVU project that connected several older chillers to develop a chilled water loop on the downtown campus. The project included piping through congested areas, load calculations, differential pressure and pump control, and load balancing. This project was designed to become a phased approach to a central chiller plant which is now in operation. The project was efficiently managed and the performance exceeded expectations. As the system changed and older chillers were removed from the loop, Todd always responded to questions and concerns to insure a positive outcome for the overall objective.

At present I am working with ZDS on a University of Charleston project constructing a new Innovation Center and Athletic Complex. ZDS has accommodated many twist and changes to this project. We are on track to open the new facility in December of this year. I have found Todd and his team to be highly responsive and professional.

Sincerely,

A handwritten signature in blue ink that reads "Gary L. Boyd". The signature is written in a cursive, flowing style.

**Boyd, Gary MA, CEFP**  
**Director of Facilities**  
**University of Charleston**



## **ELSWICK & ASSOCIATES, LLC**

## References

### 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,

A handwritten signature in blue ink, appearing to read "Bill Elswick", with a stylized flourish at the end.

Bill Elswick, MBA, CEO

# SECTION VI.

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## **Attachments**

**State of WV Centralized Expression of Interest**

**State of WV Purchasing Affidavit**

**Designated Contact/Certification Form**

**Addendum Acknowledgement Form**



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

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

Proc Folder: 679222

Doc Description: Eleanor RC HVAC Renovation Design

Proc Type: Central Purchase Order

| Date Issued | Solicitation Closes    | Solicitation No         | Version |
|-------------|------------------------|-------------------------|---------|
| 2020-01-17  | 2020-02-06<br>13:30:00 | CEOI 0603 ADJ2000000002 | 1       |

**BID RECEIVING LOCATION**

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

**VENDOR**

Vendor Name, Address and Telephone Number:

ZDS Design/Consulting Services  
 281 Smiley Drive  
 St. Albans, West Virginia 25177  
 (304) 755-0075

**FOR INFORMATION CONTACT THE BUYER**

Tara Lyle  
 (304) 558-2544  
 tara.l.yyle@wv.gov

Signature X *Jodd Q. Zachareja*

FEIN # 550735995

DATE February 6, 2020

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



**ADDITIONAL INFORMATION:**

Centralized Expression of Interest  
 (Professional Architect & Engineering Services for Eleanor RC HVAC Renovation Design)

In accordance with West Virginia Code: 5G-1-3, The West Virginia Purchasing Division is soliciting Expression(s) of Interest for the Agency, The West Virginia Army National Guard's Office of the Adjutant General, from qualified firms to provide architectural/engineering services and other related professional services to design and specify for construction as well as provide construction contract administration, for the Eleanor RC HVAC Design, per the bid requirements, specifications and terms and conditions as attached hereto.

\* Online submissions of Expressions of Interest are Prohibited\*

| INVOICE TO  |         | SHIP TO  |          |
|---|---------|--|----------|
| DIVISION ENGINEERING & FACILITIES<br>ADJUTANT GENERALS OFFICE<br>1707 COONSKIN DR |         | BUILDING TRADE SPECIALIST<br>ELEANOR ARMED FORCES RESERVE CENTER<br>111 ARMY/NAVY DR |          |
| CHARLESTON  | WV25311 | RED HOUSE  | WV 25168 |
| US  |         | US   |          |

| Line | Comm Ln Desc                         | Qty | Unit Issue |
|------|--------------------------------------|-----|------------|
| 1    | Eleanor RC HVAC Renovation<br>Design |     |            |

| Comm Code | Manufacturer | Specification | Model # |
|-----------|--------------|---------------|---------|
| 81101508  |              |               |         |

**Extended Description :**

Provide professional architectural and engineering design services per the attached documentation.

STATE OF WEST VIRGINIA  
Purchasing Division

**PURCHASING AFFIDAVIT**

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

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

**DEFINITIONS:**

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

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

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

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

**WITNESS THE FOLLOWING SIGNATURE:**

Vendor's Name: ZDS Design/Consulting Services

Authorized Signature: *Judd A. Zebireja* Date: February 6, 2020

State of West Virginia

County of Kanawha, to-wit:

Taken, subscribed, and sworn to before me this 6th day of February, 2020.

My Commission expires May 21, 2020.

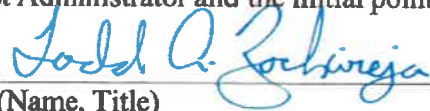
**AFFIX SEAL HERE**

**NOTARY PUBLIC**

*Lauren M. Headley*  
*Purchasing Affidavit (Revised 08/01/2015)*



**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.



(Name, Title)

Todd A. Zachwieja, PE, CEM, LEED AP CEO, Principal in Charge

(Printed Name and Title)

281 Smiley Drive, St. Albans, WV 25177

(Address)

304-755-0075, 304-755-0076

(Phone Number) / (Fax Number)

todd.zachwieja@zdsdesign.com

(email address)

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

ZDS Design/Consulting Services

(Company)



(Authorized Signature) (Representative Name, Title)

Todd A. Zachwieja, PE, CEM, LEED AP CEO, Principal in Charge

(Printed Name and Title of Authorized Representative)

February 6, 2020

(Date)

304-755-0075, 304-755-0076

(Phone Number) (Fax Number)

**ADDENDUM ACKNOWLEDGEMENT FORM**

**SOLICITATION NO.:** \_\_\_\_\_

CEOI 0603 ADJ2000000002

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

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

**Addendum Numbers Received:** N/A  
(Check the box next to each addendum received)

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

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

ZDS Design/Consulting Services

Company

*Jodd Q. Zachireja*

Authorized Signature

February 6, 2020

Date

**NOTE:** This addendum acknowledgment should be submitted with the bid to expedite document processing.  
Revised 6/8/2012