



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

**State of West Virginia
 Centralized Expression of Interest**

Proc Folder: 92163

Doc Description: ADDENDUM #2 - EOI FOR ABCC FIRE PREVENTION RENOVATIONS

Proc Type: Central Purchase Order

Date Issued	Solicitation Closes	Solicitation No	Version
2015-05-26	2015-06-16 13:30:00	CEO! 0708 ABC1500000001	3

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

Vendor Name, Address and Telephone Number:

ZDS Design/Consulting Services
 281 Smiley Drive
 St. Albans, WV 25177
 Phone: (304) 755-0075

RECEIVED

2015 JUN 15 AM 9:19

WV PURCHASING
 DIVISION

FOR INFORMATION CONTACT THE BUYER

Evelyn Melton
 (304) 558-7023
 evelyn.p.melton@wv.gov

Signature X

FEIN # 550735995

DATE June 16, 2015

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

INVOICE TO		SHIP TO	
PROCUREMENT OFFICER ALCOHOL BEVERAGE CONTROL COMMISSION 4TH FLOOR 900 PENNSYLVANIA AVE CHARLESTON WV25302 US		ABCA WAREHOUSE HUB INDUSTRIAL PARK 97 INDEPENDENT AVE NITRO WV 25143 US	

Line	Comm Ln Desc	Qty	Unit Issue
1	Architectural/Engineering Design -Fire Prevention Renovation		

Comm Code	Manufacturer	Specification	Model #
81101508			

Extended Description :

ARCHITECTURAL/ENGINEERING DESIGN FOR THE FIRE PREVENTION RENOVATION OF ABCC WAREHOUSE LOCATED IN NITRO, WV.

ADDENDUM NO. 2 ISSUED:

- TO PROVIDE RESPONSES TO VENDORS' QUESTIONS
- TO PROVIDE VENDORS A COPY OF THE MANDATORY PRE-BID SIGN-IN SHEETS
- TO PROVIDE ADDENDUM ACKNOWLEDGMENT
- END OF ADDENDUM NO. 2 ---

ADDENDUM NO. 1 ISSUED:

- TO MOVE THE MANDATORY PRE-BID MEETING DATE
FROM: 05/11/2015
TO: 05/15/2015
- MANDATORY PRE-BID MEETING TIME AND PLACE REMAIN THE SAME.
- TO MOVE THE QUESTIONS SUBMISSION DEADLINE
FROM: 05/18/2015
TO: 05/20/2015
- END OF ADDENDUM NO. 1 ---

THE WEST VIRGINIA PURCHASING DIVISION IS SOLICITING EXPRESSIONS OF INTEREST ON BEHALF OF THE WV ALCOHOL BEVERAGE CONTROL COMMISSION FROM QUALIFIED FIRMS TO PROVIDE DESIGN SERVICES AND BID DOCUMENTS TO UPGRADE THE WATER SERVICE TO THE EXISTING SPRINKLER SYSTEM, REMOVAL OF THE EXISTING WATER TANK AND OTHER NECESSARY FIRE SYSTEM UPGRADES FOR THE ABCC WAREHOUSE LOCATED AT 97 INDEPENDENT AVENUE, NITRO, WV 25143.

ABC150000001	Document Phase Final	Document Description ADDENDUM #2 - EO! FOR ABCC FIRE PREVENTION RENOVATIONS	Page 3 of 3
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ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: CEOI_ ABC150000001

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

Todd A. Zochireja
 Authorized Signature

June 16, 2015

Date

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

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)

Phone: (304)755-0075 Fax: (304)755-0076 Date: 6/16/2015

(Phone Number) (Fax Number) (Date)

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: *Joseph A. Zochineja* Date: June 16, 2015

State of West Virginia

County of Kanawha, to-wit:

Taken, subscribed, and sworn to before me this 16 day of June, 2015.

My Commission expires May 21, 2020

AFFIX SEAL HERE

NOTARY PUBLIC

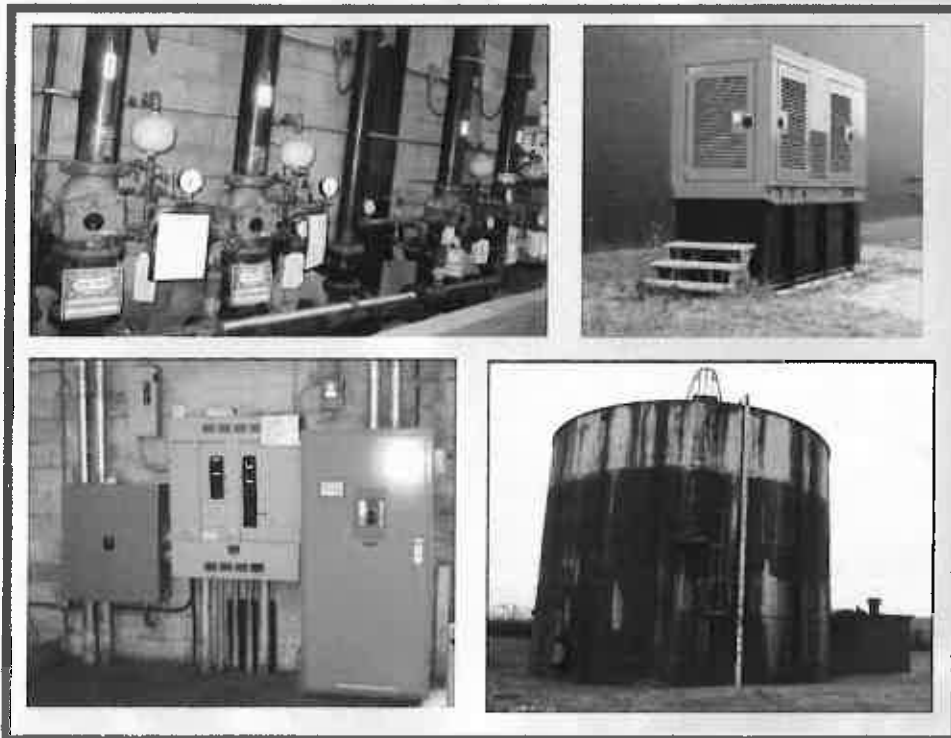
Lauren Meeh

Purchasing Affidavit (Revised 07/01/2012)





Expression of Interest
To Provide Professional Engineering Services
for the
ABCC Warehouse Fire Protection Renovations



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

Solicitation No.: CEOI_ABC15000000001

June 16, 2015

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

June 16, 2015

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

RE: ABCC Warehouse Fire Protection Renovations – CEOI_ABC1500000001

We respectfully submit this Expression of Interest “EOI” and hope to have the opportunity to perform design services, prepare bid documents and provide, in conjunction with the Agency personnel, Construction phase services on this important Project.

Our Project team will consist of **ZDS Design/Consulting Services** in the lead role and **Triad Engineering** providing support services for the site/civil portions of the Project. This team has the experience to bring quality professional engineering services necessary to the *ABCC Warehouse Fire Protection Renovations*.

As described in the solicitation the successful firm will be responsible for field investigations to document local conditions including locations of site utility infrastructure that may be impacted by the proposed Project and confirmation that the current FP sprinkler system is in compliance with current Codes. This process will include discussions with the Agency’s representatives regarding the approach to addressing any issues that are identified. The scope of the Project will then be determined and design services can begin. Our Team will closely coordinate the necessary work for a successful implementation of the Owner’s needs. Development of the bidding documents will include extension of the new water service from WVAWC, connection to the existing sprinkler system in the facility, provisions for a new electric fire pump that will have backup power either from the existing emergency generator or a newly designed emergency generator as deemed necessary, and other work that may be required to complete the Project goals. Following completion of the new installations the demolition of the existing 300,000 gallon water tank, fire pump, piping and appurtenances will be performed.

ZDS has enjoyed working with many facilities and State agencies throughout West Virginia and the surrounding areas. We hope to have the opportunity to perform engineering services for the fire protection system at the *ABCC Warehouse* in Nitro, WV. We have provided professional mechanical and electrical engineering consulting/commissioning services for facilities across the country, the State of West Virginia and Federal agencies involving fire protection services. We believe we understand your needs and our knowledge will be an excellent fit for the proposed professional services. Our combined experience involves hundreds of health care, government and school projects including working with the WV DHHR, the School Building Authority, the State Fire Marshal and the West Virginia Department of Education.

We have enclosed two (2) copies outlining the **ZDS’** team qualifications to provide Professional Engineering Services and related work for the *ABCC Warehouse*. Our professionals are dedicated to performing quality services taking into account our clients’ needs, scheduling and budgets. Refer to Section II of this document for a brief description of the **ZDS’** team Organization and Services.

Refer to Section III of this document for related project experience: The ZDS Team has extensive experience in renovation projects including emergency generator projects.

We are recognized for our specialties in fire protection/sprinkler systems, civil/site design, mechanical design, electrical design, indoor air quality services, energy conservation/performance contracting and commissioning services for Commercial, Governmental, Health Care and Educational facilities. ZDS principal Todd Zachwieja specialized in energy conservation design prior to establishing ZDS and was involved in hundreds of millions of dollars in renovations, new construction, and Performance Contracting. Some projects include Ohio University's Athens and Chillicothe campuses, Harvard University's new LEED Gold Arboretum, and the \$43 million West Virginia Air National Guard Fuel Cell/Maintenance Hangars at the Yeager Airport in Charleston. We do work in 24 states but our home is in West Virginia.

The ZDS team has the expertise to provide economical solutions to your specific project's needs. We have been extremely effective in the past by acting in our clients' behalf to incorporate new proven technologies and management methods that have saved our clients substantial funds in construction and operating costs. We pride ourselves on being viewed as an extension to the client's staff and successfully incorporating pertinent information about their facility into any proposed solution.

Refer to Section IV of this document for our Professional Qualifications with detailed resumes. We believe that our experience in providing solutions for our Client's engineering needs make us most qualified to work on these types of projects. We continue to have an excellent working relationship with the WVDHHR, West Virginia State Fire Marshal, West Virginia Department of Education and the State of West Virginia. Below is a partial listing of the Project Team.

Todd A. Zachwieja, ZDS Principal-in-charge of Design/Commissioning and Project Management BSME, MSEM, P.E., CEM, LEED AP with over 38 years of experience in M/E fire protection 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.*

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

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

James Lowry, ZDS Senior Engineer, BSME, P.E. specializing in HVAC plumbing and fire protection design and commissioning with over 15 years of experience.

Ted A. Zachwieja III, ZDS BSME, 2012 Legend-in-Energy Award, specializing in 3D MEP design and responsible for all IT systems administration while working for ZDS over 11 years.

Jack E. Ramsey, TRIAD ENGINEERING BSCE, P.E., department manager for the utilities section with over 21 years of experience. Instrumental in helping clients obtain loans and grants.

Larry L. McCoy, Jr., TRIAD ENGINEERING BSCE, P.E., project manager and department manager for the civil/transportation design section with over 18 years of experience.

Joe H. Young, TRIAD ENGINEERING BSLA, R.L.A., senior landscape architect for the southwest region. Specializes in site inventory/analysis, production, conceptual design, graphic presentations and project management with over 24 years of experience.

We encourage you to call and ask how well we worked with our clients' staff, our technical strengths and our ability to work with contractors to provide the *ABCC Warehouse* with a quality project. Please feel free to contact any of the following references about ZDS' work and more details:

1. Mr. Ron Adkins, WV Department of Health and Human Resources, former Project Manager for WV Air National Guard projects (304) 634-9379.
2. Mr. Greg Nicholson, Retired COO, WVDHHR, Charleston, WV (304) 552-0101.
3. Mr. Bill Elswick, former Executive Director of the West Virginia Department of Education (304) 542-8877.
4. Mr. Mike Pickens, Executive Director of School Facilities, West Virginia Department of Education (304) 558-2711.
5. Mr. Tim Holbrook, Clerk-of-Works Greenbrier County Schools (304) 546-1893.

The ZDS team has over five decades of experience in West Virginia, giving us the local understanding of your needs. We have extensive renovation experience, including phasing construction, to minimize potential disruptions.

Our approach is different than the traditional role; we have actual operational experience and design experience. We have designed system improvements and commissioned Mechanical/Electrical systems.

We believe the best engineers lead the industry in applying innovative ideas and concepts while adhering to proven approaches.

ZDS has an excellent track record of completing projects on time and in budget.

We have staff ready and willing to start on your project. We believe that our specialties provide the *ABCC Warehouse* project with the best expertise to provide economical solutions for your specific project's needs. We look forward to discussing our qualifications and your project. If there are any questions, please do not hesitate to call.

Sincerely,



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

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. Today ZDS founders have combined experience exceeding 125 years of technical expertise:

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

Ted T. Zachwieja, Founder, M/E/P Construction Administration Project Executive, has over 55 years experience in the design and consulting business. He was owner of Ted T. Zachwieja & Company from 1962 to 1982.

Daniel H. Kim, Ph.D., Manager of Strategic Planning, brings with him over 25 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 WITNESS

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 dating back as far as 1958. We offer a complete package.

ZDS works with all levels of the client's staff: the building owner, budget supervisor, operating and maintenance staff and others impacted by the project. We recognize that the maintenance and operating staff live with the design long after the project's completion. We listen to and work with those who will continue to operate and maintain the equipment. We find that proper communication benefits the client throughout the design process and beyond.

The ZDS design team provides a total system evaluation for cost-effective selection, installation, and ease of maintenance for both new systems and retrofit of in-place systems.

Design begins with our client. Our staff meets with our client to review their concerns, budgets and schedules. The ZDS design team reviews the entire picture, and ends with "A Total Design."

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.

Ted T. Zachwieja, Executive

Daniel H. Kim, Ph.D.

OFFICES

St. Albans, WV

Morgantown, 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.

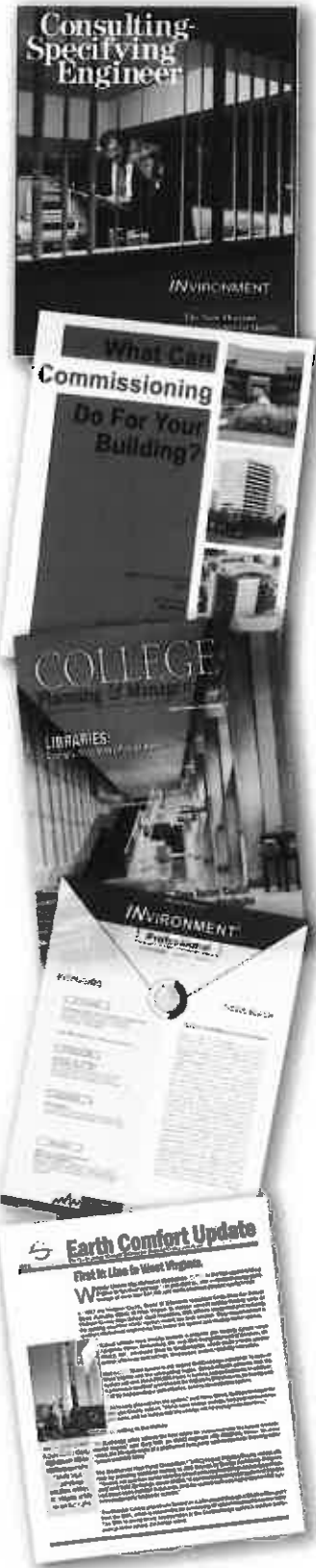
Todd Zachwieja, **ZDS** Principal, is contributing editor for the following IAQ publications:

- 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

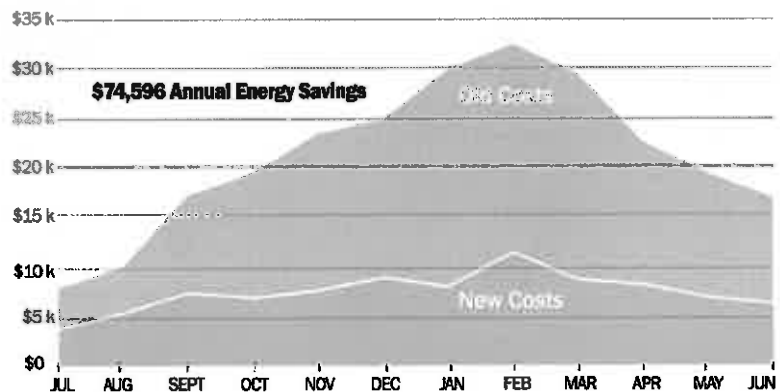
In addition to the energy management projects outlined above, the ZDS team members have extensive experience in identifying and implementing energy efficient operating and maintenance measures. These are typically low cost or no cost measures that include:

- 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.

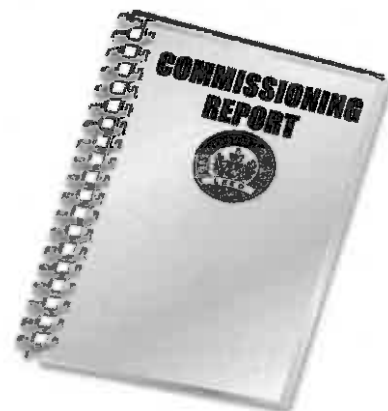
NATIONAL RECOGNITION

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.



Since 1958, 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
- 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

Triad Engineering, Incorporated (Triad) is an **employee owned**, regional consulting firm based in West Virginia that provides professional services in the areas of civil, environmental, geotechnical engineering; site assessment; planning and landscape architecture; geology and hydrogeology; surveying and mapping; construction inspection; and related services. Our firm has provided services on many thousands of projects of varying size and complexity since its founding in Morgantown, West Virginia in 1975.

Through our nearly 40 years of service in West Virginia and surrounding states, both the number and complexity of these projects have grown. Our clients include Federal and State governmental agencies, mining and industrial corporations, contractors, architects, engineers, attorneys, developers, and commercial organizations.

Facilities and equipment available to support our staff have continued to evolve through the years to adapt to the changing needs of the market. Each of our offices contains computer facilities that are utilized for hydrogeological evaluations, risk assessment, stability analyses, survey data



reduction, mapping and site design. Our computer based drafting and reproduction facilities are used to develop detailed site plans, construction details, and other graphic documentation as required for our projects. Our Utilities Group possess all the necessary equipment to perform a thorough and comprehensive Sanitary Sewer Evaluation Study including Closed Circuit Television Camera Systems (remote control and cable driven), flow meters and smoke testing equipment.

Triad currently includes a staff of nearly 200 personnel located in seven offices: Hagerstown, Maryland; Pittsburgh, Pennsylvania; Ashburn and Winchester, Virginia; Athens, Ohio; and Morgantown and St. Albans (Scott Depot), West Virginia. Our personnel include chemical, civil, environmental, geotechnical and mining engineers, as well as geologists and hydro geologists, biologists, chemists, environmental scientists, planners, landscape architects, natural resource specialists, regulatory compliance specialists, permitting engineers, risk assessors and health and safety specialists.

III – Expertise and Project Experience

ZDS Commercial/Government Project Experience



DESIGN/CONSULTING ENGINEERING SERVICES
MECHANICAL • ELECTRICAL • IAQ • ENERGY • COMMISSIONING

ZDS COMMERCIAL/GOVERNMENT PROJECT EXPERIENCE

Project Name: *State of West Virginia Capitol Complex Performance Contracting*

Location: *Charleston, WV*

Description: ZDS was a consultant working under the direction of Johnson Controls, Inc. for Engineering planning and design for central heating plant, DDC controls, Air Handling Unit replacements and retrofits, operating and maintenance, training, heat recovery, fuel conversion, VFD's, variable water volume pumping, steam/heating hot water and chiller optimization. The scope of the project included various energy conservation measures to the Capitol Building as well as several other buildings, including the Governor's Mansion. Some improvements included either the replacement or retrofit of major air handling units, re-establishing proper control strategies, reducing outdoor air intake quantities when allowable, installing new building automation equipment, general HVAC equipment repairs and replacement, documentation of existing and post-construction conditions, and establishing a consistent overall operating strategy.



Contracting Costs: \$10,108,802

Initial Year Savings: \$1,079,296

Size: 1,929,155 ft²

Client Contact: Russ Labarbra, Johnson Controls, Inc. (304) 759-2709

Project Name: *State of West Virginia Capitol Complex – Division of Protective Services*

Location: *Charleston, WV*

Description: Engineering master planning and design for specific life safety issues involving homeland security, fire alarm, sprinklers, emergency power, CCTV, intercom, mass notification and "giant voice" system.

ZDS is in a 10 year contract to provide a preliminary procurement plan for the design, construction and installation of an integrated intercom, emergency notification, and fire alarm system. The engineering master planning and design services are for all State facilities on the Capitol Complex.



Projected Program Costs: \$15,000,000

Size: West Virginia Capitol Complex grounds and facilities

ZDS COMMERCIAL/GOVERNMENT PROJECT EXPERIENCE

Client Contact: Matt Brown, Security Systems Manager (304) 558-9911

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.



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.



Design/Consulting Services



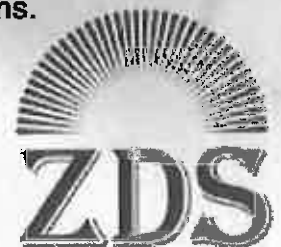
West Union Bank

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

Clear Mountain Bank *(formerly called Sabratorn)*



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



Design/Consulting Services



AIA West Virginia
MERIT AWARD
 FOR ACHIEVEMENT IN ARCHITECTURE

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.



Design/Consulting Services

Emergency Generator Projects

ZDS electrical engineering projects include governmental facilities and complexes that often require multiple levels of security.



Buildings 5, 6 & 7



Engineering master planning and design for specific life safety issues involving homeland security, fire alarm, sprinklers, emergency power, CCTV, intercom, and mass notification system.



Building #3



Building #4



East Wing and West Wing



West Virginia Division of Culture and History
A 228,500 ft² Facility



Emergency Power Generator

Engineering master planning, energy analysis, Mechanical/Electrical/Fire Protection design, bidding and construction.



Design/Consulting Services

Emergency Generator Projects

Our experience includes health care facilities and complexes that require multiple levels of security and power requirements.

CAMC General Division



Charleston Area Medical Center (CAMC)
One of the largest health care providers in West Virginia.

- Commissioning
- Energy Conservation
- Electrical Systems
- Emergency Generator
- Fuel Oil Storage
- HVAC Systems
- Power Controls
- Emergency Retrofits
- Campus Interconnects

CAMC Memorial Division



Women & Children's Hospital



The WVDHHR hired ZDS as the prime consultant for renovation work including engineering master planning, energy analysis, emergency power generators, M/E/P, bidding and construction administration for retrofitting the 212,000 ft² hospital.

William R. Sharpe, Jr. Hospital



Crane lowering the emergency power generator into the electrical room.

United Hospital Center



Design/Consulting Services

Emergency Generator Projects

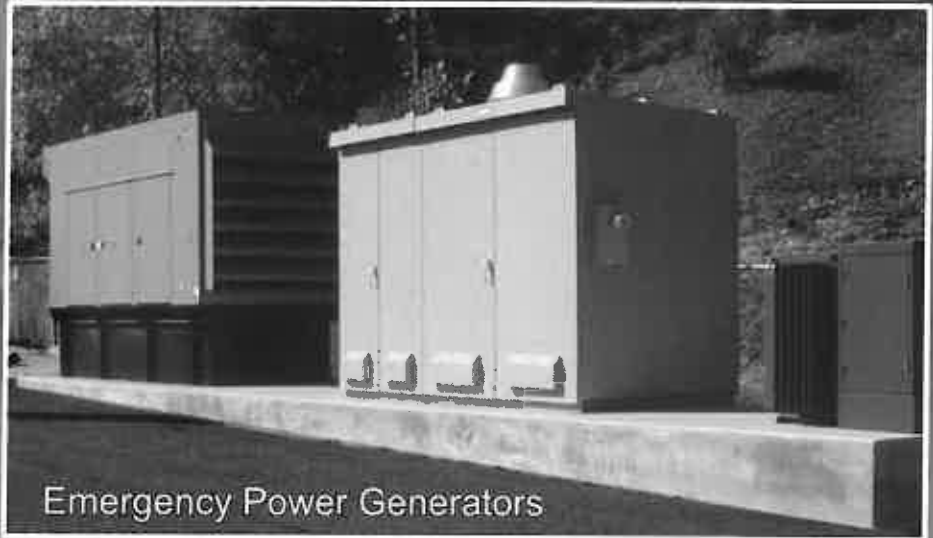
Our experience includes educational and governmental facilities that require multiple levels of security and power requirements.



**West Virginia Army
National Guard**

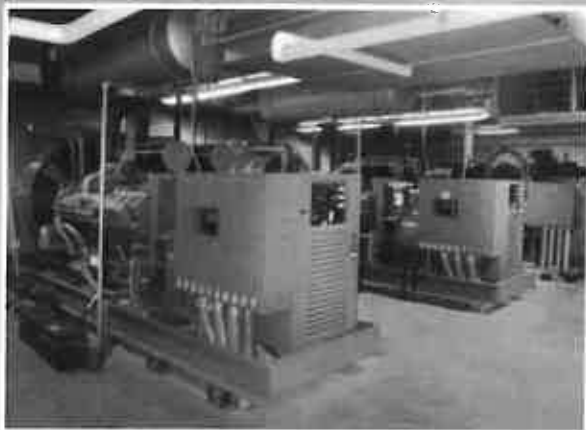
Army Headquarters
Building and Annex

Charleston, WV



Emergency Power Generators

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.



Three emergency power generators were used on this project: one at 1250 kW, the second at 1250 kW and the third at 1000 kW.

**West Virginia University NASA Facility
*Fairmont, WV***

The National Aeronautics and Space Administration (NASA) manages the nation's civilian space program and leads aeronautics and aerospace research.

The emergency power system supports many facets of the entire WVU NASA campus facility operations including computer mainframes, electrical, HVAC, fire safety and security systems.



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



3D Laser Scanning

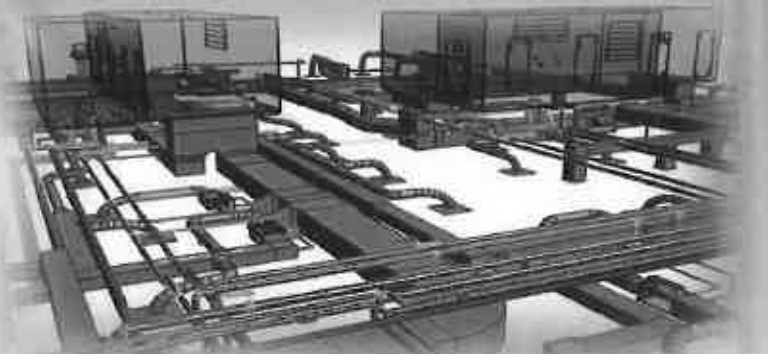


Data points of building interior

"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.



RELATED PRIOR EXPERIENCE

Commerce Park Mixed Use Development Huntington, WV

Project Description:

The project consisted of the development of an existing industrial site into a multi-use site consisting of multi-family housing, flex space warehousing, and future retail. The existing site consisted of an approximately 12 acre industrial site which has had many uses since its initial development in 1926, ranging from glass product manufacturing to various other uses including heavy equipment manufacturing, metal fabrication, machine and welding shop, and various industrial truck repair and maintenance operations. TRIAD initially conducted an extensive Site Characterization under the West Virginia Voluntary Program (WVVRP). The site was parceled to allow for the use of differing redevelopment land-use scenarios. Certificates of Completion (COCs) have been issued by the WVDEP, OER for all three parcels at the site.

TRIAD provided full civil engineering services including site development design during development for this project. The project consisted of the construction and site development for mixed residential and commercial use. The residential development consisted of a 6 acre site including 7 buildings with a total of 52 housing units. The commercial development consisted of an additional 6 acres for a flex space warehouse and future retail out parcels. TRIAD worked with a project team consisting of the architect and developer, to develop a complete comprehensive set of construction drawings. Site features included concrete and asphalt paving, sidewalks, curb and gutter, site utility routing and drainage structures.

Services provided by Triad consisted of a phase I environmental site assessment to determine past site usage regarding any environmental concerns, field surveying to generate a map of existing site and topographic features, a geotechnical investigation to determine subsurface conditions to facilitate design of the building foundations and associated site work, design of all site grading and drainage features, and preparation of West Virginia Division of Highways (WVDOH) encroachment permit and West Virginia DEP construction storm water permits.



Client

Structures Resources, Inc.
Huntington, WV

RELATED PRIOR EXPERIENCE

Devonshire Development Scott Depot, WV

Project Description:

TRIAD provided full civil engineering services including site development design for this project. The project consisted of the construction and site development for a large luxury mixed used residential development located in Scott Depot, West Virginia. The development which encompasses approximately 110 acres will ultimately have 532 luxury apartments, 174 townhouses, 72 condominiums and 59 single family patio homes. The development also includes a 6,500 square feet clubhouse, resort style pool, play grounds and sport courts. TRIAD worked with a project team consisting of the architect and developer, to create a complete, comprehensive set of construction drawings. Site features included concrete and asphalt paving, sidewalks, curb and gutter, site utility routing, drainage structures, and storm water management features.

Services provided by Triad consisted of, field surveying to generate a map of existing site and topographic features, geotechnical investigations to determine subsurface conditions to facilitate design of the building foundations and associated site work, design of all site grading and drainage features and storm water management features, and preparation of West Virginia Division of Highways (WVDOH) encroachment permit and West Virginia DEP construction storm water permits. The permitting phase of the project also included close coordination with the Putnam County, West Virginia Planning Commission to obtain building permits and certificates of occupancy. Triad also performed construction administration services on this project including full time inspection, construction documentation, pay estimate review, and Owner / Contractor coordination.



Client

Cathcart Properties, Inc.
Scott Depot, WV

RELATED PRIOR EXPERIENCE

Federal Express Ground Distribution Center Cross Lanes, WV



Project Description:

The project consisted of a distribution facility for Federal Express. The site was constructed on a vacant 10 acre lot located at the SW corner of the intersection of Donald Karnes Blvd. and J.W. Drive in Cross Lanes, WV. The site is located outside the Nitro City Limits and was under the jurisdiction of Kanawha County Planning Commission.

In order to facilitate the increased truck traffic to the facility, the project also consisted of upgrading the existing public roads to the site.

Triad worked for multiple clients on this project. Services provided by Triad for this project consisted of full site civil design services for the site and access road, geotechnical investigation, construction layout and quality control testing and inspection services during construction.

Clients

Cooper Construction – Birmingham, Alabama
Jackson Taylor Contractors – Mentor Ohio
SOLCO – Charleston, WV

RELATED PRIOR EXPERIENCE

Water Distribution System Improvements Project and Tank Rehabilitation Camden on Gauley, West Virginia

Project Description

The project will consist of approximately 37,000 feet of 6-inch PVC, 1,365 feet of 4-inch PVC, and 5,500 feet of 2-inch Yelomine water line, one (1) river crossing, 63 gate valves, 235 meter settings, 31 fire hydrants, 11 blow-off hydrants, one (1) hydro-pneumatic booster station, pressure reducing station, master meter, rehabilitation of the existing 100,000 gallon water storage tank and all necessary appurtenances. The new water lines will replace the existing transite water lines. The proposed water lines will be installed in West Virginia Division of Highways right-of-way to the fullest extent feasible, with the exception of the area from the Craigs ville PSD water treatment plant (WTP) to the existing system located along WV Route 20. This line will be installed in order to eliminate the river crossing directly across from the WTP over to County Route 48/3.

Services provided by TRIAD include surveying, drilling, asset management plan preparation, design layout / hydraulics, engineering design and preparation of construction documents and assistance in obtaining project funding. Triad obtained permits from West Virginia Department of Highways and West Virginia Department of Health.

Triad Project Manager

Amanda Sutphin

Project Completion

February 2014

Project Cost

Fee: \$381,400, Total Project Cost: \$3,461,000, Construction Cost: \$2,579,605.50 (Bid)

Project Contact

Honorable Lisa Prather, Mayor
Town of Camden on Gauley
9676 Webster Road
Camden on Gauley, West Virginia 26208
Phone: (304) 226-8667

RELATED PRIOR EXPERIENCE

Water Distribution System Improvements – Phase I Town of Mason, West Virginia

Project Description

The project replaced portions of the water distribution system having dated up to 70 years old. The project consisted of approximately 6,500 feet of 8-inch PVC, 15,500 feet of 6-inch PVC, 4,000 feet of 2-inch Yelomine water line, 115 gate valves, 350 meter settings, 17 fire hydrants, 7 blow-off hydrants, and all necessary appurtenances. The project provided fire protection to areas that had none and replaced lines with high incidence of maintenance. Old meters were replaced so that more accurate readings would be produced resulting in an increase of revenues. Valves were installed to allow the Town to isolate leaks more efficiently and the main line which serves the Clifton community was upgraded to alleviate low pressure problems.

Services provided by TRIAD include surveying, drilling, design layout / hydraulics, engineering design and preparation of construction documents and assistance in obtaining project funding. Triad obtained permits from West Virginia Department of Highways and West Virginia Department of Health.

Triad Project Manager

Amanda Sutphin

Project Completion

August 2008

Project Cost

Fee: \$270,946, Total Project Cost: \$1,719,000, Construction Cost: \$1,185,690 (Bid)

Project Contact

Honorable Jerry Tucker, Mayor
Town of Mason
P.O. Box 438
656 Second Street
Mason, WV 25260
Phone: (304) 773-5200

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 EPAct 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]
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.



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



JENNINGS L. DAVIS II, P.E.
ASSOCIATE – PROJECT MANAGER
SENIOR MECHANICAL AND COMMISSIONING ENGINEER

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]

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 (MNMC) - 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 PRRTP) 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



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]

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. Ted has specialized in Building Information Modeling as well as managing the processes, technology, and communication methods at ZDS. Ted is an innovative problem solver in engineering design, communication methods and management of BIM models between stakeholders during a design project. His responsibility includes the strategic development and deployment of ZDS' BIM standards, initiating in-house training and overseeing day to day operations on the IT Systems and office processes.

Ted developed ZDS' 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.

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.

EDUCATION

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

PROFESSIONAL REGISTRATIONS

West Virginia State Board of Registration for Professional Engineers—West Virginia

Ted has completed multiple forensic education courses, some of which include structural failures, fire investigations, product failures, mold and water damage, accident reconstruction and bodily injury. He is a member of the Investigative Engineers Association (I-ENG-A) and I-ENG-A of the Tri-State Region.



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. Only 4 engineers globally selected each year.

Vice President and Social Chair for Phi Kappa Psi, a predominant scholastic fraternity celebrating over 20 years at Rochester Institute of Technology (RIT)

Distinguished by the RIT Dean's List for outstanding scholastic achievement

Numerous scholarships to Rochester Institute of Technology (RIT) including Recipient of RIT Presidential Scholarship

ASHRAE Blue Ribbon Award of Excellence

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



2013



Jack E. Ramsey, PE
Utilities Engineering Manager, SW Region

PROFESSIONAL EXPERIENCE
21 Years

HIGHLIGHTS OF EXPERIENCE

Mr. Ramsey is responsible for the daily management of the Utilities Department as well as all of the quality assurance / quality control within the Group. In addition, Mr. Ramsey is a working manager in that he is directly responsible for several projects and clients. He works on the planning, coordination, design, and construction of utility projects to meet the expectations and needs of the client. Mr. Ramsey has experience in environmental engineering, civil engineering, wastewater collection, storm water conveyance, and water distribution systems, as well as wastewater and water treatment plants and storm water pollution control. Duties have included line layout, hydraulic analysis, pump and booster station designs, water storage tank design, pressure reducing station design, and plant layout and design. Mr. Ramsey has vast experience in dealing with funding and regulatory agencies. He has been instrumental in helping clients obtain loans and grants for their projects.

EDUCATION

B.S., Civil Engineering Technology, 1994, West Virginia Institute of Technology, Montgomery, West Virginia

REGISTRATIONS, LICENSES & TRAINING

Registered Professional Engineer	West Virginia, Ohio and Virginia
America's Registry of Outstanding Professionals	2002 / 2003
Cambridge Who's Who	2007 / 2008
Cambridge Who's Who - VIP	2009 / 2010

HIS PROJECT EXPERIENCE INCLUDES:

Alcon Laboratories, Cabell County, WV

Design of a 30,000 gpd extended aeration wastewater treatment plant which included UV disinfection and post aeration.

Syracuse-Racine Regional Sewer District, Meigs County, OH

Planning, design and construction administration of the Wastewater Treatment Plant Upgrade and Pump Station Rehabilitation project that consisted of rehabilitating the existing oxidation ditches and secondary clarifiers, replacing the existing sewage grinder, splitter box, return and waste sludge pumps and controls and sludge meter. Installing a new belt filter press building and SCADA system as well as rehabilitating three (3) existing collection system pump stations and replacing two (2) others.

Town of Camden on Gauley

Design and construction administration of the wastewater collection system which served the entire Town as well as some outlying areas.

Nitro Regional Wastewater Utility, Kanawha County, WV

Design and construction administration of the wastewater treatment plant upgrade. The project consisted of a 0.65 MGD packaged treatment unit, a 1.2 meter belt filter press with building, a 150,000 gallon aerobic digester, and headworks upgrade.

Larry L. McCoy, Jr., PE

Civil Engineering Services Manager, Senior Engineer
Southwest Region

PROFESSIONAL EXPERIENCE

18 Years

EDUCATION

BS Civil Engineering, West Virginia Institute of Technology

HIGHLIGHTS OF EXPERIENCE

Mr. McCoy is currently the Department Manager for our Civil/Transportation Design Section and a Project Manager for the St. Albans office of TRIAD. In this capacity, he is responsible for the oversight of our civil engineering staff as well as the technical and management aspects of civil design and transportation projects within the office. Mr. McCoy has designed and managed projects in numerous disciplines including civil, structural and transportation engineering, site development, planning and surveying. These projects have included streets/highways, bridges, retail/commercial site preparation, airports, parking lots, buildings, retaining walls/foundations, sanitary structures, as well as recreational facilities. Duties included field surveying, drawings and specification preparation, design, design drafting, construction inspection, quality control testing, shop drawing review, project management, contract administration and report preparation.

REGISTRATIONS, LICENSES & TRAINING

Professional Engineer
West Virginia 14731
No. 25932 Kentucky
No. 73186 Ohio

Certified Flood Plain Manager

HIS PROJECT EXPERIENCE INCLUDES:

Federal Express Ground Distribution Center – Cross Lanes, WV

As Project Manager and Lead Designer, Mr. McCoy prepared construction documents for the development and construction of a 10 acre site to accommodate a distribution center and associated parking and access drives. This project included grading, drainage, detention, roadway expansion, parking lot design, utility design including water and sanitary sewer, water quality design as well as many other aspects.

Commerce Park – Huntington, WV

As Project Manager and Lead Engineer, Mr. McCoy, is responsible for the project design and construction administrative services for a large use development located in Huntington, WV. This development consists of affordable housing apartments, flex space warehousing and office space. This project includes grading, drainage, Stormwater management, permitting, parking lot design, as well as many other aspects.

Bayer CropScience – Institute, WV

As Project manager and Lead Civil Designer, Mr. McCoy prepared construction documents for the expansion for Bayer CropScience's Hazardous Waste Landfill in Institute, WV. The project included grading, drainage and the design of landfill liner and closure features including both earthen and synthetic liners and drainage features.

Joe H. Young, RLA

Senior Landscape Architect, Southwest Region

PROFESSIONAL EXPERIENCE

24 Years

HIGHLIGHTS OF EXPERIENCE

Mr. Young currently serves as Senior Landscape Architect for the Southwestern Region of Triad Engineering, Inc. In this capacity, he provides clients with a variety of landscape architectural services including site inventory and analysis, program production, conceptual design, design development, high quality graphic presentations, project management, construction document preparation and construction administration. In this capacity, Mr. Young brings years of experience on a diverse range of projects covering all aspects of landscape architectural design and planning in both the public and private sector. Mr. Young's experience includes park and streetscape design, resort and campus master planning, subdivision layout, landscape and hardscape design, landscape design, grading and earthwork calculations, construction detailing, specifications, and estimating. Mr. Young also performs Project Management on related projects, and has been involved in planning projects for national and international military bases, pocket parks, 5,000 acre reserves, large downtown streetscapes, subdivision layout and design, and campus master plans for many college and universities.

EDUCATION

BSLA, Landscape Architecture

West Virginia University, WV, 1989

REGISTRATIONS, LICENSES & TRAINING

Registered Professional Landscape Architect

West Virginia, Ohio, Kentucky

HIS PROJECT EXPERIENCE INCLUDES:

King's Daughters Medical Center, Ashland, KY

This project consisted of site civil engineering services as well as landscape architectural services for multiple Medical Office Buildings in Southern Ohio and Eastern Kentucky. Mr. Young worked with a project team headed by the Architect and the owner, to develop a complete comprehensive set of construction drawings. This projects involved optimizing the available properties to accommodate the medical office buildings and parking areas that improved circulation on the site to allow for a patient drop-off area at the front of the buildings. Services provided by included preparation of construction documents and details including site grading and drainage features, landscaping to compliment the architecture of the buildings and local and state permits.

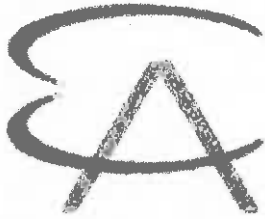
St. Mary's Medical Center, Boiler Plant, Huntington, WV

Mr. Young over saw the Site Civil and Landscape Architecture work the development of the new Boiler Plant on the Main Campus. The project involved the planning, and design and preparation of construction documents for the, parking area, outdoor storage area, utilities, storm water design and landscape screening to meet the requirements of the City of Huntington as well as the adjacent neighbors.

St. Mary's Medical Center, Huntington, WV

Teaming with a local architect to provide a comprehensive plan for the future development of St Mary's Medical Center campus, Mr. Young oversaw the planning for this project which included the realignment of roads and parking areas to improve vehicular and pedestrian circulation. The plan also included the development of a green space system that allows patients, visitors and employees to walk from building to building with minimal vehicular conflicts. One of the key elements of the project was reducing the amount of paved area on campus. The reduction of paved area will reduce the amount of storm water entering the city's combined system. A portion for the parking lot will incorporate a pervious pavement system that will further reduce the storm water impact on the local system.

V – Testimonial Letters and Recognition



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 black ink, appearing to read "Bill Elswick", written in a cursive style.

Bill Elswick, MBA, CEO

April 20, 2015



Michael Pickens

172 Oak Street

Dunbar, WV 25064

(304) 400-9993

RE: ZDS Design/Consulting Services

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

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

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

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

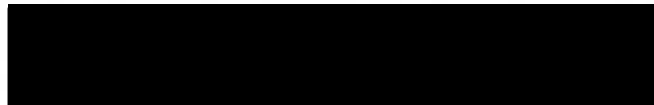
I trust ZDS's staff in their technical expertise and their approach in solving challenging engineering issues and believe that anyone who uses them will be as satisfied as I have been. They are worth it!

Sincerely,

A handwritten signature in black ink that reads "Michael E. Pickens". The signature is written in a cursive, slightly slanted style.

Michael E. Pickens

TIM HOLBROOK



July 8, 2013

Re: ZDS Design/Consulting Services.

To Whom It May Concern:

I have had the recent privilege to work with ZDS Design/Consulting Services on several construction projects for the Greenbrier County Board of Education. In my role as the Clerk of the Works (owner's representative) for these projects. I was fortunate to be able to work with a company possessing their level of knowledge and expertise as an important part of our design team.

ZDS was on board from the conceptual design/development phase through the completion of construction and close out of the project. They constantly pushed to see that work progressed as it should and was done right.

Their personnel was extremely qualified and easy to work with. They were immediately responsive to any questions, problems, or issues that came up, and often called offering ideas and suggestions that could benefit the owner.

They were also instrumental in helping the board secure some rebates and credits that helped with the project costs.

I would be very happy to do another project with ZDS as they were a first class company, willing to do what it took give the owner a quality job. I highly recommend them for any mechanical and electrical construction project you may have.

Very truly yours,

A handwritten signature in cursive script that reads "Tim Holbrook".

Tim Holbrook

REFERENCES

Mrs. Sandy Perry
Village Mr. Tom Carter
Water Superintendent
Village of Cadiz
PO Box 153
Cadiz, Ohio 43907
740-491-0143

Mr. David Spencer
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740-949-2296

Mrs. Susan Pelkowski
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Mr. Ernest Spencer
Board President
Syracuse Racine Regional SD
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740-949-2416

Mr. Charles Blair, Mayor
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201 Walnut Street
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304-773-5200

VI – Attachments