



The following documentation is an electronically-submitted vendor response to an advertised solicitation from the *West Virginia Purchasing Bulletin* within the Vendor Self-Service portal at ***wvOASIS.gov***. As part of the State of West Virginia's procurement process, and to maintain the transparency of the bid-opening process, this documentation submitted online is publicly posted by the West Virginia Purchasing Division at ***WVPurchasing.gov*** with any other vendor responses to this solicitation submitted to the Purchasing Division in hard copy format.

Header

List View

General Information [Contact](#) [Default Values](#) [Discount](#) [Document Information](#)

Procurement Folder: 141136

SO Doc Code: CEOI

Procurement Type: Central Contract - Fixed Amt

SO Dept: 0211

Vendor ID: 00000208496 

SO Doc ID: GSD1600000005

Legal Name: ZDS Limited Liability Company

Published Date: 10/28/15

Alias/DBA:

Close Date: 11/12/15

Total Bid: \$0.00

Close Time: 13:30

Response Date: 11/12/2015 

Status: Closed

Response Time: 9:21

Solicitation Description: Addendum 2 EOI A/E Services for HVAC Renovations of Bldg 36 

Total of Header Attachments: 0

Total of All Attachments: 0



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

**State of West Virginia
 Solicitation Response**

Proc Folder : 141136

Solicitation Description : Addendum 2 EOI A/E Services for HVAC Renovations of Bldg 36

Proc Type : Central Contract - Fixed Amt

Date issued	Solicitation Closes	Solicitation No	Version
	2015-11-12 13:30:00	SR 0211 ESR11121500000002194	1

VENDOR

000000208496

ZDS Limited Liability Company

FOR INFORMATION CONTACT THE BUYER

Laura E Hooper
 (304) 558-0468
 laura.e.hooper@wv.gov

Signature X **FEIN #** **DATE**

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

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
1	EOI A/E Services for HVAC Renovations of Building 36				

Comm Code	Manufacturer	Specification	Model #
81100000			

Extended Description :	EOI A/E Services for HVAC Renovations of Building 36
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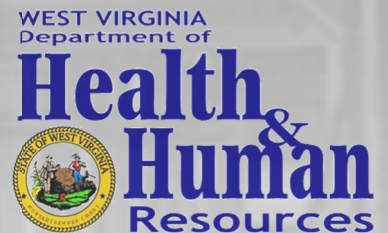


WV Department of Administration
Purchasing Division
2019 Washington Street, East
Charleston, WV 25305

Solicitation No.: CE01_0211 GSD16000005

November 12, 2015

Expression of Interest
to provide
Professional Engineering Services
for the
HVAC Renovations of Building 36



STATE OF WEST VIRGINIA
ONE DAVIS SQUARE

I – Executive Summary Letter



Design/Consulting Services

281 Smiley Drive
St. Albans, WV 25177
Phone: (304) 755-0075
Fax: (304) 755-0076
www.ZDSDesign.com



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

November 12, 2015

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

Re: Expression of Interest to provide Professional Engineering Services for the HVAC Renovations for Building 36

Please accept our Statement of Qualifications to provide Professional MEP Engineering Services and related work for the ***HVAC Renovations for Building 36.***

ZDS Design/Consulting Services was founded in 1994 and is located at 281 Smiley Drive, St. Albans, WV 25177. The contact information for **ZDS** is Todd Zachwieja, Principal/CEO - Telephone: 304-755-0075; Fax: 304-755-0076; Mobile: 304-545-4550; Email: Todd.Zachwieja@ZDSDesign.com; Website: www.ZDSDesign.com.

ZDS founding members have over five decades of MEP engineering experience in West Virginia with a local understanding of your needs. We have extensive 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.

ZDS previously performed an evaluation of the HVAC systems for Building 36 for the General Services Administration and have extensive knowledge and understanding of your needs for this project. We also developed the master planning, evaluation and/or design for WVDHHR's William R. Sharpe, Jr. Hospital, University of Charleston's Innovation Center, Kanawha County Judicial Annex, Kanawha County Courthouse, Laidley Towers, Chase Towers, West Virginia Capitol Complex, Culture Center, Mercer County Courthouse Annex and many others, and offers the most experienced MEP engineering services in West Virginia. We have an ongoing relationship with the WVDHHR (tenant at Building 36) having provided design and commissioning services on many of their facilities which we believe we will be a great asset to this project.

ZDS is the only MEP engineering firm in West Virginia to design and receive the EPA's 2013 Energy Star® Certification for three (3) facilities in West Virginia. Each of these buildings performs in the top 25 percent of similar facilities nationwide for energy efficiency while meeting ASHRAE standards such as ASHRAE 62.1

Ventilation for Acceptable Indoor Air Quality, IES lighting levels and ASHRAE standard 55 on Thermal Comfort. We met the facility requirements while providing a very energy efficient HVAC, lighting and power system.

ZDS' experience involves hundreds of projects including working with many state and federal agencies. Our professionals are dedicated to performing quality services taking into account our clients' needs, scheduling and budgets. Refer to [Section II](#) for a brief description of **ZDS'** Organization and Services.

Refer to [Section III](#) for more details on related project experience. **ZDS** has extensive experience in renovation projects. We designed new central boiler plants for the entire State Capitol Complex in Charleston. We also provided Master planning at seven WVDHHR hospitals in West Virginia including the engineering design and commissioning for over \$50 million in renovations and additions.

We are recognized for our specialties in mechanical design, electrical design, indoor air quality services, energy conservation/performance contracting and commissioning services for Governmental, Commercial, Educational, and Health Care facilities. **ZDS** founder Todd Zachwieja specialized in energy conservation design prior to establishing **ZDS** over 20 years ago and were involved in hundreds of millions of dollars in renovations, new construction, and Performance Contracting heavily involving MEP systems. Some projects include the recently-completed \$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 of 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 38 years of experience in M/E 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. Guest Speaker at National System Commissioning Conference. Founding partner of ZDS.*

Jim Watters, ZDS Production Manager/Associate with nearly 40 years of experience in mechanical, electrical and plumbing design/commissioning and Construction Administration.

Jennings L. Davis II, ZDS Project Manager/Associate, BSME, P.E. with over 25 years of experience specializing in MEP design, Construction Administration and commissioning.

James Lowry, ZDS Senior Engineer, BSME, P.E. specializing in HVAC design and commissioning with over 10 years of experience at **ZDS**.

Ted A. Zachwieja III, **ZDS BIM Manager/Systems Administrator**, BSME, EI, CEM and 2012 Legend-in-Energy Award, specializes in 3D MEP design/scanning and IT systems administration with **ZDS** for over 11 years.

ZDS personnel have worked on hundreds of projects throughout West Virginia including many with Governmental agencies. We encourage you to call the references listed below, as well as Mr. Rudy Raynes of the West Virginia State Fire Marshal's office to establish how well we worked with their staff, our technical strengths and our ability to work with contractors to provide a quality project.

1. Mr. Ron Adkins, former Project Manager for WV Air National Guard projects (304) 634-9379, currently Construction Manager for WVDHHR, One Davis Square, Suite 100, Room 103, Charleston, WV 25301, ron.adkins@wv.gov. Construction Manager for multiple addition and renovations projects for William R. Sharpe, Jr. Hospital, Weston, WV including support for other DHHR facilities since 2011.
2. Mr. Greg Nicholson, Retired Chief Operations Officer, WVDHHR, Charleston, WV (304) 552-0101, gregnicholson@suddenlink.net Involved with seven hospitals involving multiple projects at each facility in West Virginia since 2010.
3. Mr. Mike Pickens, Executive Director, West Virginia Department of Education, 1900 Kanawha Blvd. East, Bldg. 6, Room 215, Charleston, WV 25305 (304) 558-2711, mepicken@k12.wv.us. Involved with dozens of MEP projects in West Virginia since the 1990's.
4. Mr. David Sneed, Executive Director of SBA, (304) 558-2541, david.a.sneed@wv.gov. Involved with dozens of MEP projects in West Virginia since 1990's.
5. Mr. Gary Boyd, Director of Facility Services, University of Charleston, 2300 MacCorkle Avenue S. E., Charleston, WV 25304 (304) 357-4871, garyboyd@ucwv.edu. Worked on projects at both WVU and UC involving MEP systems since 1990's.

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



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

State of West Virginia
 Centralized Expression of Interest

Proc Folder: 141136

Doc Description: EOI A/E Services for HVAC Renovations of Building 36

Proc Type: Central Contract - Fixed Amt

Date Issued	Solicitation Closes	Solicitation No	Version
2015-09-16	2015-10-20 13:30:00	CEOI 0211 GSD1600000005	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

Laura E Hooper
 (304) 558-0468
 laura.e.hooper@wv.gov

Signature X *Josh A. Zochireja*

FEIN # 550735995

DATE November 12, 2015

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

ADDITIONAL INFORMATION:

The West Virginia Purchasing Division for the Agency, The West Virginia Department of Administration's, General Services Division is soliciting CEOI responses from qualified firms to provide an architectural /engineering services for HVAC Renovations of Building 36, per the attached specifications and terms & conditions.

INVOICE TO	SHIP TO
DEPARTMENT OF ADMINISTRATION GENERAL SERVICES DIVISION 1900 KANAWHA BLVD E, BLDG 1, RM MB-68 CHARLESTON WV25305 US	DEPARTMENT OF ADMINISTRATION GENERAL SERVICES DIVISION BLDG 36 ONE DAVIS SQUARE CHARLESTON WV 25301 US

Line	Comm Ln Desc	Qty	Unit Issue
1	EOI A/E Services for HVAC Renovations of Building 36		

Comm Code	Manufacturer	Specification	Model #
81100000			

Extended Description :

EOI A/E Services for HVAC Renovations of Building 36

SCHEDULE OF EVENTS

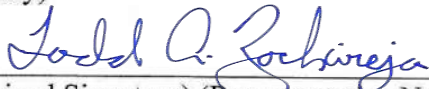
Line	Event	Event Date
1	Mandatory Pre-Bid Meeting 10:00AM	2015-09-28
2	Question Deadline 5:00PM	2015-10-08

CERTIFICATION AND SIGNATURE PAGE

By signing below, or submitting documentation through wvOASIS, I certify that I have reviewed this Solicitation in its entirety; understand the requirements, terms and conditions, and other information contained 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)

(304) 755-0075, (304) 755-0076, 11-12-2015

(Phone Number) (Fax Number) (Date)

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: GSD1600000005

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

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

Addendum Numbers Received:

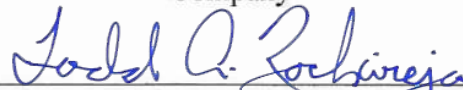
(Check the box next to each addendum received)

- | | |
|--|--|
| <input checked="" type="checkbox"/> Addendum No. 1 | <input type="checkbox"/> Addendum No. 6 |
| <input checked="" 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



Authorized Signature

November 12, 2015

Date

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

Revised 6/8/2012

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 exceeds five percent of the total contract amount.

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (W. Va. Code §61-5-3) that 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 Q. Zochring* Date: November 12, 2015

State of West Virginia

County of Kanawha, to-wit:

Taken, subscribed, and sworn to before me this 12th day of November, 2015

My Commission expires May 21, 2020.

AFFIX SEAL HERE

NOTARY PUBLIC

Lauren Meek

Purchasing Affidavit (Revised 07/01/2012)



II – Organization Overview



ABOUT ZDS DESIGN/CONSULTING SERVICES

ZDS offers an effective organizational structure -- one that takes each project from inception through completion, working as an extension of the client every step of the way.

Excellent mechanical and electrical design results from an experienced team, as well as listening to the needs of the client.

ORGANIZATION

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.

Todd A. Zachwieja, PE, C.E.M., LEED AP, Chief Executive Officer, brings with him over 38 years in the design and consulting business.

Daniel H. Kim, Ph.D., Manager of Strategic Planning, brings with him over 27 years in the design and consulting business and is one of the nation’s leading experts in organizational management. He is also owner/founder of Pegasus Communications, Inc. from 1991 to present.

Lori L. Zachwieja, C.P.A., Chief Financial Officer, M.F.A., was co-founder of ZECO Consultants and brings over 30 years experience in operating a business.

SERVICES

MECHANICAL
ELECTRICAL
PLUMBING

ENERGY
BIM
COMMISSIONING

INDOOR AIR QUALITY
3D LASER SCANNING
EXPERT WITN

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. Our design expertise includes:

MECHANICAL DESIGN

- Heating & Ventilation
- Air Conditioning
- Piping
- Environmental Controls
- Process Controls
- Refrigeration
- Plumbing
- Medical Gases
- Sprinkler-Fire Protection
- Master Planning

ELECTRICAL DESIGN

- Power Distribution
- Interior Lighting
- Exterior Lighting
- Emergency Power
- Communications
- Technology
- Fire Alarm
- Security
- Life Safety
- Master Planning

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. 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.”

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.

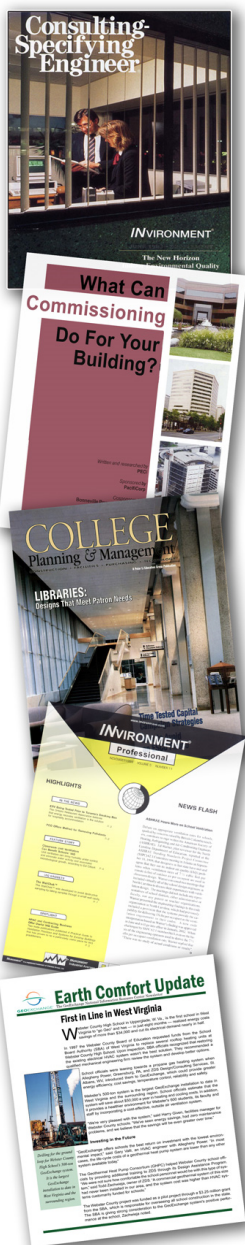
OFFICES
 St. Albans, WV

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



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.



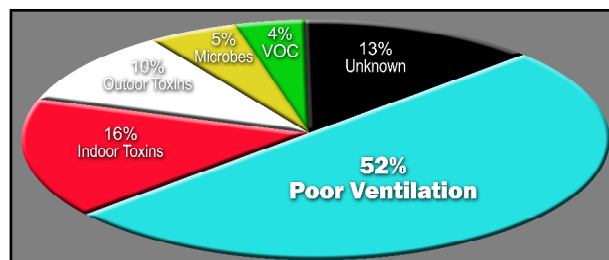
Todd Zachwieja, ZDS Principal, is contributing editor for the following IAQ publications:

- 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.

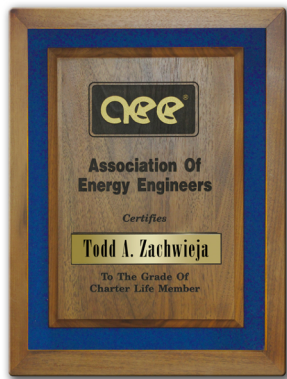


SUMMARY

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
- Evaluating and documenting utility savings

Todd Zachwieja received AEE’s LEGENDS IN ENERGY AWARD in 2007 and 2008 for lifetime achievements in energy. 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

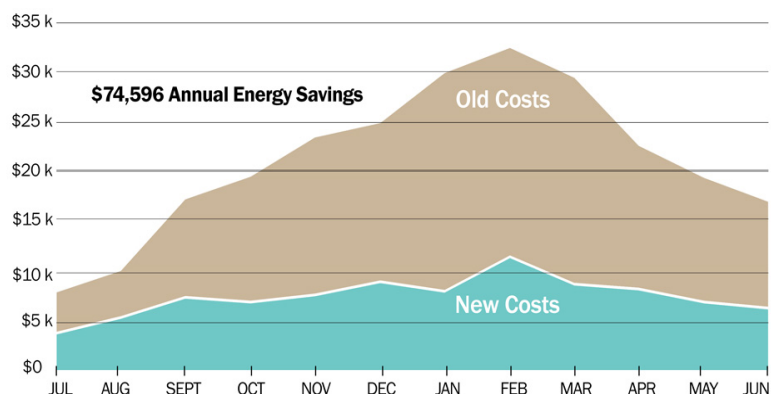
In addition to the energy management projects outlined above, the **ZDS** team members have extensive experience in identifying and implementing energy efficient operating and maintenance measures. These are typically low cost or no cost measures that include:

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



Webster County Schools received Energy Star certification in 2013 as one of nation’s top 25% of energy efficient schools.

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



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.

Subsequent 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.

The commissioning process 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
- Commission new and renovated facilities to minimize or eliminate IAQ issues before they become problems

ZDS and its consultants offer commissioning services for their commercial and institutional 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.

NATIONAL RECOGNITION

The National Conference on Building Commissioning invited Todd Zachwieja, owner of **ZDS**, to speak. 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.

The principal owners of **ZDS** and their consultants have extensive experience in building commissioning and have saved their customers hundreds of thousands of dollars in construction costs and operating costs through their efforts.

The design team at **ZDS** is the best to provide engineering services for your project. Satisfying our client’s individual needs and distinct requirements is the foremost concern of **ZDS**.

The most important member of the design team is the client. We make every effort to involve our clients throughout the entire process, from planning through construction and beyond.



The **ZDS** design staff has provided millions of dollars of engineering design services on a variety of project types.

ZDS clients can rest assured that the design team will be available, not just for the year or two that we are involved in the initial design and construction, but also for years that follow as questions arise about your facility. A good engineered system and its equipment should last 15 to 40 years. Why not select a design firm with experienced staff committed to their projects with a comparable track record.

Through the efforts of our staff, working locations include:

- | | |
|---------------|----------------|
| West Virginia | Massachusetts |
| Arkansas | Michigan |
| California | New York |
| Colorado | North Carolina |
| Connecticut | Ohio |
| Florida | Pennsylvania |
| Georgia | South Carolina |
| Hawaii | Tennessee |
| Illinois | Texas |
| Indiana | Virginia |
| Kentucky | Washington, DC |
| Maryland | Wisconsin |

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.

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.



- CLIENTS**
- Charleston Area Medical Center
 - Charleston National Bank/Chase
 - Concord University Nick J. Rahall II Technology Center
 - District 2 Headquarters' Building HVAC Renovations, Huntington, WV
 - General Motors North America Operations
 - Harvard University Arboretum
 - IMC Data Center, WV
 - Kanawha County Commission Courthouse and Judicial Annex Renovations/Additions
 - Laidley Towers, Charleston, WV
 - Marshall University Harris Hall HVAC Renovations Smith Hall Renovations
 - Meadowbrook & Burnsville Rest Areas
 - Mercer County Courthouse
 - Pocahontas Community Center
 - St. Patrick Church Renovations, WV
 - Tucker County Courthouse
 - University of Charleston
 - Veterans Administration
 - Webster County Development Authority
 - Webster County Schools
 - White Sulphur Springs Welcome Center
 - WV Air National Guard
 - WV Army National Guard
 - WV Dept. of Education
 - WV Division of Energy
 - WV Dept. of Transportation
 - WV Division of Health & Human Resources – State-Wide
 - WV Division of Culture and History Renovations
 - WV Division of Protective Services
 - WV General Services Administration – Capitol Complex HVAC Renovations
 - WV Higher Education Policy Commission
 - WV Parkways Authority HVAC Renovations
 - West Virginia University

III – Expertise and Project Experience

Engineering for Commercial Facilities

ZDS project experience includes a wide variety of commercial buildings — office, retail, judicial, banking, dining, technical and other facility types.

Bank One/Chase

Chase Tower (formerly Bank One) contains 271,000 ft² of professional office space and is a Charleston skyline focal point. ZDS replaced the core central HVAC system for the entire building.



Laidley Tower



Laidley Tower is one of the State's tallest buildings rising 18 stories high.

ZDS provided the Master Engineering Planning for the whole structure.

ZDS upgraded the core Mechanical/Electrical and Plumbing systems as well as customized tenant build-out renovations.





West Union Bank

An AIA Awarded project, ZDS provided HVAC, plumbing and electrical engineering which included rigorous bank security standards and systems.

Clear Mountain Bank *(formerly called Sabraton)*



ZDS provided comprehensive HVAC, plumbing and electrical engineering which included stringent bank security systems.



Design/Consulting Services



ZDS engineered the prototype for all of the Welcome Centers and Rest Areas throughout West Virginia.

West Virginia Welcome Center and Rest Area in Burnsville

ZDS provided engineering planning, design, bidding and construction admin services for M/E, Plumbing and Fire Protection.

ZDS also evaluated the existing courthouse's potential power needs and incorporated those in the new Judicial Annex's electrical systems while providing emergency power.



Mercer County Annex



West Virginia Division of Culture and History

A 228,500 ft² Facility

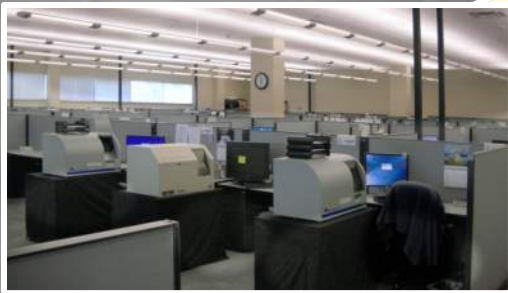


Emergency Power Generator

Renovations save the Museum nearly \$153,000 in annual energy costs while preserving the State's priceless collection with proper HVAC, humidification, lighting, electrical and power generator systems.



Design/Consulting Services



IMC Data Operations Center

An AIA Awarded facility with sustainable features including geothermal energy.



**Concord University
Nick J. Rahall
Technology Center**

An intensive evaluation showed the benefits of constructing a new 50,000 ft² facility attached to an existing structure.



The \$375,000 electrical upgrades included a Campus Medium Voltage Loop which also provided an uninterruptible power supply needed for the new technology center where all of the University's internet and intranet systems resided.



Engineering for Courthouse Facilities

Our project experience includes over 100 facilities where security, discretion and public safety are a top priority.



Above: Mercer County Judicial Annex, Princeton, WV



Left: Kanawha County Judicial Annex Charleston, WV



Above: West Virginia Public Service Commission Charleston, WV

Tucker County Courthouse Parsons, WV

Built in 1986, this facility is on the National Register of Historic Places.

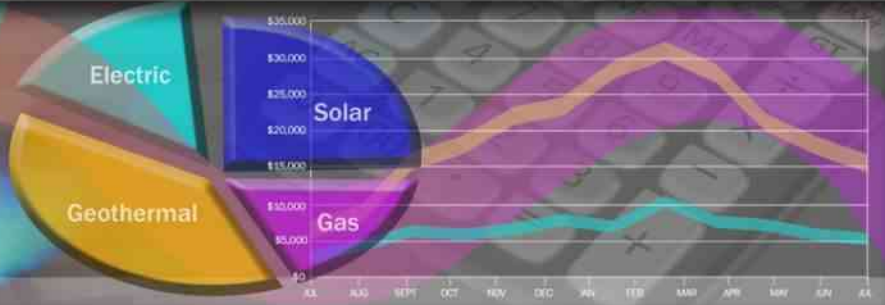
ZDS provided comprehensive evaluation and planning for the engineering renovations.



Design/Consulting Services

Energy Management Engineering

energy

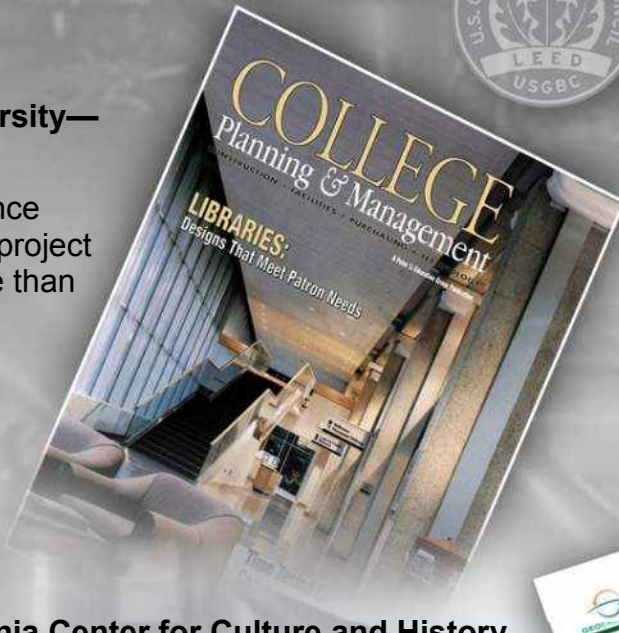


NATIONALLY RECOGNIZED FOR ENGINEERING EXCELLENCE



Ohio University—Athens

A performance contracting project saving more than \$2,500,000 annually in energy costs.



ZDS offers these and other energy management services:

- Compliance with LEED
- Utility Monitoring & Forecasting
- Energy Audits
- Performance Contracting Management
- Utility Savings Verification
- Utility and Government Funding
- Staff Training

West Virginia Center for Culture and History

ZDS initiated the HVAC renovations and reduced HVAC operating costs up to 50%.



ZDS designed a geothermal system saving Webster County High School \$75,000 in annual energy costs.





Building 5

Building 6

Building 7



Building 3



Building 4



Below: East Wing



West Wing



LEED
Certified Candidate

West Virginia Capitol Complex

An integration of nine buildings involving over 1.9 million square feet of building space.

The initial year savings of \$1,079,296 paid for the \$10,108,102 investment cost over time.

Project savings include a new central heating plant serving nine buildings that replaced the older, inefficient boilers and heating systems.



Museum of Culture & History



The Governor's Mansion



Design/Consulting Services



OHIO UNIVERSITY

Ohio University Chillicothe Campus realizes an annual energy savings from \$200,000 to \$300,000 through ZDS master planning, HVAC/Electrical/Plumbing design, and the established comprehensive Performance Contracting program.



Bennett Hall



Stevenson Center Library



Shoemaker Center and Gymnasium



West Virginia University

ZDS established the central plan and renovations for the downtown campus chilled water loop system.

Renovations result in **\$300,000 to \$400,000 of annual savings** in energy and energy-related costs.



Chemistry Research Annex



Stewart Hall



WVU Mountainlair



White Hall

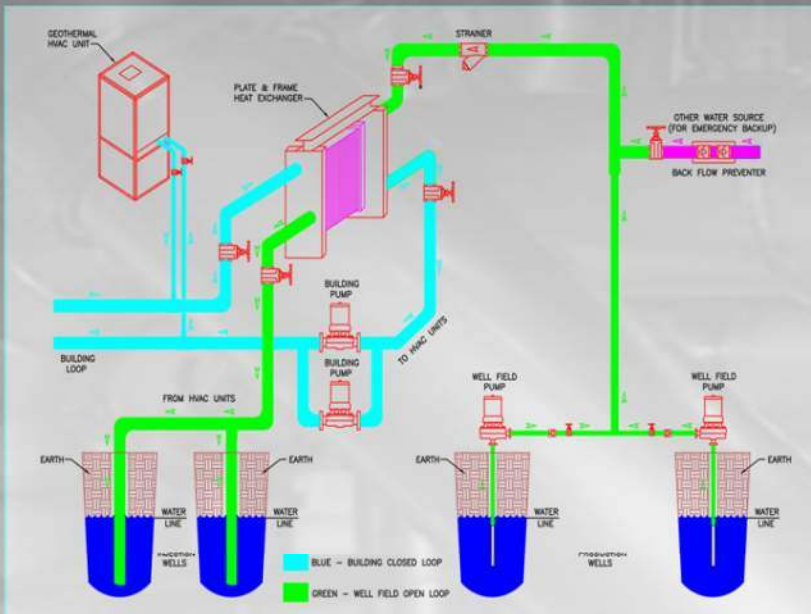


Design/Consulting Services

ZDS Geothermal Energy Engineering Savings



**“We’re very pleased with the system.
We’ve seen energy savings and have had zero maintenance problems.”**
Webster County Schools



ZDS designed an open-loop geothermal system making Webster Springs Elementary one of the most energy efficient schools in the nation.



Webster Springs Elementary

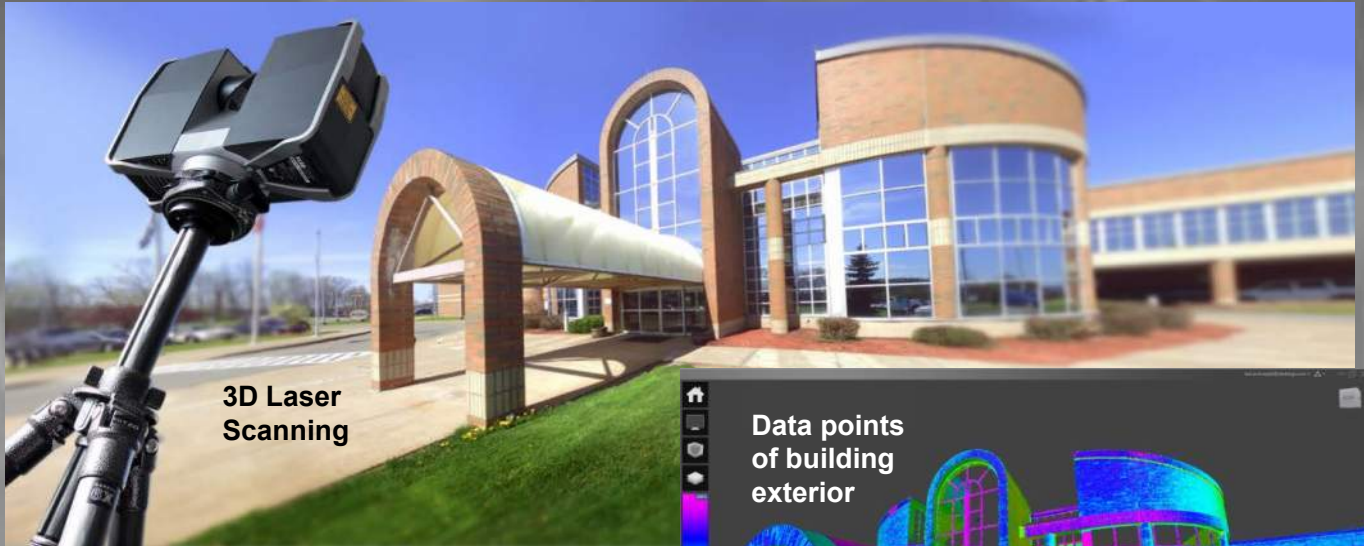


One of the first K-8 schools awarded a 2013 Energy Star Certification.

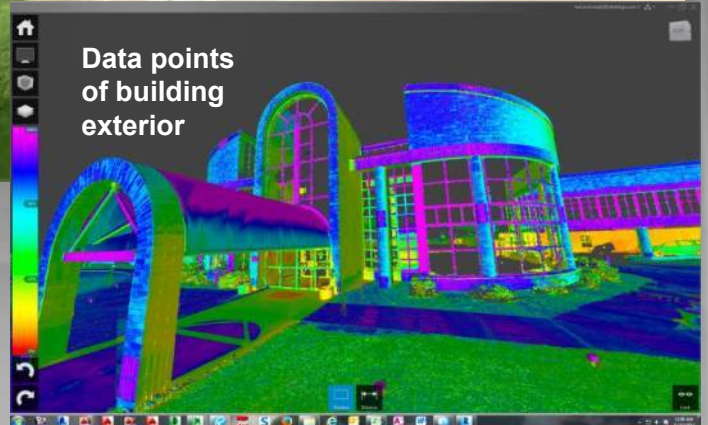
Design/Consulting Services

3D Digital Imaging for Facilities

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



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.”

Greg Nicholson, DHHR Chief Operations Officer



Web Share:

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



3D Digital Imaging for Facilities

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

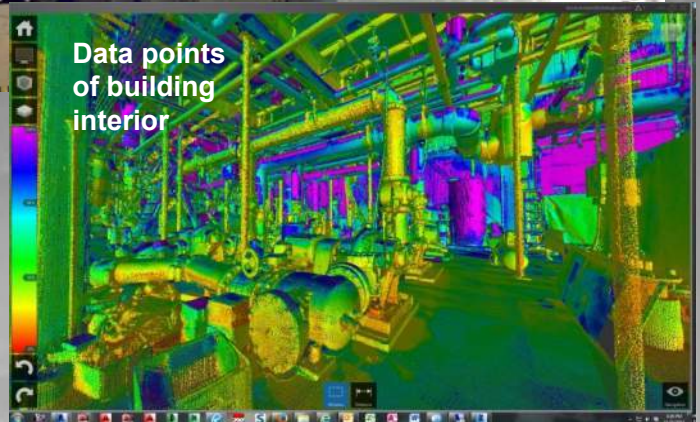
DHHR



“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.”

Ron Adkins, DHHR Director of Construction & Project Management



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.



PROJECT EXPERIENCE

Project Name: *The Russell and Martha Wehrle Innovation Center*

Location: *University of Charleston, Charleston, WV*

Description: **ZDS** was contracted by the University of Charleston to provide 3-D scanning services for the existing Eddie King Gym and adjacent Gorman Hall to more accurately perform an evaluation of the existing Mechanical and Electrical systems' infrastructure. The 3D scans provide "built" conditions to accuracies up to +/- 2 mm in 3D. The evaluation and recommendations were presented to the Client prior to beginning the design phase of the proposed Project. The Project consisted of major renovations to the Gym, interconnection/reconnection of MEP systems impacting the Gorman Hall facility and a 30,000 SF addition to the front of the facility that, when completed, will be known as the Russell and Martha Wehrle Innovation Center. 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, plumbing fixtures, all new mechanical piping systems, 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.



*The University of Charleston
Russell and Martha Wehrle Innovation Center*

Construction Costs: \$14,000,000

Completed: Projected for completion December 2016

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

ZDS COMMERCIAL/GOVERNMENT PROJECT EXPERIENCE

Project Name: *Kanawha County Judicial Annex and Courthouse – HVAC Renovations*

Location: *Charleston, WV*

Description: **ZDS** provided engineering services for the renovation of the 93,000 ft² Annex and the 23,000 ft² courthouse addition. Examples of some of the rooms and offices of the Annex include those for circuit courts, jury deliberation, attorney conferencing, witnessing, court clerical staff, public research, adult probation, prosecuting, maintenance, voting registration, court administration and all public areas. The engineering for the additions included a new entrance, security checkpoint, and lobby to alleviate a very overcrowded situation and a building expansion for Juvenile Probation and a newly established Family Court. **ZDS** designed a VAV air handling system with reheat HVAC system to address health, safety, and IAQ issues by increasing outdoor ventilation air rates, higher filtration, strict humidity control, DDC monitoring/control, carbon monoxide demand control ventilation, outside air measuring/monitoring and other design strategies. All HVAC equipment was designed for full DDC controls for remote monitoring and energy efficiency.



Project Costs: Total Cost \$10,270,000; Mechanical Cost \$3,200,000

Size: Renovations 93,000 ft² plus 23,000 ft² addition

Contact: Ms. Jerie Whitehead, Director (304) 357-0115

Project Name: *New Mercer County Courthouse Annex*

Location: *Princeton, WV*

Description: The new Mercer County Courthouse Annex, located across the street from the Mercer County Courthouse, was completed in 2006. The two-story building houses the Magistrate courtrooms, jury deliberation rooms, attorney conference rooms, video conference rooms, witness rooms, Court Clerk's offices, public research area, adult probation offices, Prosecutor's offices, probate offices, court administration offices and public areas. The existing courthouse adjacent to the new Annex also needed more electrical power. **ZDS** evaluated the existing courthouse's potential power needs and incorporated those in the new Judicial Annex's electrical systems while providing emergency power.



Project Costs: Approximately \$6,000,000

Size: 32,000 ft²

ZDS COMMERCIAL/GOVERNMENT PROJECT EXPERIENCE

Project Name: *The Museum of Culture and History – HVAC Renovations*

Location: *Charleston, WV*

Description: Lack of humidity control damaged many of the State's priceless artifacts. Books and other state collections were deteriorating rapidly due to lack of proper control of temperature, humidity and filtration. The occupants had also experienced allergic reactions and discomfort from the long-term high humidity conditions. **ZDS** identified and designed the solutions, which included converting an all-electric resistance heating system to natural gas, comprehensive DDC controls for central monitoring and control, converting AHUs from constant air volume to variable air volume while meeting stringent ASHRAE Indoor Air Quality requirements, providing variable water volume pumping and interfacing with the facility into the new District campus chilled water system to reduce long-term operating costs. The design also included providing a new boiler plant with redundant heating and piping distribution system and an emergency generator to help protect the State's priceless collections.



Project Costs: \$6,000,000; Reduced HVAC Operating Costs up to an estimated 50%

Size: 228,500 ft²

Contact: Mark Lynch, Director of Facility Operations (304) 558-0220

Project Name: *General Motors' Worldwide Facilities Group Commissioning*

Location: *North American Facilities*

Description: **ZDS Design/Consulting Services and Facility Dynamics Engineering** worked with General Motors Corporation's Worldwide Facilities Group on the Re-Commissioning Program for GM's North American Facilities. GM is comprised of over 350 million square feet of plant facilities spread out over 160 plants. The first phase of the program initiated in early 1996 involved the challenge of analyzing the HVAC systems within nine existing plants to determine deficiencies and opportunities to improve comfort, IAQ, extend the life of existing equipment and reduce operating costs. This involved HVAC planning and full upgrades, DDC/PLC controls, operating and maintenance, heat recovery, fuel conversion, training, VFD's, variable water volume pumping, steam optimization and chiller optimization.



Retro-Commissioning Costs: \$400,000,000, saving millions per major facility in energy/operating costs

Facility Size: Over 350,000,000 ft² encompassing 160 facilities

Contact: Jay Santos, Principal, Facility Dynamics Engineering (410) 290-0900

ZDS COMMERCIAL/GOVERNMENT PROJECT EXPERIENCE

Project Name: *New Fuel Cell & Maintenance Hangars Commissioning*

Client: *West Virginia Air National Guard*

Location: *Charleston, WV*

Description:

"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*

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. The first phase of the program initiated in early 2008 and continued until 2011. 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 performed a stellar job, going above and beyond what was expected. We would recommend them again!"** says Mr. Tom Warner, RA, LEED AP who was the LEED Coordinator for SAIC for both phases of the project. Mr. Warner adds with reassurance, "Please ask anyone to give me a call at (651) 209-2802."



Construction Costs: \$43,000,000 for both Phase I and II **Project Size:** 128,715 ft²

Contact: Captain Harry Netzer, WV Air National Guard (304) 341-6649

Project Name: *West Virginia Army National Guard Base Case Study*

Location: *Charleston, WV*

Description:



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. Two recent **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 Costs: Over \$4,000,000

Client Contact: Captain Todd Justice, WVANG (304) 561-6548

ZDS COMMERCIAL/GOVERNMENT PROJECT EXPERIENCE

Project Name: *New West Union Bank*

Location: *Bridgeport, WV*

Description: **ZDS** provided Award winning Engineering planning, design, bidding and construction administration services HVAC, Electrical, Plumbing, and Fire Protection working through a local Architect.



The new West Union Bank, located across the street from the Mercer County Courthouse, was completed in 2006. The two-story building houses the Magistrate courtrooms, jury deliberation rooms, attorney conference rooms, video conference rooms, witness rooms, Court Clerks offices, public research area; adult probation offices, Prosecutors offices, Probate offices, Court Administration offices; and public areas.

Construction Costs: \$1,500,000

Project Size: 32,000 ft²

Project Name: *Chase Tower*

Location: *Charleston, WV*

Description: A Charleston skyline focal point, the Chase Tower (formerly Bank One) contains 271,000 feet of professional office space. **ZDS** replaced the core central HVAC system for the entire building.



Project Name: *Laidley Tower*

Location: *Charleston, WV*

Description: One of the State's tallest buildings rising 18 stories high. **ZDS** provided the Master Engineering Planning for the whole structure.



ZDS upgraded the core Mechanical, Electrical and Plumbing systems, as well as customized tenant build-out renovations.

IV - Resumes

Todd has over 38 years of experience involving the analysis, design, construction management and specifications for mechanical engineering, heating, ventilating, air conditioning, plumbing, electrical and lighting, as well as indoor environmental quality analysis, building system commissioning and forensic engineering for educational, governmental, commercial, industrial and health care clients.

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.

Some of Todd's project experience includes governmental and commercial, health care, educational and military facilities. Todd selected and designed the pilot project for one of the largest geothermal heat pump applications in the mid-Atlantic region. He has retro-commissioned HVAC systems and mechanical engineering at numerous automotive facilities in North America. He has been involved with many commercial structures including high-rise commercial building renovations. Todd designed three West Virginia schools which received Energy Star Certifications in 2013, 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 EPA's Act which requires buildings use over 40% less energy than buildings designed using ASHRAE 90.1-2001.

EDUCATION

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

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

Todd has completed extensive forensic education training, some of which was under direction of Peter Vallas, Sr., world-renowned forensic specialist. Such training included the role of Professional Engineering in fire/arson investigations, heavy equipment fires, structural failures, product liability investigation/failure analysis, mold and water damage, 2014 NFPA 921 and 1033 updates, accident reconstruction-hydroplaning, bodily injury, laboratory analysis/documentation/testing, evidence handling/spoliation prevention, slip-fall investigation, automotive and marine claims. He also has extensive training in subrogation claims investigation/reporting procedures, ethics in forensic engineering, and an expert witness experience with over 20 years of experience. **He is a member of the Investigative Engineers Association (I-ENG-A) and founder of I-ENG-A of the Tri-State Region.**



PROFESSIONAL REGISTRATIONS

Professional Engineer:

West Virginia [REDACTED]
Ohio [REDACTED]
Kentucky [REDACTED]
Virginia [REDACTED]
Maryland [REDACTED]
Pennsylvania [REDACTED]
Georgia [REDACTED]
North Carolina [REDACTED]
South Carolina [REDACTED]

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

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

LEED Accredited Professional, National
Certification through USGBC No. [REDACTED]

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

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



GOVERNMENT AND COMMERCIAL PROJECTS

- Bank One – WV
- Bayer Material Science, South Charleston, WV
- Calvert County Aquatic Center, MD
- Culture Center HVAC, Fire Alarm, and Fire Protection renovations,
- General Motors Corporation of North America Re-commissioning Program
- Kanawha County Commission – 120,000 sf additions/renovations for the Judicial Annex/Kanawha County Courthouse – Charleston
- Kohl’s
- Laidley Towers – Charleston
- Mercer County Courthouse Annex – Princeton
- Olin Corporation
- Phillip Morris USA
- Rhone-Poulenc
- Santa Anna Federal Building, CA
- WV Capitol Complex Central Heating Plant Renovations
- Sears
- Toyota Motor Manufacturer, WV Inc.
- Union Carbide/DOW
- United Center – Charleston
- Walker Machinery
- WV Air National Guard including Cx \$45M Fuel Cell/Maintenance Hangars at Yeager Airport for LEED Silver
- WV Army National Guard
- WV Department of Transportation/DOH
- WV Division of Protective Services
- WV Higher Education Authority
- WV General Services Division
- WV Public Service Commission Headquarters
- WV State Capitol Complex renovations
- Yeager Airport

Todd also designed one of the largest geothermal heat pump applications in the mid-Atlantic region, and retro-commissioned HVAC systems and mechanical engineering at many General Motors’ facilities in North America.

HEALTH CARE PROJECTS

- Bluefield Regional Medical Center
- Cabell Huntington Hospital
- Charleston Area Medical Center (Memorial Division, General Division and Women & Children’s Hospital)
- Charleston Surgical Center
- Family Practice Center
- Jackie Withrow Hospital
- John Manchin, Sr. Health Care Center
- Hometown Healthcare Center
- Hopemont Hospital
- Lakin Hospital
- Lewistown Outpatient Surgical Facility, PA
- Mercy Medical Center
- Mildred Mitchell-Bateman Hospital
- Monongalia General Hospital
- Montgomery General Hospital
- St. Joseph’s Hospital
- St. Mary’s Hospital
- Summersville Regional Medical Center
- Surgicare Center
- Thomas Memorial Hospital
- United Hospital Center
- VA Hospitals – Clarksburg & Huntington
- Wayne Memorial Hospital
- Webster Memorial Hospital
- Welch Community Hospital
- William R. Sharpe, Jr. Hospital Additions and Renovations

EDUCATIONAL PROJECTS

Colleges and Universities

Projects include Alderson Broadus College, Bluefield State College, Concord University, Fairmont State College, Harvard University – LEED Gold Certified, Marshall University, Ohio University’s Athens and Chillicothe Campuses, Southern WV Community & Technical College, University of California-Davis, University of Charleston, Washington & Lee University, WVU Institute of Technology, West Virginia State University, West Virginia University and West Virginia Wesleyan College.

Todd was recognized nationally for his work with Ohio University in development of multiple performance contracting programs that are anticipated to save \$2.5 million annually in energy and operating costs. He has been involved in hundreds of higher education facilities.

Schools

M/E/P design for schools in West Virginia Counties of Calhoun, Clay, Fayette, Grant, Greenbrier, Hardy, Harrison, Jackson, Kanawha, Lewis, Logan, Marion, McDowell, Mercer, Mingo, Monroe, Ohio, Pocahontas, Putnam, Raleigh, Randolph, Ritchie, Summers, Taylor, Tucker, Upshur, Webster and Wyoming.

Some of Todd’s project experience includes development and design of a pilot geothermal heat pump HVAC with variable speed pumping system at Webster County High School, which reduced electric bills by more than 40% while meeting IAQ requirements.

*In 2013 Elkins Middle School, Webster Springs Elementary and Glade Elementary/Middle School were given **Energy Star Certification**, placing them in the nation’s top 25% of energy efficiency schools.*

Jennings has over 25 years of experience as an engineer involving the design, project management and construction management of heating, ventilating and air conditioning (HVAC), plumbing, electrical, lighting and specialized systems for health care, institutional and commercial facilities. His experience also includes indoor environmental quality analysis, building system commissioning and forensic engineering.

Prior to joining ZDS, Jennings' professional experience included working as an Owner's Representative at West Virginia University (WVU) in the positions of Staff Engineer and Construction Project Manager, and as a Mechanical Engineer for the West Virginia Department of Education (WVDE).

During his employment at WVU, Jennings was responsible for management of major repair and capital construction projects and in-house design of smaller projects. While working for the WVDE, he was responsible for quality control of design documents for various school system construction projects throughout the state of West Virginia; troubleshooting issues related to HVAC systems and Indoor Air Quality (IAQ); re-commissioning of HVAC systems to original design parameters; recommendations for HVAC operational and energy savings procedures; and training of county school systems' maintenance personnel. He performed annual investigations of facilities concentrating primarily on HVAC operation and occupant safety. Tasks included IAQ measurements such as temperature, humidity and carbon dioxide; HVAC equipment visual inspection; life safety assessment; and building component checks.

As a Project Engineer, Jennings specializes in developing scope, budget and design parameters; establishing program requirements through interaction with Owners and other Team members; design reviews; budget analysis and control; schedule control; complete design oversight and task assignment; construction administration and project closeout.

PROFESSIONAL REGISTRATIONS

Professional Engineer:

- West Virginia [REDACTED]
- Pennsylvania [REDACTED]
- Virginia [REDACTED]
- Maryland [REDACTED]

Jennings has completed multiple forensic education courses, some of which were under the direction of Peter Vallas, Sr. Such training included structural failures, fire investigations, product failures, mold and water damage, accident reconstruction and bodily injury, among others. He is a member of the Investigative Engineers Association (I-ENG-A) of the Tri-State Region.



EDUCATION

Bachelors of Science in Mechanical Engineering from West Virginia University

PROFESSIONAL AFFILIATIONS

Member of Investigative Engineers Association (I-ENG-A) of the Tri-State Region. Fire Investigation Certification under the direction of Peter Vallas, Sr.

President - American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE) West Virginia Chapter

Associate Member West Virginia Society for Healthcare Engineering

AWARDS AND RECOGNITIONS

Selected to assist in training of Code officials and the design community on the new ASHRAE 90.1-2007 State Energy Code adopted by West Virginia in 2013.



GOVERNMENT AND COMMERCIAL PROJECTS

- WV Air National Guard including commissioning for recent \$45M Fuel Cell/Maintenance Hangars at Yeager Airport for **LEED Silver Certified**
- WV Public Broadcasting Station HVAC design for transmitter station
- Federal Government Facility Cafeteria and Food Court Renovations, Electrical Vault Renovations

HEALTH CARE PROJECTS

- Children's National Medical Center (CNMC) – Washington, D.C.: 7-story East Wing Addition and Fit Out, multiple office suite renovations, Pediatric Intensive Care Unit (PICU) renovations, Hearing & Speech Outpatient Suite renovations, Quarantine Infection Control System Modifications, Pulmonary Outpatient Renovations, and Pharmacy Renovations
- Friendship Ridge – Beaver, PA: Bulk Oxygen System and Facility Distribution Upgrade
- Heritage Valley Health Systems (HVHS)/Sewickley Valley Hospital (SVH) - PA: Radiology Reading and Processing Suite Renovations, Outpatient Clinic and Emergency Department Renovations, 5th Floor Central/West Inpatient Wing Renovations
- HVHS/Moon – PA: Imaging X-Ray Relocation
- HVHS/The Medical Center (TMC) of Beaver - PA: Helipad Study, Bulk Oxygen Supply and Storage Replacement, Radiology Reading and Processing Suite Renovations, RIS-PACS Data Storage Facility
- Indiana Regional Medical Center (IRMC) - PA: New Blairsville Medical Office Building, IT Data Storage Room HVAC Upgrade, Dialysis Treatment Suite HVAC Upgrade
- Mount Nittany Medical Center (MNMIC) - PA: Commissioning for East Wing addition, ED renovations, Central Utility Plant upgrades, Special Services/Computer Services Building
- Somerset Hospital - PA: ADL Suite Fit-out, New Medical Office Building, Renovations to Cath Lab, CT Replacement, X-Ray Replacement, and Pharmacy Relocation
- VAMC Clarksburg - WV: 4th Floor Renovations (Psychiatric Suite)
- VAMC Coatesville - PA: New Hospice Facility
- VAMC Huntington - WV: Mental Health-Psychiatric Residential Rehabilitation Treatment Program (MH PR RTP) Addition and Renovations
- VAMC Philadelphia - PA: Renovations to Canteen, Dental Lab, Emergency Department and Patient Processing, Home Health Suite, Medical Records, MRI, CT Scan, Angio Suite, and Specialty Clinic; OR Suite HVAC System Upgrades; Chiller and Cooling Tower Replacements; New Patient Transport Elevator; Clean Steam System for Facility Wide Humidification
- WV Department of Health and Human Resources:
 - Jackie Withrow Hospital, Beckley: Master Planning Study, new central steam plant and renovations to heating and lighting systems
 - Hopemont State Hospital, Terra Alta: Master Planning Study, renovations to heating and lighting systems
 - John Manchin, Sr. Health Care Center, Fairmont: Master Planning Study, renovations to heating and lighting systems
 - Lakin State Hospital, West Columbia: Master Planning Study and exterior envelope renovations and lighting systems
 - Mildred Mitchell-Bateman Hospital, Huntington: Master Planning Study and lighting renovations
 - Welch Community Hospital, Welch: Master Planning Study and lighting renovations
 - William R. Sharpe, Jr. Hospital, Weston: 50 bed forensic addition and renovations to entire existing hospital while building remains in use including new central heating/cooling plant, 1,800 KW emergency power station and comprehensive HVAC and electrical renovations throughout the facility.

EDUCATIONAL PROJECTS

- West Virginia University (WVU)
 - Wise Library addition and renovation
 - Engineering Sciences Building chiller replacement
 - Coliseum's new primary 23kV power feed to existing sub-station
 - Engineering Research Building hydrogenation reactor lab
 - Armstrong Hall HVAC and sprinkler renovation
 - Numerous research laboratory renovations and hood installations
 - Elevator system upgrades in several buildings
 - Roof replacements for several buildings
 - White Hall Computer and Study Lab renovation
 - White Hall Chiller Plant
 - Lighting upgrade projects at various Morgantown campuses.
 - New Life Sciences Building on the downtown campus
 - Downtown Campus 4 KV electrical loop system upgrades.
 - Numerous minor renovation projects in various campus buildings
- Shepherd University Ikenberry Hall HVAC Renovation

Jim has nearly 40 years' experience in design and implementation of 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 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, Ohio, Kentucky, Virginia, Georgia, New York, Arizona, Illinois and Massachusetts.

Jim has extensive experience in energy savings' programs for 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 a very good relationship with the office of the West Virginia State Fire Marshal.



PROFESSIONAL AND COMMUNITY AFFILIATIONS

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



Member of the National Fire Protection Association (NFPA)



Past 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 AND COMMERCIAL PROJECTS

- Bluefield Area Transit Authority Administration and Maintenance Facility design.
- Boyd County, Kentucky Judicial Center
- Chase Towers (formally Charleston National Bank)
- Department of Transportation Rest Area prototype
- Department of Transportation Welcome Center prototype
- Fenway Park in Boston - Lightning Protection/Grounding Study
- Glenville State College
- I-70 Welcome Center
- Jackson County Libraries Renovations
- Kanawha County Commission Judicial Annex Renovations
- Meadowbrook Rest Areas North and South Bound
- Morgantown Welcome Center
- Redmond House Renovations design
- Rhone-Poulenc new administrative offices
- Sacred Heart Pavilion and Daycare Center
- Saint Patrick Church Renovations
- Shawnee Park Clubhouse
- Stonewall Jackson Marina Renovations
- Tucker County Board Office Boiler Retrofit
- Tucker County Courthouse Renovations
- WV Air National Guard – Commissioning for \$43 million maintenance and fuel cell hangars – **LEED Silver Certified**
- WV Department of Military Affairs and Public Safety Maintenance Facility in Eleanor
- WV Department of Transportation Burnsville Rest Area (**AIA Merit Award Recipient**) and Domestic Water Pumping Station
- WV Division of Culture and History Fire Alarm/Sprinkler upgrades
- White Sulphur Springs Welcome Center

HEALTH CARE PROJECTS

- Cabell Huntington Hospital
- Charleston Area Medical Center (CAMC) (prior to joining ZDS)
 - Projects included: Cath Lab III Renovations; 750 kW Emergency Generator/Underground Fuel System; Two-Four West Nursing Wing; Main Electrical Service Upgrade; Emergency Room Renovations; Surgical Intensive Care Retrofit' Two/Three East Patient Room Renovations; Four-North HVAC Renovations; Nuclear Medicine Renovations; Special Care Facility Contract Administration; Allied Health, Physical Therapy & Hydrotherapy; Three-Six Floor Patient Room South; Emergency Generator Retrofit Design; Heliport and pilots quarters; Wound Center; Pediatric Intensive Care & Newborn Intensive Care Unit; Central Electric Metering Design; CT Scan Addition; LDRP/Gynecology; Surgery Addition; Operating and Recovery Room HVAC System; Medical Office Building – General Division
- Kings Daughters Medical Center, Ashland (prior to joining ZDS) - Projects included: Cardiac Care Center; Medical Office Building
- Thomas Memorial Hospital
- St. Mary's Medical Center, Huntington
- United Hospital Center
- VA Hospital, Huntington –steam distribution system to serve six additional facilities on campus, main hospital domestic water line replacement and CT Scan renovations
- WV Department of Health and Human Resources Master Planning and renovations:
 - o Jackie Withrow Hospital, Beckley: new central steam plant; renovations to heating system and lighting systems.
 - o Hopemont State Hospital, Terra Alta: renovations to heating system and lighting systems.
 - o John Manchin, Sr. Health Care Center, Fairmont: renovations to lighting systems.
 - o Lakin State Hospital, West Columbia: lighting renovations.
 - o Mildred Mitchell-Bateman Hospital, Huntington: lighting renovations.
 - o Welch Community Hospital, Welch: lighting renovations.
 - o William R. Sharpe, Jr. Hospital, Weston: fifty bed forensic addition and renovations to entire existing hospital, 1,800 KW emergency power station.

EDUCATIONAL PROJECTS

- Davis Thomas Elementary/Middle School Renovations
- Elkins Middle School HVAC and Electrical Renovations- **2013 Energy Star Certified**
- Eastern Greenbrier Middle School Addition
- Kanawha County Schools
- Greenbrier West High School Additions/Renovations
- Marshall University Smith Hall Renovations
- Marshall University Student Housing in Huntington
- Mercer County Schools, Princeton High Schools Renovations, Vo-Tech Renovations, Lashmeet/Matoaka School Renovations, Montcalm High School, and Spanishburg Elementary Renovations.
- New Jaeger/Panther Elementary School
- Paul Blazer High School in Ashland
- Pleasant Hill Elementary School Renovations in Calhoun County
- Pocahontas County Community Center
- Raleigh County School County-Wide Domestic Water Service Upgrades
- Ritchie County Middle/High School Renovations
- Smithville Elementary School Additions/Renovations
- Woodrow Wilson High School HVAC/Electrical Renovations
- WVU Wise Library Fire Protection Renovations

James has over 15 years of experience in the building construction design industry. James specializes in design and project management for HVAC, Fire Protection, Plumbing and Commissioning engineering. James is an innovative problem solver in engineering design, communication methods and project management.

James' experience includes the Project Management, Engineering Design and Commissioning for heating, ventilating, air conditioning, plumbing, electrical and lighting for health care, industrial, educational and commercial facilities. He researches and applies International Building Codes, NFPA, ASHRAE standards, NEC and FGI Guidelines for Design and Construction of Health Care Facilities.

James implements ZDS' 3D Scanning services which have assisted in collecting key existing conditions for renovation projects, forensic engineering, historical preservation, and high definition reality capture. James has in-depth experience on collection, registration, and scan to BIM processes. His 3D scanning experience includes educational, health care, industrial and commercial facilities.

James maintains an active membership to the ASHRAE professional society and 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.

EDUCATION

BS in Mechanical Engineering from West Virginia University
Institute of Technology, Montgomery, WV

PROFESSIONAL REGISTRATIONS

Professional Engineer:

- West Virginia [REDACTED]
- Ohio [REDACTED]
- Maryland [REDACTED]

OTHER RECOGNITIONS

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

LEED Gold Certified Harvard Arboretum, Boston, MA



PROFESSIONAL AFFILIATIONS

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



American Society of Heating,
Refrigeration and Air
Conditioning Engineers
(ASHRAE), Chapter
Technology Transfer
Committee (CTTC) Chair for
ASHRAE's West Virginia
Chapter



Association of Energy
Engineers (AEE)



OTHER RECOGNITIONS

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



GOVERNMENT AND COMMERCIAL PROJECTS

- Bayer Material Science
- Bluefield Area Transit Authority Administration and Maintenance Facility design.
- Building 11, Capitol Complex HVAC Renovations.
- Burnsville Rest Areas North and South Bound – *AIA Merit Award Recipient*
- Cultural Center Fire Alarm and Fire Protection Renovations
- Department of Transportation Rest Area prototype
- Department of Transportation Welcome Center prototype
- Hardy County Daycare Center
- I-70 Welcome Center
- Jackson County Libraries Renovations
- Jackson County Courthouse Annex
- Kanawha County Judicial Annex Renovations
- Mason County Courthouse/Annex
- Meadowbrook Rest Areas North and South Bound
- Morgantown Welcome Center
- Pendleton County Courthouse additions/renovations
- Pocahontas County Community Center
- Point Pleasant River Museum addition
- Redmond House Renovations design.
- Sacred Heart Pavilion and Daycare Center
- Saint Patrick Church Renovations
- Tucker County Courthouse renovations
- Webster County Multi-tenant build-out
- West Union Bank *AIA Award Winning* new facility
- WV Army National Guard Indoor Firing Range HVAC renovations at four locations.
- WV Air National Guard – Commissioning for \$43 million maintenance and fuel cell hangars – *LEED Silver Certified*
- WV Capitol Complex Performance Contracting HVAC Retrofits and Master Planning for Security/Fire Alarm/Life Safety systems
- White Sulphur Springs Welcome Center

HEALTH CARE PROJECTS

- Charleston Area Medical Center (Wound Center)
- Charleston Surgical Center
- United Hospital Center
- VA Hospital, Huntington – Evaluation of existing campus steam distribution system and extension/upgrades to the steam distribution system, main hospital domestic water line replacement and CT Scan renovations
- Woodcrest Medical Center
- WV Department of Health and Human Resources:
 - Jackie Withrow Hospital, Beckley: Master Planning Study, new central steam plant and renovations to heating and lighting systems
 - Hopemont State Hospital, Terra Alta: Master Planning Study, renovations to heating and lighting systems
 - John Manchin, Sr. Health Care Center, Fairmont: Master Planning Study, renovations to lighting systems
 - Lakin State Hospital, West Columbia: Master Planning Study and exterior envelope renovations and lighting renovations
 - Mildred Mitchell-Bateman Hospital, Huntington: Master Planning Study and lighting renovations
 - Welch Community Hospital, Welch: Master Planning Study and lighting renovations
 - William R. Sharpe, Jr. Hospital, Weston: fifty bed forensic addition and renovations to entire existing hospital while building remains in use including new central heating/cooling plant, 2,100 KW emergency power station and comprehensive HVAC and electrical renovations throughout the facility

EDUCATIONAL PROJECTS

- Davis Thomas Elementary/Middle School Renovations
- Eastern Greenbrier Middle School addition
- Elkins Middle School HVAC/electrical renovations - *2013 Energy Star Certified*
- Glade Elementary/Middle School renovations – *2013 Energy Star Certified*
- Greenbrier West High School additions/renovations
- Harvard University Weld Hill Research and Administration Arnold Arboretum – *LEED Gold Certified*
- Jaeger/Panther Elementary School
- Independence Middle School
- James Monroe High School HVAC renovations
- Man/Central Elementary addition
- Marshall University
- Mercer County Schools, Princeton High School, Bluefield Middle School, Vo-Tech, Lashmeet/Matoaka School, Montcalm High School, and Spanishburg Elementary Renovations.
- New McDowell County Southside K-8 School
- Park Middle School HVAC renovations
- Pleasant Hill Elementary renovations
- Ritchie County Middle/High School HVAC/plumbing renovations
- Shady Spring Elementary School
- Smithville Elementary School additions/renovations
- South Charleston High School Evaluation
- Tucker County High/Career Center HVAC renovations
- WV University Institute of Technology – Engineering Building Evaluation
- WV Higher Education Policy Commission (WVHEPC) South Charleston Tech Center – Campus Comprehensive Infrastructure Evaluation
- Woodrow Wilson High School HVAC/Electrical Renovations

Ted has over eleven years of experience in building construction design industry. His strategic thinking and development deployment 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 educational, health care, industrial, and commercial facilities. He also has experience in speaking on how 3D laser scanning impacts our industry today.

Ted develops 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 at ZDS.

Ted's project experience includes the commissioning and design for heating, ventilating, air conditioning, plumbing, electrical and lighting systems for educational, health care, industrial and commercial facilities. His experience encompasses working both on new construction as well as renovation projects.

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.

PROFESSIONAL REGISTRATIONS

West Virginia State Board of Registration for
Professional Engineers - West Virginia [REDACTED]

Certified Energy Manager (C.E.M.) - National Certification [REDACTED]

EDUCATION

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



PROFESSIONAL AFFILIATIONS

Member of Investigative Engineers
Association (I-ENG-A)

American Society of Heating,
Refrigeration and Air Conditioning
Engineers (ASHRAE)

Incoming West Virginia ASHRAE
Chapter Secretary.

Membership Promotion Chair and Board
Member of ASHRAE's West Virginia
Chapter

Lifetime Member of the Association of
Energy Engineers (AEE)

Associate Member West Virginia
Society for Healthcare Engineering



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



COMMERCIAL AND INDUSTRIAL PROJECTS

- WV Air National Guard Maintenance Hangar and Fuel Cell Hangar, Charleston, WV – **LEED Silver Certified**
- Bayer Material Science
- Coal Heritage Trails Center Renovations
- Meadowbrook Rest Areas
- I-70 Welcome Center
- Morgantown Welcome Center
- Pocahontas County Community Center
- Serbia Rest Areas
- WV State Capital Complex Central Heating Plant
- White Sulfur Springs Rest Area

EDUCATIONAL PROJECTS

M/E/P design for schools in the following West Virginia counties includes:

- Davis-Thomas Elementary/Middle School Renovations
- South Charleston Middle School Evaluations
- Elkins Middle School Renovations – **2013 Energy Star Certified**
- Greenbrier West High School Additions/ Renovations
- Iaeger/Panther Elementary School
- Lashmeet/Matoaka Elementary School Renovations
- Marshall University, Huntington
- Mercer County Technical Education Center Renovations,
- Montcalm High School Renovations
- Princeton High School Renovations
- Raleigh County Schools – County-Wide Domestic Water Service Upgrades Smithville Elementary Schools additions and renovations.
- Spanishburg Elementary School Renovations
- Webster County - Glade Elementary/Middle School Renovations – **2013 Energy Star Certified**
- Woodrow Wilson High School HVAC/electrical renovations
- WV Higher Education Policy Commission (WVHEPC) South Charleston Tech Center – Campus Comprehensive Infrastructure Evaluation

HEALTH CARE PROJECTS

- West Virginia Department of Health and Human Resources Hospitals:
 - Jackie Withrow Hospital, Beckley: Master Planning Study, new central steam plant and renovations to heating system and lighting renovations.
 - Hopemont State Hospital, Terra Alta: Master Planning Study, renovations to heating system and lighting systems.
 - John Manchin, Sr. Health Care Center, Fairmont: Master Planning Study, renovations to lighting systems.
 - Lakin State Hospital, West Columbia: Master Planning Study and exterior envelop and lighting renovations.
 - Mildred Mitchell-Bateman Hospital, Huntington: Master Planning Study and lighting renovations.
 - Welch Community Hospital, Welch: Master Planning Study and lighting renovations.
 - William R. Sharpe, Jr. Hospital, Weston: fifty bed forensic addition/renovations to entire existing hospital while building remains in use including new central heating/cooling plant, 1,800 KW emergency power station and comprehensive HVAC and electrical renovations throughout the facility

V – Testimonial Letters and Recognition



Michael Pickens

172 Oak Street

Dunbar, WV 25064

(304) 400-9993

April 20, 2015

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,

Michael E. Pickens



July 19, 2013

To whom it may concern:

ZDS Design/Consulting Services was sub-contracted by SAIC to perform the fundamental commissioning activities on a two-phase maintenance and fuel cell hangar project for the 130th Airlift Wing on the West Virginia Air National Guard Base at Yeager Airport outside Charleston, West Virginia.

Without hesitation, I recommend Todd Zachwieja and his team for their efforts on this complex project. The first phase, the Replace Aircraft Maintenance Hangar and Shops phase, was initially scoped to meet a certifiable level for LEED® certification. ZDS Design/Consulting Services worked with my team and the West Virginia Air National Guard (WVANG) representatives through the design phase to provide the necessary activities required to meet the LEED® Energy and Atmosphere Prerequisite 1, Fundamental Commissioning of the Building Energy Systems. However, when the second phase, the Fuel System/Corrosion Control Hangar and Shops phase, came to life about the time that phase 1 construction began, the entire project was required by the National Guard Bureau to be certified by the Green Building Certification Institute (GBCI) at a LEED® Silver level. ZDS Design/Consulting Services diligently worked with the general contractor, the WVANG and SAIC to develop an approach to the phasing of the commissioning activities for both buildings that still met the fundamental commissioning prerequisite requirements as one of the hangars was to lay dormant after completion for an extended period of time until near the completion of the second phase. This required that ZDS Design/Consulting Services perform some of the commissioning activities for the first phase during the first phase construction and the remainder during commissioning of the second phase.

Through the construction process, Todd Zachwieja's group kept me well informed on their schedule and their deliverables. Todd was frequently on my LEED status calls with the contractor to stay abreast of any upcoming issues that would affect the commissioning activities and to assist in how to resolve issues that would come up. In addition, ZDS Design/Consulting Services assisted us with services beyond the commissioning activities as well. These included providing and reviewing building flush-out calculations to determine if LEED® Indoor Environmental Quality Credit 3.2, Construction IAQ Management Plan, Before Occupancy, was achievable and providing light level readings for a light pole that needed to meet certain light levels. The project achieved LEED® Silver certification and the fundamental commissioning prerequisite was approved by the GBCI after the first construction review without qualification.

ZDS Design/Consulting Services proved to be a well-qualified firm that provides timely and efficient services. SAIC was extremely pleased with their services on this challenging project.

Sincerely,

SAIC Energy, Environment & Infrastructure, LLC

A handwritten signature in black ink, appearing to read "Thomas Warner", with a long, sweeping underline.

Thomas Warner, LEED® AP, BD&C
LEED Administrator/Senior Architect

SAIC Energy, Environment & Infrastructure, LLC

60 East Plato Boulevard, Suite 300 | St. Paul, MN 55107 | tel: 651.771.2222 | fax: 651.778.3911 | saic.com/EEandI



ELSWICK & ASSOCIATES, LLC

April 15, 2015

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 long, sweeping horizontal stroke extending to the right.

Bill Elswick, MBA, CEO