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## Header @ 1

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Procurement Folder: 1442555

SO Doc Code: CE01

Procurement Type: Central Contract - Fixed Amt

SO Dept: 0211

Vendor ID: 000000208495 

SO Doc ID: GSD2400000009

Legal Name: ZDS LIMITED LIABILITY COMPANY

Published Date: 6/13/24

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Total Bid: \$0.00

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Solicitation Description: Building 1 Hydronic Boilers Upgrades Project

Responded By User ID: Zachwieja 

Total of Header Attachments: 1

First Name: Pat

Total of All Attachments: 1

Last Name: Price

Email: pat.price@zdsdesign.com

Phone: 304-755-0075



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

**State of West Virginia  
 Solicitation Response**

**Proc Folder:** 1442555  
**Solicitation Description:** Building 1 Hydronic Boilers Upgrades Project  
**Proc Type:** Central Contract - Fixed Amt

Solicitation Closes	Solicitation Response	Version
2024-07-02 13:30	SR 0211 ESR07012400000000013	1

**VENDOR**  
 000000208495  
 ZDS LIMITED LIABILITY COMPANY

**Solicitation Number:** CEOI 0211 GSD2400000009  
**Total Bid:** 0  
**Response Date:** 2024-07-01  
**Response Time:** 10:16:01  
**Comments:**

**FOR INFORMATION CONTACT THE BUYER**  
 Melissa Pettrey  
 (304) 558-0094  
 melissa.k.pettrey@wv.gov

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

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

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
1	Architectural engineering				0.00

Comm Code	Manufacturer	Specification	Model #
81101508			

**Commodity Line Comments:**

**Extended Description:**

Building 1 Hydronic Boilers Upgrades Project



**Expression of Interest to  
Provide Professional  
Architectural, Engineering,  
and Consultant Services**

**Building 1 Hydronic  
Boilers Upgrade Project**

**July 2, 2024  
CEOI 0211 GSD240000009**

PERFIDO

WEISKOPF

WAGSTAFF +

GOETTEL



**ARCHITECTURAL / STRUCTURAL / MECHANICAL  
ELECTRICAL / IAQ / ENERGY / COMMISSIONING**

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State of WV Centralized Expression of Interest

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# SECTION I.

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**Executive Summary Letter  
Project Goals &  
Objectives**





**Design/Consulting Services**

135 CORPORATE CENTER DR STE 532 / SCOTT DEPOT, WV 25560  
(304) 755-0075 / www.ZDSDesign.com

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

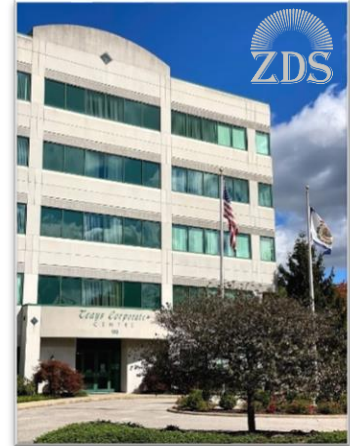
July 2, 2024



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

Please accept our Expression of Interest to provide Professional Architectural/Engineering/Consultant Services for the **Building 1 Hydronic Boilers Upgrades Project**.

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



**Todd A. Zachwieja, PE, CEM, LEED AP – Principal, CEO**  
**ZDS Design/Consulting Services**

135 Corporate Center Drive, Suite 532, Scott Depot, WV 25560  
Office: 304-755-0075; Mobile: 304-545-4550  
Todd.Zachwieja@ZDSDesign.com; www.ZDSDesign.com



**Ted A. Zachwieja III, PE, CEM, – Principal, Chief Technical Officer**  
**ZDS Design/Consulting Services**

135 Corporate Center Drive, Suite 532, Scott Depot, WV 25560  
Office: 304-755-0075; Mobile: 304-552-2752  
Ted.ZachwiejaIII@ZDSDesign.com; www.ZDSDesign.com

The **ZDS** Team will provide comprehensive professional services for the proposed **Building 1 Hydronic Boilers Upgrades Project**. Our previous work in Building 1 for the heating systems provides invaluable insight into the challenges and options to convert the steam systems to heating hot water systems. Our conversion of the steam systems in Building 3 to heating hot water demonstrates we can meet GSD's goals and objectives. We have had numerous successful projects, including many on the Capitol grounds for the State of West Virginia, WVDHHR facilities, WVArNG, WVU, Ohio University and Marshall University, as well as cities and towns throughout the state and regionally.

ZDS Design brings extensive experience with boiler and chiller plants that serve individual buildings and interconnecting multiple buildings in similar campus settings. To select a location for new boiler plants, ZDS will first request any available information on the existing HVAC systems from the Owner and perform a thorough field investigation of the facility. This approach will help evaluate potential locations for the new boiler plants, considering the distance, accessibility, proximity to existing outside air intakes, and locations for boiler flues. ZDS' previous involvement in designing the central steam system and

renovating the condensate pumping stations provides us with deep insights into the building's infrastructure, allowing for the development of a phased approach for taking portions of the steam system offline as the hot water heating systems are being brought online. The WV Capitol Complex was originally constructed as a stand-alone project for the East and West wings. The Central portion of the facility was constructed in a way to connect and combine the wings. Originally, there were three (3) different boiler rooms in each basement. ZDS was involved with the Central Steam plant project, which eliminated these boiler rooms to make room for the Central Steam project. These mechanical rooms may be excellent candidates for new hydronic boiler rooms and could play a role in phasing the work. This project will also facilitate a cross-over loop between the decentralized boiler plants, allowing for diversity sharing, improved redundancy, and enhanced energy savings. The steam and condensate piping are over 90 years old in most of the building and are buried within the concrete floors in many locations vertically and horizontally.

Our proposed Team will include the following:

**Architecture** - Perfido Weiskopf Wagstaff + Goettel (PWWG) will be responsible for meeting the State Historic Preservation Office and Capitol Building Commission requirements for modifications to Building 1 that may be necessary for converting the steam system to heating hot water. They will also be available for related architectural services that may be needed to accomplish the goals of the project upgrades. PWWG has been involved in projects at the WV Capitol Complex including comprehensive renovations of Building 3 and Building 4 and are familiar with the challenges of performing work in the Capitol complex of buildings and the importance of minimizing disruption of the occupants' daily routines.

**Construction Cost Estimating** - Morgan Kronk PCC, an independent cost estimator, will be included on the Team and will assist in the initial cost estimate provided during the evaluation phase and at strategic points during the design as deemed appropriate.

**Structural Engineering** - We have included Atlantic Engineering Services (AES) as part of the Team. AES employs structural engineers with an aggregate of 650 years of experience, over 30,000 projects upwards of \$17 billion in construction costs in 17 active industries, and many years of Revit experience.

**Commissioning Assistance** - We have teamed with Facility Dynamics Engineering (FDE) on both design and Commissioning projects for nearly 30 years and we believe that our joint experience and knowledge will be an excellent fit for this project. FDE has provided services on over four thousand commissioning projects, including projects of \$1 billion and more in construction dollars. They employ over 60 Engineers/Commissioning specialists and will be a valuable resource.

Our proposed Team has provided professional mechanical, electrical, plumbing, structural engineering, architectural, and commissioning services for facilities across the country and our decades of experience give the strength and depth important for the Project needs.

The ZDS staff brings unique strengths to the Project due to our familiarity with the buildings and systems within the Capitol complex. We have 3D scans of the existing conditions in the basement of Building 1 and are intimately familiar with the steam distribution system and condensate return system, which makes us uniquely qualified to develop a phasing plan to transition from steam to heating hot water. We have extensive knowledge and understanding of the existing underground steam systems and are familiar with, and will be able to effectively decommission, the central steam plant as the final phase of this renovation project.

ZDS has designed and coordinated upgrades for projects of all sizes, budgets, and schedules. We have been successful on renovation projects through dialogue and proper planning with the Owners and Contractors for phasing the work successfully and minimizing the impact on the occupants' daily activities. We will communicate closely with the appropriate personnel in the General Services Division to ensure that our approach to the Project will address their needs and concerns. Realizing the similarity of our mission and the desire to serve West Virginia clients, we will be honored to work with you.

## Project Goals, Objectives & Approach

**GOAL/OBJECTIVE 1:** *The Department of Administration, General Services Division is requesting a response from interested parties to provide schematic design, construction documents, and construction administration efforts for upgrading the existing steam heating system in Building 1, the WV State Capitol, to a hot water hydronic heating system. Vendor shall investigate the current heating system and building conditions and then prepare a written report with recommendations to the Agency regarding upgrades, along with an estimated construction cost. Based upon recommendations from the investigative report, the Agency intends to replace the existing steam system with a modernized hot water hydronic boiler heating system. The assessment shall incorporate all related systems, such as electrical equipment, pumps, fan coils, boilers, coil replacements, and building automation controls. The intent is to design a piping distribution system with pumping redundancy while incorporating best design practices of the piping system and applications for future service access to be utilized year-round for dehumidification control. Within their proposal, Vendors should provide documentation regarding their staff and/or team's qualifications and experience on projects where HVAC systems and controls of this nature have been converted from steam to hot water. Proposals should clearly indicate what role each staff/team member would serve on this project.*

**RESPONSE:** ZDS personnel have replaced hundreds of boilers and HVAC systems, including converting steam to hot water boilers. We commonly provide a comprehensive evaluation with options and cost estimates to prioritize the extent of work to be done and for the phasing of the work. For example, we provide master MEP plans for upgrades for seven DHHR healthcare facilities used today to guide proposed renovations. We will investigate the existing electrical equipment serving HVAC systems, pumps, steam-to-hot water converters, radiators, fan coil units, all steam coils, including the air handling units, and building automation controls for an integrated solution for the conversion to heating hot water. HVAC renovations are our specialty, and our knowledge of the WV Capitol makes us uniquely qualified.

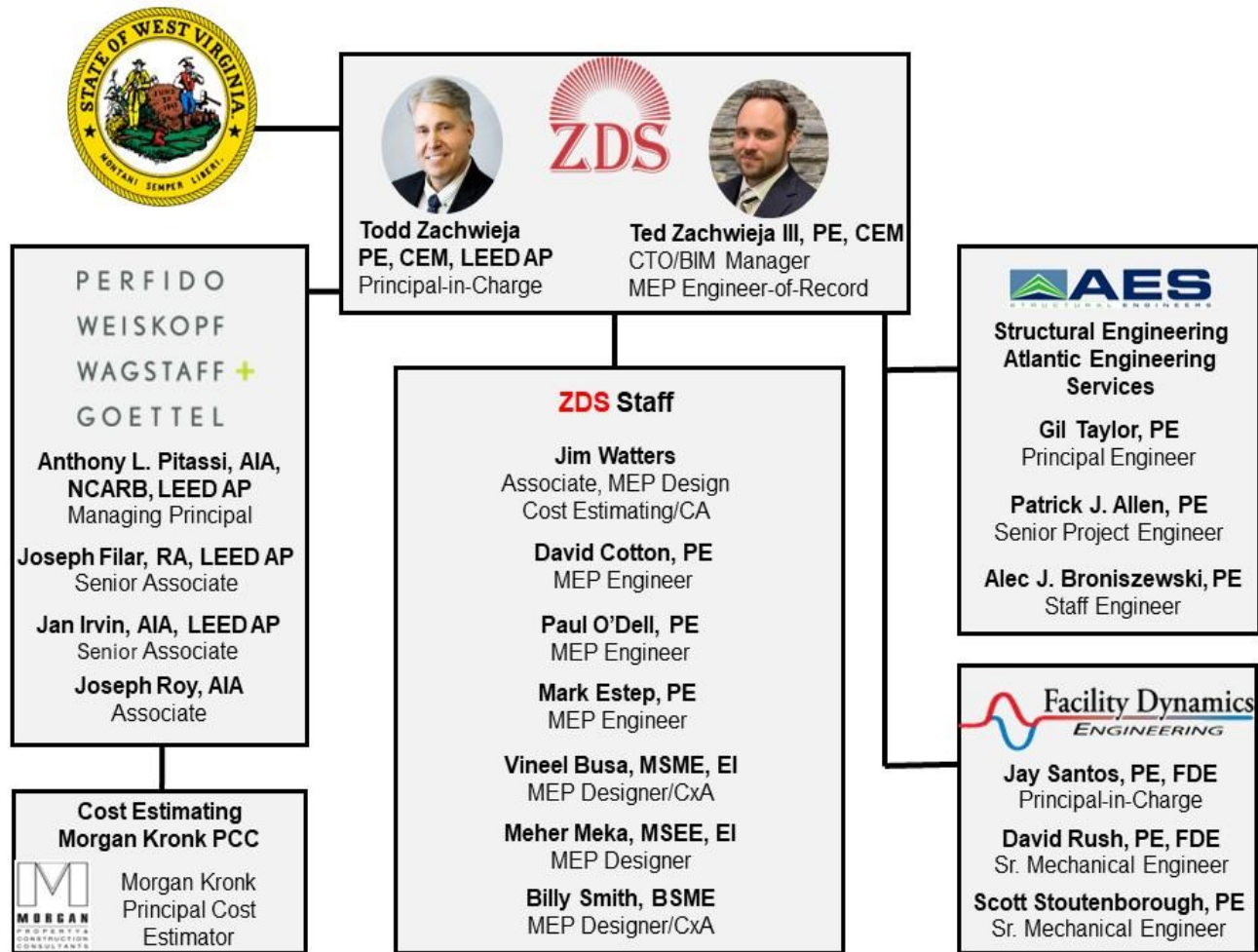
ZDS was selected to design and implement the State of West Virginia's pilot program to convert existing coal-fired steam boilers to low NOx high-efficiency heating hot water boilers using federal funding from a WVDEP grant. Contact Mike Pickens, who was with the WV Department of Education then, about how ZDS's strength in boiler design made this program a success. We also have extensive experience with steam boilers for campus settings and industrial applications, including the WV Capitol Complex. Providing condensing heating hot water boilers offers excellent energy efficiency improvements over steam boilers, and our specialties in proven sustainable energy-efficient design are demonstrated by our Energy Star Certified facilities and LEED Certified facilities. This broad experience and our knowledge of the WV Capitol Campus make this Team an excellent fit for this project. Our boiler and HVAC renovation projects completed over the years include hundreds of schools, commercial buildings, healthcare facilities, college/university campuses, and industrial facilities. Some examples are the DOW Technology Campus in South Charleston, the University of Charleston's Innovation Center central plant that converted steam to heating hot water, and the Ben Franklin Career Center in Dunbar. Our hydronic

heating upgrades at Building 3 on the Capitol campus are nearing completion, have progressed well, and demonstrate our commitment to a well-planned project and our ability to provide excellent professional services to the State of West Virginia.

The existing air handling units in Bldg. #1 are of different vintages and conditions and contain steam coils. Each system would be evaluated for modification and replacement by addressing the steam coils and, where necessary, the entire air handling system while integrating the HVAC equipment into the Campus's Trane Ensemble DDC control system. The modifications of the air-handling equipment will also be incorporated into the phasing plan. The type of air handling equipment used today differs from the vintage equipment in the facility, and today's technology would be incorporated (i.e., direct drive fan wall systems, redundant fan arrays, ECM motors, hydronic coils optimized for central plant improvements and pumping efficiency).

Our experience at the WV Capitol Complex is thirty years and beyond when considering our staff working through others before ZDS. ZDS will provide the MEP Engineering and overall project management for the engineering elements with **Todd Zachwieja as the Principal-in-Charge and Ted Zachwieja III as the Engineer-of-Record** and project leader. Our Team includes the following:

- **Perfido Weiskopf Wagstaff + Goettel (PWWG)** provides the required architectural design services, including solutions that maintain the historical integrity of the building. PWWG's team includes the same key people involved in other work at the WV Capitol Complex. The core of the PWWG team will consist of **Anthony Pitassi as the Principal-in-Charge and Senior Associate Joe Filar as the Project Manager**. Tony and Joe both have extensive experience with the repair and renovation of historical buildings as well as interior renovations for adapting uses and modernization. Tony's and Joe's complementary skills bring the necessary attention to the diverse range of challenges the project presents, including day-to-day project management, collaboration with the client, and coordination of consultants. For this project, Tony and Joe will be supported by Joe Roy, Project Architect, who holds a Certificate in Historic Preservation from the University of Miami (FL), and Senior Associate Jan Irvin, specifications writer and quality control specialist.
- **Morgan Property and Construction Consultants (MPCC)** provides professional, independent construction cost estimating at each appropriate design phase to provide realistic, practical, and valuable tools to communicate cost savings and feasible alternative solutions. After each design phase, a menu of alternates for "options," "adds," and "deducts" provide flexibility and a range of options to help shape the scope of the project and mitigate.
- **Atlantic Engineering Services (AES)** provides the expertise required for primary building structural systems with a keen sensitivity and understanding of historic buildings and has worked on many projects with PWWG, including Buildings #3 and #4.
- **Facility Dynamics Engineering (FDE)** provides peer review and commissioning support, which gives us access to over 4,000 commissioning projects. This includes a database of issues and solutions with a team of engineers to overcome challenges. This is the same team used for Building #4 renovations.



**GOAL/OBJECTIVE 2:** Vendor shall work with the Agency to advise on space requirements for designated areas such as boiler mechanical rooms, water treatment components, and freeze protection allocations. Building Information Modeling (BIM) is requested for detection and resolution of spatial conflicts among all disciplines for this project. Within their proposal, Vendors should demonstrate experience with 3-D BIM modeling using examples of similar projects where BIM modeling has been utilized to assist and resolve conflicts in similar projects.

**RESPONSE:** The West Virginia Capitol Building project aims to upgrade the existing steam heating system to a modern hot water hydronic heating system. This initiative involves multiple goals, including accurate assessment of existing conditions, effective conflict resolution through Building Information Modeling (BIM), and minimal disruption during the project's phased execution. We have preliminary thoughts on how the allocation of space(s) and the phasing of the project may be successfully accomplished. The historical importance of Building 1 will require careful consideration of pathways for piping, power, and demolition of existing steam systems.

**3D Scanning:** ZDS Design's 3D laser scanning services provide detailed and accurate data on existing conditions. This technology captures comprehensive information, revealing discrepancies between current conditions and original drawings. For the Capitol Building, this means a precise understanding of the existing steam system, which is essential for designing an effective hot water hydronic system.

### **Key Benefits:**

- Accuracy: High-resolution scans offer detailed visuals of building exteriors and interiors, reducing the risk of overlooking critical elements. ZDS has previously performed 3D scans of the Building 1 basement and scans within the Dome, providing a head start in understanding the existing conditions.
- Efficiency: Provides a shared, accurate visual reference that facilitates communication among team members, even those who are remote. ZDS can 3D scan the areas to coordinate special requirements with built conditions, determine design details, and commission the system when operational.

**BIM Coordination:** Effective BIM coordination is critical for detecting and resolving spatial conflicts, a key objective for upgrading the Capitol Building's heating system. The Design Team uses BIM to enhance collaboration among different disciplines, ensuring all elements fit together seamlessly.

### **Key Benefits:**

- Conflict Resolution: BIM helps identify and resolve conflicts early, avoiding costly changes during construction.
- Collaboration: Enables real-time, remote collaboration, ensuring all stakeholders are aligned and informed.

**BIM Modeling:** Our Team's expertise in BIM modeling ensures that the project adheres to modern standards while respecting the building's historic integrity. This service supports detailed planning and visualization, aiding in the seamless integration of new systems with the existing infrastructure.

### **Key Benefits:**

- Visualization: Provides detailed 3D models that aid in planning and communicating design intent.
- Phasing: Supports effective construction phasing, minimizing disruptions to the occupied building.

**GOAL/OBJECTIVE 3:** *This project will require coordination with the State Historic Preservation Office, the Capitol Building Commission, and the Department of Administration's GSD A/E Office. The Vendor is expected to have a member of the design team with documented historical preservation experience to coordinate with SHPO and CBC. The intent of this project is to retain the original look of the 1930s while upgrading to a modern, technologically advanced heating system that can modulate with the outdoor air temperatures and remain serviceable. Within their proposal, Vendors should demonstrate that they have a suitably experienced historic preservation consultant on their team. Projects documenting relevant experience should be ones in which HVAC systems have occurred.*

**RESPONSE:** PWWG's areas of specialization in rehabilitation, preservation and adaptive reuse of historic and existing buildings aligns with the scope of this project. PWWG will serve as the lead for meeting SHPO and CBC requirements while coordinating through ZDS and GSD. Approximately 50% of PWWG's portfolio is work on existing buildings, often historic structures on the National Register which includes working with SHPOs and the National Park Service (NPS) on historic tax credit projects, historic

landmarks and constructing new buildings and additions in historic districts. We understand “best practices” and how to plan and design for integration of new systems into existing buildings and historic architecture. In nearly 50 years of continuous operation, PWWG’s foundational principles have been focused on preservation and restoration of existing buildings and historic structures in urban environments. The work begins with understanding the building’s story and evolves to modernize in historically compatible and respectful ways for generations ahead.

PWWG has worked with WV GSD on historic projects at the Capitol Complex, including Building No. 4 (in progress) and Building No. 3, which involved historically compatible comprehensive interior and exterior renovations. PWWG has had three 5-year Term Services contracts with The Pennsylvania Historical Museum Commission (PHMC) and has executed several significant projects, such as The Drake Well Museum and Old Economy Village. In addition, PWWG has worked with several SHPOs across states such as Pennsylvania, Ohio, Kentucky, Tennessee, and North Carolina, in conjunction with the National Park Service, on respective projects and locations. They are adept to conformance with the Secretary of the Interior Standards for Renovations, working with respective agencies to develop amicable solutions that preserve while modernizing. PWWG has had the opportune pleasure to be responsible for the successful restoration of national and global historically significant structures, including the Cincinnati Music Hall (c 1878), The Allegheny County Courthouse (c 1890), and The Carnegie Library (c 1890), among many other building types.

The historic fabric and building elements will be considered as part of the renovations and, as an example, the historic appearance of decorative enclosures concealing original steam heating radiators will be maintained while concealing the new hot water heating elements that will be part of the modernization and upgrade. The steam and condensate piping removal and installation of new heating hot water piping will need to be carefully routed in the building to protect the historical integrity.

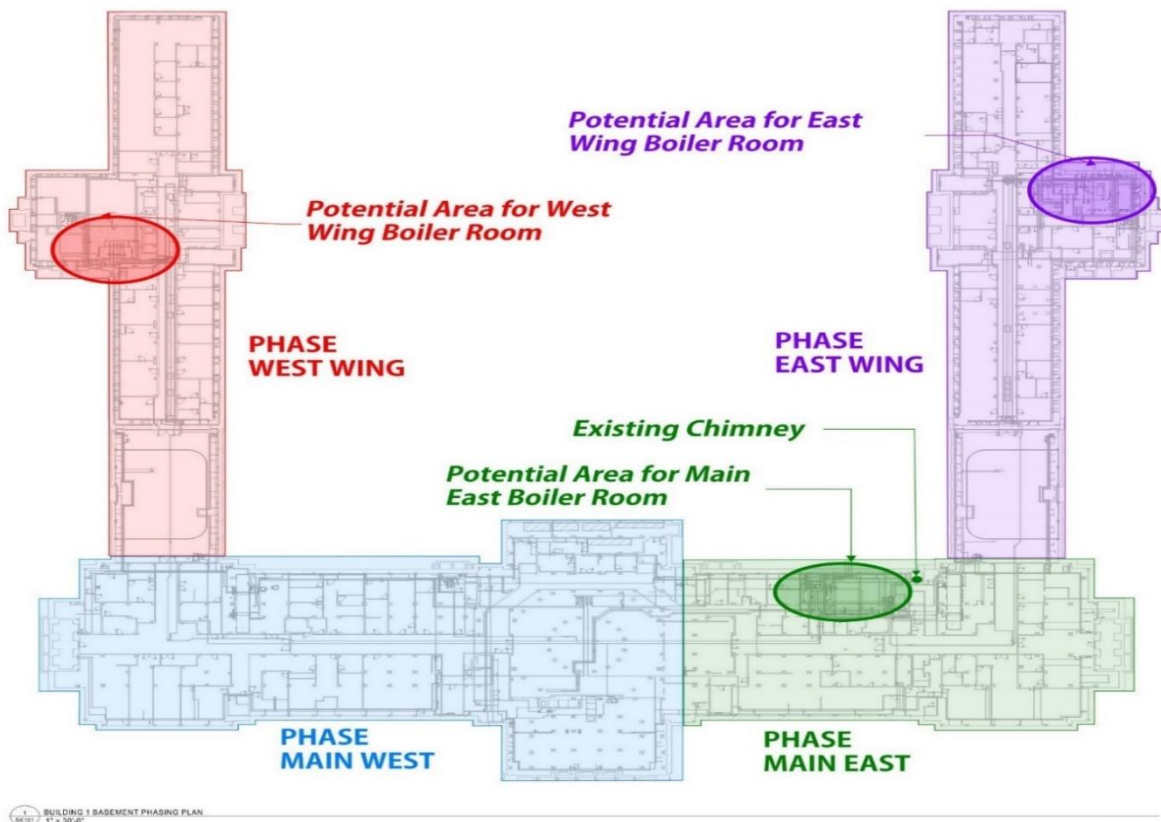
PWWG has developed principals for working in existing and historic buildings, including design for a ‘loose fit’ so that when unforeseen conditions are exposed, new work can be adjusted to existing work without substantial changes and normally without additional cost. Too, PWWG often recommends selective demolition be performed during design to understand the building's origins and to reveal actual conditions that often vary significantly from original design or recorded conditions. Another critical step of information gathering includes interviewing Maintenance and Facilities personnel to understand their direct experience with buildings and to probe their memory of past problems.

***GOAL/OBJECTIVE 4:*** *The project of converting the heating system for the Main Capitol (including the Main Building, and its East and West Wings), will be required to be conducted while the facility remains occupied, operational, and sufficiently heated. The project will also need to be phased to accommodate the current steam heating “season” (October to April). This will require creative construction phasing, as it is anticipated that the project of converting the entire facility will take place over multiple years. Within their proposal, Vendors should demonstrate their experience in administering projects for occupied renovation where phasing of construction needed to occur. Vendors should also propose how they would approach phasing based on the aforementioned circumstances.*

**RESPONSE:** ZDS will carefully coordinate the new HVAC equipment and boilers’ location through our extensive field investigation, knowledge of existing systems, and discussions with the Owner’s representatives. ZDS has provided design services for work involving campus utility planning that required close coordination and, in some cases, phasing of the Work to avoid conflict with the daily operations of the facilities. We are familiar with the Capitol Complex grounds and realize the challenges

of maintaining ingress and egress flow for the public and occupants within the Complex buildings. ZDS most recently worked closely with the Capitol Complex personnel on the proposed upgrades to the underground steam system vaults and piping, including the hydronic Boiler Upgrades for Building #3. Our extensive knowledge of the steam heating system throughout Bldg. #1, including the condensate return system to the central plant, will be invaluable for developing a phasing strategy to take the steam heating system offline as the hot water system is operational. We also removed the previous boiler systems in Building #1 when the central steam plant was designed and constructed. During the process, we identified and defined the specific criteria for the construction process to help minimize disruption to the Capitol.

The phasing concept presents preliminary ideas on locations for new heating hot water plants. The intent is to divide the building vertically because the heating systems are served by risers in multiple phases. While the overall strategy shows four main phases, we would subdivide the building even further when we are in the detailed design. The West and East Wings could be divided even further by working on the northernmost portions of the new boiler rooms and then towards the main building. The phasing strategy recognizes that steam enters Building #1 in MB69 and then distributes outward to the West and East Wings. The condensate return system is brought from the outer wings back to MB69 through many pumping stations. ZDS conducted extensive investigations in the basement of Bldg. 1, performed 3D scans, and identified the extensive heating piping in the congested basement area where significant renovation will occur for the hot water conversion. This knowledge and resource will be instrumental in developing the phasing plan. Construction activities are typically interrupted during the legislative session, and the steam heating system is offline only from May into October, which must be considered in the phasing of the work. Providing multiple heating hot water boiler plants would assist in phasing and reducing the overall heating hot water pipe sizes, which would assist in finding pathways to route through the building.



Our team provides all design through construction administration phases necessary for a successful project. Many renovation projects in existing buildings include phased work or multiple bid packages to maintain continuous operation while being constructed. ZDS has managed many projects that must remain operational during construction, including healthcare facilities where people use the facility continuously. The William R. Sharpe, Jr. Hospital is an example that included an assessment, multiple bid packages, and phased construction that allowed the hospital to operate and meet stringent healthcare requirements. The construction period was longer than the traditional period to permit the hospital to stay in operation. This includes a new central heating and cooling plant, emergency power, electrical, and comprehensive HVAC upgrades. Contact our WVDHHR references about how we successfully managed that process. Our goal following the Initial Assessment and design process is to deliver what you need, which accounts for a project that meets your needs and one that you can afford.

The last phase of the project would involve decommissioning the existing central steam plant. Since ZDS was involved in its design, we have the knowledge and experience to properly develop the decommissioning of those systems into the construction documents. The existing steam and condensate systems within Bldg. #1 is anticipated to be demolished when the new heating hot water work occurs in the same areas by working back toward the central entry of the steam system. Piping within inaccessible walls and floors may be abandoned if not in conflict with new work.

**GOAL/OBJECTIVE 5:** *The Vendor will be required to produce construction documents and administer construction in compliance with State of West Virginia purchasing regulations. The Agency's procurements are generally governed by the WV State Purchasing Division, incorporating American Institute of Architects (AIA) general conditions, supplementally amended by the State to bring them into compliance with the WV State Code. Within their proposal, Vendors should provide documentation of past projects in which they have adhered to standards such as these and explain their approach to administering the project's construction with the Agency.*

**RESPONSE:** We have successfully worked with the WV State Purchasing Division to prepare documents to procure competitive bids from potential contractors and provided Construction Administration services through the completion of the projects. Governmental agencies we have experience with include, but are not limited to, the following: WV General Services Division, Kanawha County Commission, WV Dept of Education, WVDHHR, WVDNR, WVANG, WVARNG, WV Higher Education Policy Commission, WV Public Service Commission, WV DOH, Dept. of Environmental Protection, and the US Department of Justice, as well as many city government agencies and most WV County Schools' systems.

Our Team has an excellent track record of completing projects on time and within budget guidelines. We are ready and willing to start immediately on your project and are confident that our specialties will provide you with the best expertise to implement the proposed upgrades. We look forward to discussing our qualifications and if there are any questions, please do not hesitate to call.

Sincerely,



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

# SECTION II.

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## Firm Overviews



# COMPANY OVERVIEW



## ABOUT ZDS DESIGN/CONSULTING SERVICES

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

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



## COMPANY LEGAL NAME

ZDS Limited Liability; Company dba ZDS Design/Consulting Services

## LOCATION OF INCORPORATION West Virginia

## FOUNDERS

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

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

Daniel H. Kim, Ph.D.

## FIRM LOCATION

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

## EMPLOYEES

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



## CLIENTS & EXPERIENCE

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

- ◆ Tucker County Courthouse
- ◆ University of Charleston Innovation Center, Lab
- ◆ Veterans Administration—many locations
- ◆ Washington & Lee University
- ◆ Webster County Development Authority
- ◆ White Sulphur Springs Welcome Center
- ◆ William R. Sharpe, Jr. Hospital, WVDHHR
- ◆ World Trade Center, MD
- ◆ WV Air National Guard
- ◆ WV Army National Guard
- ◆ WV Chief Medical Examiners Office Renovations
- ◆ WV Dept. of Education - State wide PreK-12 Schools
- ◆ WV Division of Energy
- ◆ WV Dept. of Transportation
- ◆ WV Dept. of Health & Human Resources
- ◆ WV Division of Culture and History Renovations
- ◆ WV Division of Protective Services
- ◆ WV General Services Division
- ◆ WV Higher Education Policy Commission
- ◆ WV Parkways Authority HVAC Renovations
- ◆ WVU Health
- ◆ WVU Morgantown Campus
- ◆ WVU Tech (Montgomery Campus) Engineer Bldg.
- ◆ WVDOT Lab

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

The **ZDS** design team provides a total system evaluation for cost-effective selection, installation, and ease of maintenance for both new systems and retrofit of in-place systems. Design begins with our client. Our staff meets with our client to review their concerns, budgets and schedules. The **ZDS** design team reviews the entire picture, and ends with "A Total Design."

The **ZDS** staff has the expertise with codes and standards. We have extensive experience in conducting engineering code surveys of existing facilities. Our staff has excellent working relationships with the West Virginia Fire Marshal's Office, West Virginia Department of Education and the West Virginia School Building Authority. In addition to comprehensive Engineering services from an experienced design team, another major consideration in the selection of your engineer and design staff should be their track record.

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



## INDOOR AIR QUALITY SERVICES

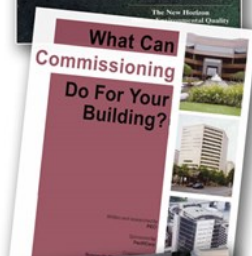
**ZDS** provides consulting engineering services for the indoor air quality (IAQ) environment. These services include: strategic planning for renovation and new construction projects; technical research and writing; specialized applications software development; corporate and professional training programs;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

- Technical Review Panel for the publication of the *INvironment™ Handbook of Building Management and Indoor Air Quality*, by Chelsea Group and published for Powers Educational Services
- Technical Review Panel for the quarterly publication of the *INvironment™ 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.



# COMMISSIONING



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



130th Airlift Wing at Yeager Airport, Phase I  
and Phase II: Aircraft Maintenance Fuel  
Systems Hangars and Shops  
Awarded a **LEED Silver Certification** for  
each of the two phases

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



Harvard University  
Arnold Arboretum Weld Hill  
Research and Administration Building  
**LEED Gold Certified**

- Kanawha County Commission
- WV DHHR healthcare facilities
- Many PK-12 Schools
- General Motors (GM) of North America
- Maryland – Calvert County Indoor Aquatic Center
- Montgomery County Dept of Correction and Police
- Ohio University – Chillicothe Campus
- Santa Ana Federal Building Renovations
- University of California, Davis School of Veterinary Medicine Instructional Facility
- Tyler County Courthouse
- Washington & Lee University
- WV Air National Guard
- WV Museum of Culture and Natural History
- WV State Capitol Complex, Bldg. #3, #4
- WVU—Downtown Campus
- CAMC General, Memorial Division
- CAMC Women & Children’s Hospital
- United Hospital Center

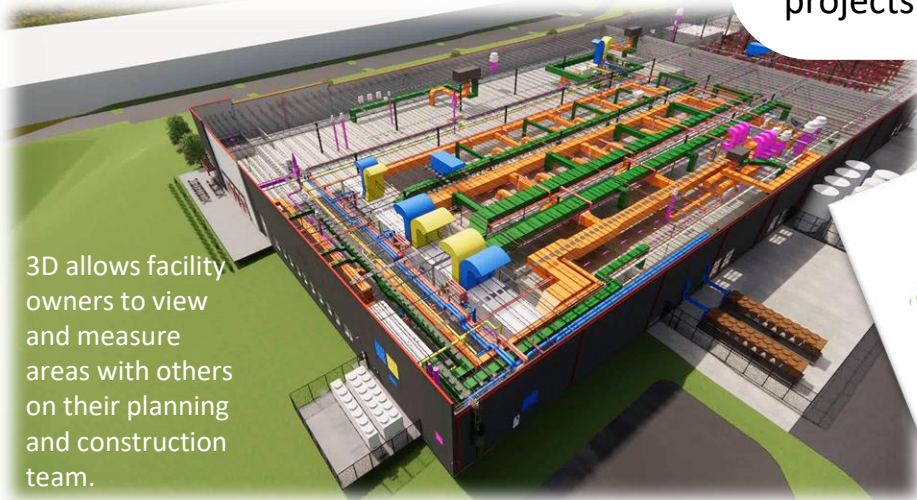
# 3D Scan to BIM Services BIM Collaboration



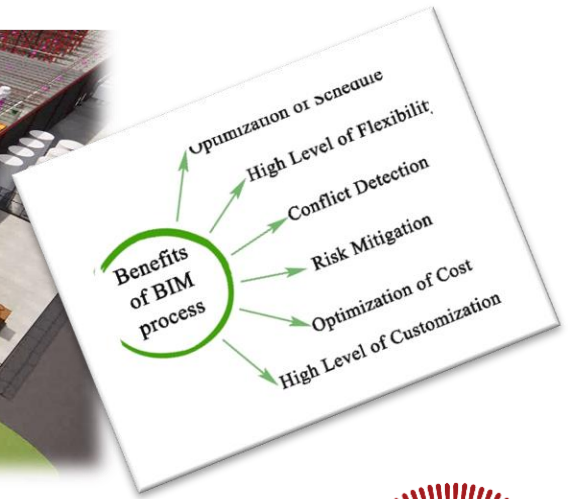
## Why 3D Laser Scanning is Better

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

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



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



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



Point Cloud



# PWWG ARCHITECTS stewards of the community +

**NAME OF FIRM:** Perfido Weiskopf Wagstaff + Goettel, LLC (PWWG Architects)

**TYPE OF BUSINESS OWNERSHIP:** LLC

**CERTIFIED SMALL BUSINESS ENTITY IN:** PA

## **HISTORY AND DESCRIPTION OF THE FIRM**

Since 1975, PWWG has served clients in the Ohio River Valley and beyond from our main office in downtown Pittsburgh.

PWWG is a diverse, versatile architectural practice, with experience in a wide variety of building types. Our portfolio includes projects, large and small, for cultural institutions, higher education, government, businesses, and individuals.

## **AREAS OF SPECIALIZATION**

- Rehabilitation, preservation, and adaptive reuse of historic architecture and existing buildings.
- Commercial and civic architecture including parking structures, retail, theatres, hotels, and galleries.
- Facilities for education (labs, classrooms, offices, administrative, and workforce training buildings).
- Multi-family residential design (affordable and market rate, student and senior housing, and luxury condominiums).

## **MAIN OFFICE**

PWWG Pittsburgh  
408 Boulevard of the Allies, Pittsburgh, PA 15219

## **BRANCH OFFICE**

PWWG Cincinnati  
1432 Elm Street Unit 1A, Cincinnati, OH 45202

SCAN TO  
VISIT OUR  
WEBSITE



## 1975

Year Established

## 22

Total # of Employees

## 3

Principals

## 12

Registered Architects

## 7

LEED Accredited Professionals

## 2

WELL Accredited Professionals

## 3

Administrative & Support

PERFIDO  
WEISKOPF  
WAGSTAFF +  
GOETTEL



# STRUCTURAL FIRM OVERVIEW

Atlantic Engineering Services (AES) provides structural engineering consulting services throughout the United States. Established in 1986, AES is widely respected for its expertise and services, and is located in Pennsylvania, West Virginia, and Florida. Our clients benefit from proactive, skilled engineers engaging other disciplines and sharing regional experience.

Synergy, creativity, and timeliness are the principles that drive our firm. Continuous interaction between designers and field observers ensures that your design's intent can be accurately translated and properly executed, and specialized BIM technology enriches collaboration between A/E/C firms, fabrication facilities, and other consultants for any type of project, regardless of its complexity or difficulty.

For our clientele, every project has required more than efficient structural support. Depending on the client and their surrounding community, we have helped facilities remain operational during construction, expedited steel design and fabrication services for fast-tracked projects, and implemented droning services to improve visual access.

Most importantly, our professionals listen. For every project our engineers digest everything that is most important to the owners, the goals of the design team, and input from other vital sources to develop structural options that fit your design's framework. We become invested in your goals, crafting ours around the visions and needs provided to us.

Professionals at our firm enjoy what they do and so they do it well, dedicated to producing lasting structures where people can live, work, play, learn, heal, worship, and more. At AES, we take great pride in **bringing architectural visions to life**.

**650** aggregate years of structural design experience

**\$17** billion in total construction costs

**30,000+** total projects

this many clients have returned for this many projects

100s / 10

25 / 100

8 / 200

1 / 500

assisted living civic clubhouse commercial federal + municipal film industry healthcare higher education historic preservation hospitality industrial + energy k-12 education marina multi-family museum + library parking + transportation residential retail

## INDUSTRIES

## SERVICES

adaptive reuse constructability reviews BIM cold-formed steel concrete delegated design design-build elements & connections facade & cornice forensic engineering historic restoration military facility design specialized medical equipment steel designs surveys + inspections sustainability tilt-up unmanned aerial services wood framing + design

### TESTIMONIAL

Michael J. Cain, Project Executive @ MASCARO CONSTRUCTION COMPANY

"AES performed all of the structural engineering and structural detailing for the project and performed these services in an exemplary fashion. Mascaro has worked with AES on many signature projects since the early 1990's in every instance... AES proved to be extremely professional, cooperative and a true pleasure to work with. I certainly would not hesitate to use AES's professional design services on any project and I look forward to working with them again soon."

412.321.4901; mjcain@mascaroconstruction.com

bringing architectural visions to life // [aesj.com](http://aesj.com)



**MORGAN**  
PROPERTY &  
CONSTRUCTION  
CONSULTANTS

## RELIABLE COST ESTIMATES FROM THE EARLIEST STAGES OF DESIGN

The development and control of a realistic budget is essential to project feasibility, and cost projections need to be reliable from the earliest stages of design. Morgan Property and Construction is a professional independent construction cost estimating firm that works with architects and engineers as part of their team, active in each phase of design. Estimates are prepared in CSI Divisional format from the schematic phase forward with updates at each major submission. The firm does not rely on 'comparables' or 'square foot' costs, because projects are nearly always unique in multiple ways, and comparables are never truly comparable.

By making active use of the valuable information generated from the cost estimating process, Morgan is constantly "value engineering" projects as they go through the design phases. At the close of the design phases the firm can selectively use "add" and "deduct" bid alternates to give the owner flexibility and a range bid numbers to pick from to mitigate the uncertainties of the bidding process. The combination of these strategies greatly reduces the likelihood of going through a painful process of cost cutting (as opposed to intelligent value engineering), redesign and rebidding.

## KEY COMPETENCIES

- Cost Estimating
- Inspection
- Value Engineering
- Facility Assessments
- Administration/Management

## DIFFERENTIATORS

- 40+ years of professional construction management and administrative skills.
- Provides realistic, practical and valuable tools to clients which empower them with knowledge and in-depth understanding to execute their desired construction goals.
- Specific expertise in cost estimating to clearly communicate with clients about cost savings, feasible alternative solutions, and avoiding costly delays and unforeseen expenses.
- Commercial/institutional/multi-family construction experience.
- Services are beneficial to both architects and owners in understanding their costs and supporting their projects throughout construction.



# FIRM OVERVIEW

## FOUNDERS

Lon Brightbill, PE  
Jay Santos, PE

## WHEN WE OPENED

1989  
*35 Years in Business*

## WHERE WE ARE

Corporate  
6760 Alexander Bell Drive  
Suite 200  
Columbia, MD 21046  
410.290.0900

Local Presence in 19 states and  
60 Cities

## WHAT WE DO

Building Commissioning  
Controls Engineering  
Remedial Engineering  
Training  
Fault Detection Diagnostics

## CONTACT

Jay Santos, PE  
*Principal, Co-Founder*  
410.290.0900  
jays@facilitydynamics.com

David Rush, PE  
*Project Manager*  
410.290.0900  
davidr@facilitydynamics.com

facilitydynamics.com

Lon Brightbill, PE and Jay Santos, PE began with a team of professional engineers with complementary experience in building mechanical, electrical, and controls technologies to help bridge the ever-widening gap between the design/construction process and the operation and maintenance of the facility. Thirty-five years ago, the FDE team began doing commissioning before the term commissioning existed. Our culture is to foster collaboration and inject our unique expertise to help the project team deliver successful facilities. As pioneers in the building commissioning industry, we have an unparalleled resume of successful highly complex facilities.

## THE TEAM

We believe, and our actions and history show, that it is essential for the commissioning engineer to be a collaborative and constructive team member. Our comprehensive approach combines “hands-on” analysis with state-of-the-art software to create a thorough, efficient, and superior building commissioning process.

Our highly skilled staff have complementary expertise in mechanical and electrical systems design, HVAC controls, electrical testing, systems balancing, training, operations and maintenance, and remedial system analysis. We believe in a hands-on approach that removes us from just witnessing a process and instead, actively includes our engineers and technicians.

Facility Dynamics Engineering is structured as a uniquely flat organization with two principals and all other 70 employees working autonomously and collaboratively on projects.

## FINANCIAL STABILITY

With our revenue in 2024 being \$23MM, we are a firm that carries zero debt and can pay our employees for six months without generating income. Additionally, we have continuously maintained an 18 month backlog of work for over 10 years and sustained growth and profitability each year.

## LITIGATION

In 35 years, Facility Dynamics has completed over 4,000 projects of all sizes and types and our team of experienced technicians, specialists and engineers have not been involved or been the focus of any legal or major technical issues on an FDE project.



# SECTION III.

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## Description of Project Experience

Additional Project Experience  
Brochures



# Engineering for State & Local Government Facilities



**Governor's Mansion**

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

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



**Building #3**



**State Capitol**



**LEED Certified Candidate**



**Design/Consulting Services**



Tyler County MS/HS

Ben Franklin Career Center

William R. Sharpe, Jr. Hospital

WV Capitol Central Plant

WV Cultural Center

VA Medical Center Huntington

Davis-Thomas Elementary

Elkins Middle School

Robinson Grand Theater

Woodrow Wilson High School

Trap Hill (Junior) Middle School

Mercer County Boiler Renovations

Southside K-8 School

laeger Panther Elementary

Concord Tech Ctr-M/E Design  
Nick J Rahall Technology Center

Bank One (Chase Towers)

University of Charleston  
Innovation Center



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

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

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

MEP Engineering design and Commissioning services for both the HVAC/lighting/roof Renovation project retrofitting Hospital and the patient wing addition. Comprehensive MEP engineering and commissioning services for a central domestic hot water services, central boiler/chiller plant and 1.8 MW bi-fuel emergency generator system. Central heating plant with **three 10.5 Million BTU heating hot water boilers** with low NOx burners to meet DEP emission requirements. WV Pumping for heating, cooling and domestic hot water. Integrated DDC controls for central monitoring, troubleshooting and control including demand control ventilation and outside air measuring/monitoring. The HVAC system is also an integral part of the smoke control system. Lighting systems upgraded to LED and controlled to minimize energy. IAQ enhancements were incorporated into the high performance HVAC systems. Careful phasing, and the need to disrupt only small portions of the Hospital at a time, resulted in an extended construction period.

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



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

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

# Robinson Grand Performing Arts Center

Clarksburg, WV

**Renovations & Additions Area:** 45,000 ft<sup>2</sup>    **Construction Cost:** \$17,000,000

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

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



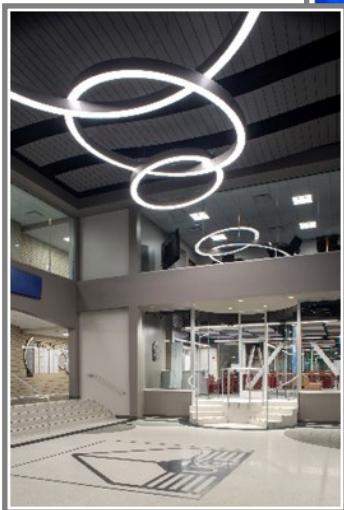
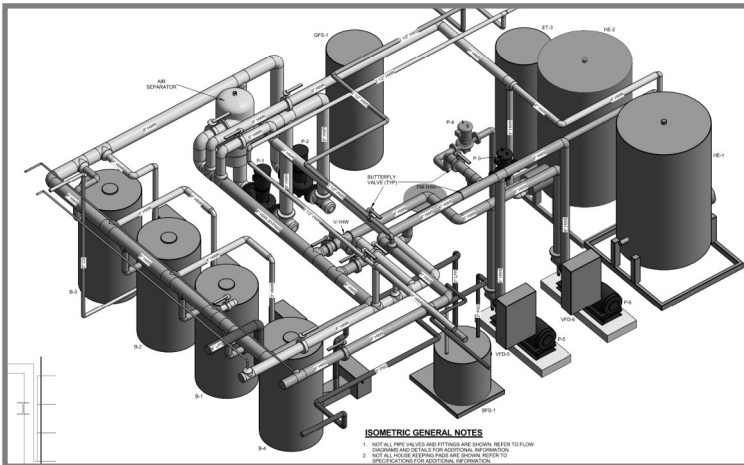
The historic Robinson Grand Theater was originally built in 1913 and eventually closed to the public in the year 2000. When the City of Clarksburg purchased the building in 2014, extensive renovations were needed to re-open the theater and **ZDS** was hired for planning and evaluation. Includes all **NEW** HVAC/Electrical/Plumbing/FP upgrades for the 45,000 ft<sup>2</sup> building. 3D-Scan-to-BIM of the existing facility was invaluable to develop the comprehensive existing conditions. Now called the **Robinson Grand Performing Arts Center**, this beautiful award winning historic theater has been brought completely back to life! Resurrection through adaptive reuse brings out the best the city of Clarksburg has to offer through the Robinson Grand Performing Arts Center.

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

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

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

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

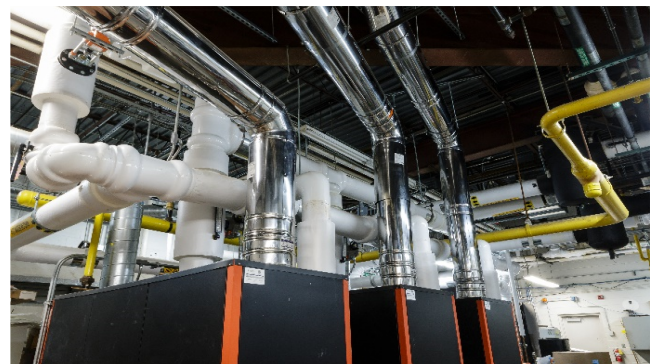


**Renovations resulted in over a 50% reduction in energy over ASHRAE 90.1-2007 standards.**

# Tyler County Schools

## Tyler Consolidated Middle/High School

### HVAC Upgrades, Auditorium Additions/Renovations



The project qualified for EPAct for energy efficient design, using over 50% less energy than schools designed using ASHRAE 90.1-2007.

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

**Estimated Phase I Project Costs:** \$4,796,903, SBA funding \$3,698,578

**Estimated Phase II Project Costs:** \$11,518,024

**Date Completed:** Phase I was completed in 2019; Phase II completion in 2024

**School Size:** 188,156 square feet

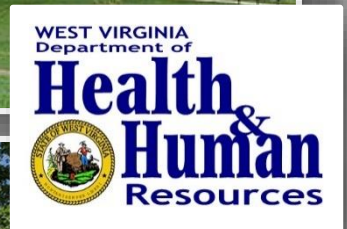


# Engineering for State & Local Government Facilities

ZDS engineering project experience includes facilities registered as official Historic Buildings



Jackie Withrow State Hospital



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



Hopemont State Hospital



Mildred Mitchell-Bateman State Hospital

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

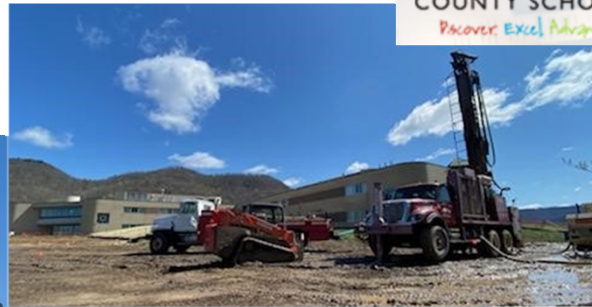


Design/Consulting Services

# Kanawha County Schools Riverside High School HVAC/Lighting Renovations



1<sup>st</sup> Place Technology Award 2023



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

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

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

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

**Incorporates Air Cleaning Technology in HVAC System.**

**EUI reduction from 84 to 30.6 and Energy Star Certified!**

**Construction Costs:** \$17,400,000 completed in 2023

**School Size:** 189,318 square feet

**Contact:** Chuck Smith, Director/Support Services: (304) 348-6148



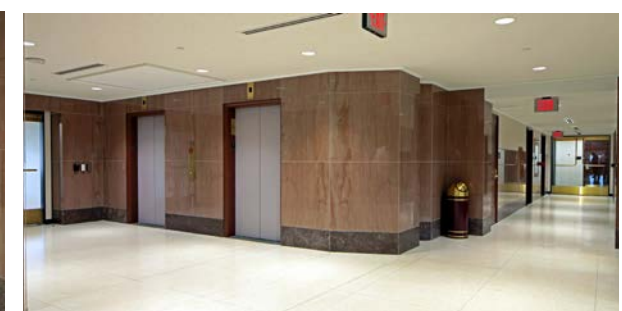
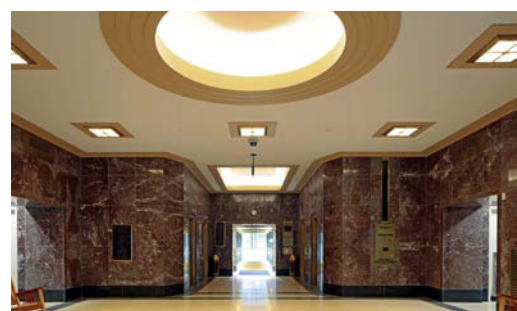


PERFIDO  
WEISKOPF  
WAGSTAFF +  
GOETTEL

## work in west virginia



- Hardway Hall Systems Upgrades, Fairmont State University
- Turley Center Renovation, Fairmont State University
- Campbell Hall Renovation, West Liberty University
- Campbell Hall Shell Space Fit-out for Labs, Classrooms and Offices - Phases 1 & 2, West Liberty University
- Shaw Hall Renovation, West Liberty University
- Main Hall, West Liberty University
- Science Building Study, West Liberty University
- West Virginia State Capitol Rotunda
- West Virginia Building 3 Renovation
- West Virginia Building 4 Renovation
- Elevator Upgrades and Modernizations, WV Capitol Complex
- Downtown Loop Campus Expansion, West Virginia University
- Oglebay and Ming Hsieh Halls, West Virginia University
- Brooke Tower, West Virginia University
- Utilities and Infrastructure Improvements & Quad Design, West Virginia University Evansdale
- Old Main, West Virginia University Institute of Technology
- Applied Technology Center, WVU at Parkersburg
- Child Development Center, WVU at Parkersburg
- STEM Building Study, WVU Potomac State
- Nursing Program Expansion Study, WVU Potomac State
- National Center for Youth Science Education Masterplan
- Wheeling Heights II Housing, Wheeling
- Holiday Inn Hotel & Suites, Beckley



## wv state capitol building #3 renovation : charleston, wv re-use/renewal of a landmark historic office building

The project breathed new life and purpose into one of the most prominent buildings on the WV Capitol campus, with preservation, restoration, and adaptive reuse of historic Building 3 as a modern, well-functioning and welcoming office space.

### PWWG'S DESIGN BLENDS HISTORIC FEATURES WITH LATEST WORKPLACE AMENITIES

- Interior was taken back to its structural shell and core, maintaining historically important features and spaces. All new systems were installed, and the functional core of the building was reconfigured to provide new amenities to building occupants, and new utilities including security, data, and telecommunication systems.
- Office interior design and FF&E balanced different department needs for privacy and security. Common spaces are located around the core, including private huddle rooms, meeting spaces, kitchens, pantries, and storage spaces.
- Integrated design process with consultants facilitated complex MEP upgrades in the historic structure that gained approval from the West Virginia SHPO.
- PWWG engaged government administration, management, and facilities staff and helped define needs and evaluate options in everything from floor layout to amenities and phasing, using 3D models.
- **Analysis of four existing elevators, included validating removal of one car to provide a mechanical shaft and revising one car to service elevator use with separate controls. Existing cars received new finishes.**
- **Added one new machine room-less service elevator in Loading Pavilion (KONE)**

**CLIENT:** Dept of General Services, State of West Virginia

**SIZE:** 165,000 sf

**COST:** \$37.5M

**COMPLETION:** 2017

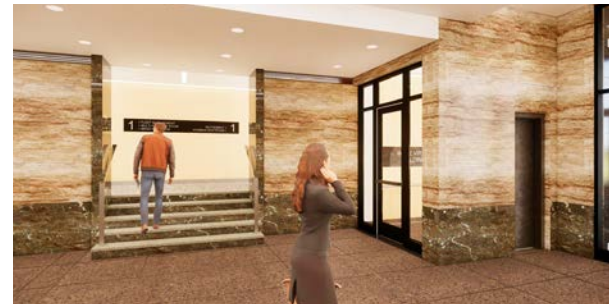
#### **FIRM RESPONSIBILITY:**

Lead Architect coordinating large consultant team  
Programming  
Architectural Design  
Contract Documents  
Contract Administration

#### **REFERENCE:**

William Barry, Director  
West Virginia General Services Division  
304.352.5532  
William.D.Barry@wv.gov

 Design Award Winner



## wv state capitol building #4 renovation : charleston, wv re-use/renewal of a landmark historic office building

This is the third project on the capitol campus, which renovates the site, exterior, and interior of a 1950s office building. It updates the layout, systems and finishes, addresses life safety and accessibility, and preserves the mid-century architectural character.

The goal of this project is to provide flexible, state-of-the-art open office space for multiple agencies and users. Although Building Four is not listed on the National Register of Historic Places, the client wanted to maintain the existing style and historic character of the building in a manner consistent with the National Park Service Historic Preservation Standards.

**Original building elevator cabs and equipment were modernized to gear-less, overhead electric traction type (West Virginia Elevator) and new vertical platform lift was added to accommodate accessibility from Lobby to main level (Graventa, Genesis).**

**CLIENT:** Dept of General Services, State of West Virginia

**SIZE:** 7 stories plus basement, 82,000 sf including basement

**COST:** Confidential

**COMPLETION:** 2024 (est.)

**FIRM RESPONSIBILITY:**

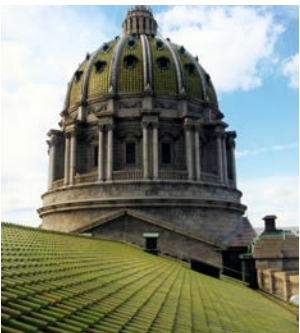
Lead Architect coordinating large consultant team  
Existing Conditions Doc  
Programming  
Architectural Design  
Finishes  
Contract Documents  
Contract Administration

**REFERENCE:**

Scot Casdorff, PE  
Architecture & Engineering Manager  
WV General Service Division  
Architectural and Engineering  
304.957.7145  
Scot.R.Casdorff@wv.gov

relevant projects +

PERFIDO  
WEISKOPF  
WAGSTAFF +  
GOETTEL



## pa capitol exterior restoration : harrisburg, pa

PWWG coordinated rehab of the monumental 1906 Main Capitol Building in Harrisburg, including the roof, domes, cupolas, granite masonry, wood windows, paving and steps. Completed as a joint venture with Graves Architects and Noble Preservation Services.

### APPLYING THE ART & SCIENCE OF PRESERVATION RESTORED A MAJESTIC BUILDING

- Project restored the envelope with “best practices” in preservation and SHPO standards while introducing details to withstand the next 50-75 years.
- Restoring curved glazed-tile roofs on domes required inventive design and detailing—tiles were in place with no waterproofing over steel purlins; PWWG detailed custom replacement tile, precisely matching the original, retrofit over a new deck with watertight membrane; curvature was preserved so decorative copper elements fit perfectly when reinstalled.
- Mortar joints at gutters at gabled roofs leaked constantly; PWWG redesigned with durable lead-coated copper drainage basins, and separate drains for each. Gutters were rebuilt at low elevation to prevent water from contacting the granite surfaces, and keep it from backing up under the new gabled roofs.
- Project was constructed in phases over several seasons, synchronized with other interior projects at the Capitol. The building was occupied throughout construction.

**CLIENT:** Pennsylvania Dept. of General Services

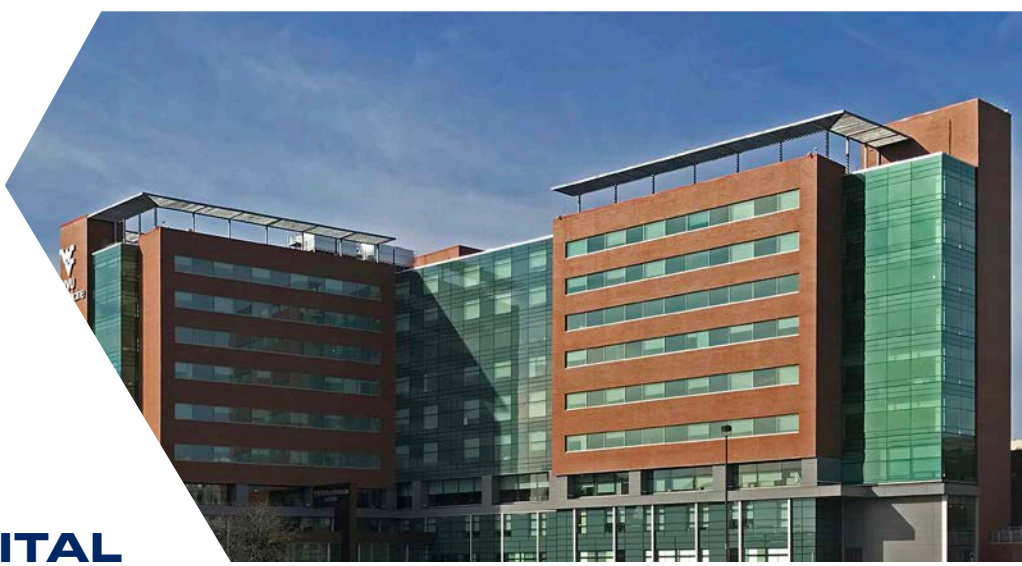
**SIZE:** N/A

**COST:** \$25M

**COMPLETION:** 2005

**FIRM RESPONSIBILITY:**  
Preservation Research  
Materials Testing/Analysis Design  
Contract Documents  
Contract Administration

★ Design Award Winner



## J.W. RUBY MEMORIAL HOSPITAL

### \$280M ADDITION & EXPANSION

#### PROJECT VISION & BACKGROUND

The growth of practice and necessary expansion of the J.W. Ruby Memorial Hospital is the result of WVU Medicine's dedication to serving the healthcare needs of its patients. This growth required the addition of two, 10-story towers to the original hospital, along with renovations to the existing entry complex, and connections between existing departments within the hospital. The first tower added 235,000 square feet, 139 beds, a trauma care unit, a neonatal intensive care department, and expanded the emergency department. The second tower added 80,000 square feet and a bank of elevators, and it functions primarily as a connector between the various wings of the facility.

#### STRUCTURAL SOLUTIONS

The structural systems for the two towers, the other additions, and the infill were all designed and constructed with structural steel composite framing and composite concrete floor slabs. Lateral load resistance is provided by braced steel frames. Connections back to the original hospital were all coordinated with the General Contractor to expedite construction. The field and expansion joints were located at the added wings to isolate issues with differential movement.

AES also provided the supplemental framing for specialized equipment throughout the facility and assisted with coordination of prefabricated MEP systems. The structures are supported on shallow conventional foundations bearing on bedrock directly below the lowest level of the towers.

#### TAKEAWAYS

These extremely complicated additions were carefully coordinated so as to not interfere with the operation of the existing facility and to integrate into the hospital complex in ways that resulted in much-improved patient and caregiver experiences. This expanded medical facility provides a 33% increase in hospital capacity and significantly improves care for trauma patients and infants.





## **WVU MEDICINE CHILDREN'S HOSPITAL**

**\$215M CONSTRUCTION**

### **PROJECT VISION & BACKGROUND**

Initiated in 2017 due to the rising demand for pediatric and specialty services, this hospital aims to revolutionize healthcare for children and women in the region. Boasting a larger care team, a top-notch pediatric emergency department, the state's only Level IV neonatal intensive care unit, and a world-class Birthing Center, this facility was designed with evidence-based principles to provide a healing environment, ensuring a comfortable space for patients and faculty. Apart from the Birthing Center, the hospital includes four Centers of Excellence, focusing on Blood Disorders and Cancer, Critical Care and Trauma, a Heart Center with cardiac surgery and ECMO capabilities, and Neuroscience. Additional features comprise a Pediatric Intensive Care Unit, Cardiac Intensive Care Unit, Neonatal Intensive Care Unit, operating rooms, advanced pediatric imaging, and various labs. The project represents a collective effort, with many professionals and donors coming together to make it a reality.

### **STRUCTURAL SOLUTIONS**

AES provided comprehensive structural engineering support for this 9-story, 150-bed hospital tower with an attached 3-story medical office building featuring a dedicated emergency department. The structures were conventionally framed with steel supporting composite concrete floor slabs and roofs. The main tower's rooftop included a helipad and cooling towers. AES also designed braced frame cores for lateral stability and shallow spread footings on bedrock with rock anchors for foundations. Challenges included dealing with expansive, pyritic materials in the northern half of the site and designing a unique "V" column to support the front end of the main hospital tower. AES also created enclosed walkway bridges connecting to existing buildings and supported various medical equipment and other structures on the site. To accelerate the construction schedule, early foundation and structural steel drawings were issued.

### **TAKEAWAYS**

Due to our proactive involvement and close coordination with the entire team throughout design and construction, our team was able to successfully bring this architectural vision to life. Our heavy involvement and coordination with the steel detailer throughout the process added further value to the delivery of the project.

# COMMISSIONING EXPERIENCE



## Montgomery County Judicial Center Annex

Rockville, MD

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### PROJECT DETAILS

#### SIZE

191,000 SF

#### DATE

2021

#### PROJECT SPECIFICS

- New Construction
- Juvenile and Family Courts
- 6-Story Building
- Mechanical Penthouse
- County Judicial Center

Facility Dynamics Engineering provided commissioning services to the 191,000 SF Annex addition and renovation of the existing 327,000 SF Judicial Center for Montgomery County government. The expansion includes 10 new courtrooms and administrative spaces. It will also house additional expansion space and Juvenile and Family divisions.

The project includes a green roof with plants and trees to absorb rainfall, solar panels, stormwater management system, and energy efficient mechanical systems.

FDE's scope for commissioning services covers all HVAC and HVAC controls systems including: central air handling unit systems with energy recovery, hydronic heating systems, VAV terminal units with hot water reheat, fan coil units, exhaust systems, humidifiers, new chillers and chilled water system. Other systems include: security systems, lighting controls, emergency power, fire alarm, generators, building automation system and plumbing systems which include: water heaters, domestic water booster systems and plumbing pumps.

In addition to this facility, FDE is providing Cx services for over a dozen buildings at three different complexes for Montgomery County's Equipment Maintenance and Operations Center.

The Montgomery County Judicial Center received LEED Gold certification.



# COMMISSIONING EXPERIENCE



## General Services Administration, Carter Keep Courthouse

*San Diego, CA*

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### PROJECT DETAILS

#### SIZE

467,000 SF

#### COST

\$368.7M, Construction

#### PROJECT SPECIFICS

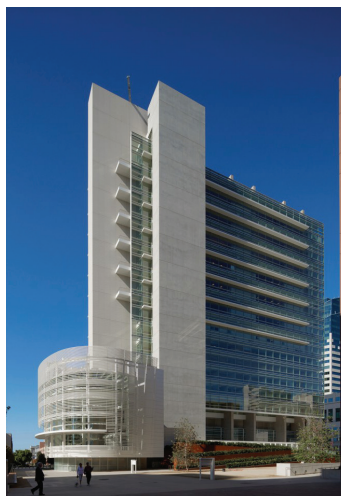
- 16 Stories
- LEED Gold
- 14 Federal Courtrooms
- Natural Daylighting
- Energy Efficient Mechanical Systems

**Named after two legendary judges, James Marshall Carter and Judith Nelson Keep, this courthouse honors their work and their commitment with a building that blends with the other surrounding buildings into a stunning civic space for its occupants and users.**

As with new courthouses in the 21st century, the Carter Keep Courthouse's security is a focal point of the design with the front lobby having visibility from all of its approaches and efficiently welcomes and exits users to all of the spaces within. With nature in place, the lobby gives people access to the ideal fresh air of San Diego's climate and gives people access to fresh air with an adjacent plaza and garden spaces.

FDE provided construction and acceptance phase commissioning services that included the following systems:

- Air Handling Units
- Terminal Units
- Fan Coil Units
- Domestic Water Systems
- Unit Heaters
- Exhaust Systems
- Chillers
- Boilers
- Cooling Towers
- Pumps
- Building Automation System
- Electrical Systems
- Emergency Power Distribution System
- Lighting Controls



# COMMISSIONING EXPERIENCE



## Howard County Courthouse

*Howard County, MD*

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### PROJECT DETAILS

#### SIZE

238,000 SF

#### DATE

Completed 2021

#### COST

\$75M

### PROJECT SPECIFICS

- Secure Facility
- Replacement Facility
- Safety Screening, separate hallways and elevators for detainees
- Collaborated with WJE for Building Envelope

**As the first public-private-partnership for Howard County, Executive Calvin Ball broke ground on the new Howard County Circuit Courthouse on June 24, 2019.**

The 238,000 SF facility was completed through a public-private partnership, the first for Howard County. This project resolved deficiencies in the previous Courthouse, which was built 175 years ago and has numerous safety challenges that impact access to justice.

Facility Dynamics Engineering was contracted to serve as an Independent Building Expert Consultant to confirm that the commissioning was successfully completed. FDE's services were to review and recommend for approval the commissioning efforts by others. The base scope of work was to provide multiple design reviews during design phase and review the Commissioning plan and actual Commissioning of the facility during construction and acceptance phases. design, construction, pre-occupancy and post-occupancy commissioning.

The project recently opened in September 2021 and received LEED Gold certification in addition to winning the Best Social Infrastructure Project, Best Financial Structure and Government Agency of the Year from P3 Bulletin.



# SECTION IV.

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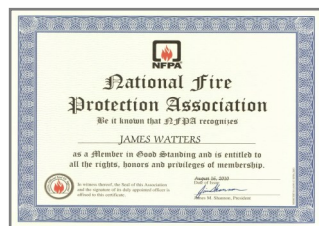
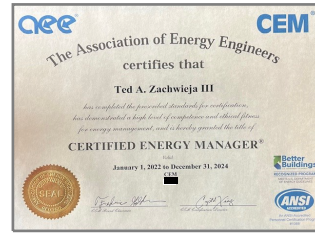
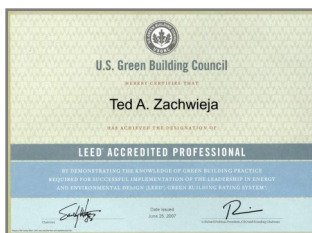
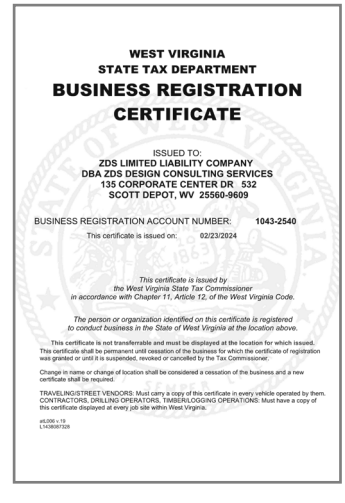
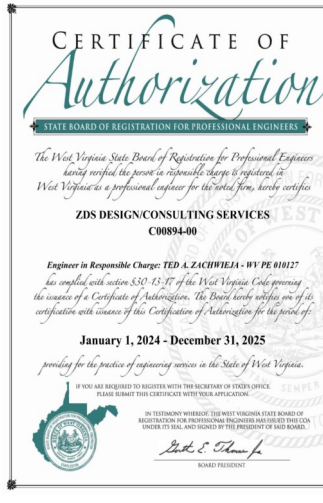
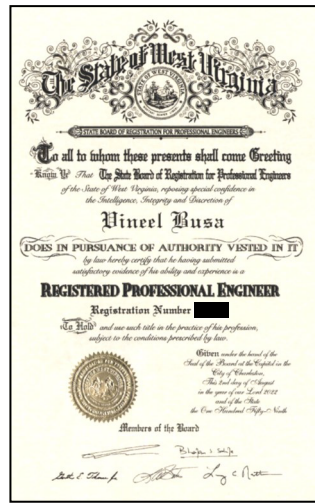
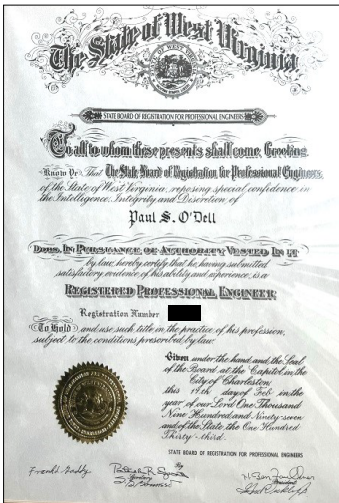
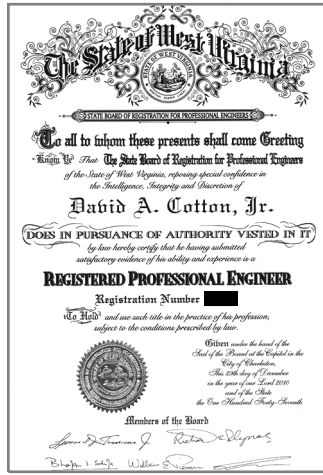
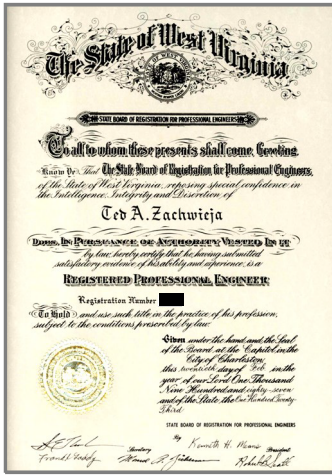
## Proposed Team Staffing Plan

Team Certifications

Team Resumes



# Certifications



# EXPERIENCE OF KEY PERSONNEL



## Principal-in-Charge

**Ted (Todd) A. Zachwieja, P.E., CEM,** LEED AP, ZDS founder with over 45 years of experience in MEP design, energy management, IAQ, Performance Contracting and commissioning. Nationally recognized for expertise in IAQ, LEED and Certified Energy Manager.



## MEP Engineer

**Vineel Busa, PE,** has a Masters in Mechanical Engineering and is working on his PhD in Project Management. He has over 7 years experience in HVAC & commissioning.



## Chief Technical Officer

### MEP Engineer/Commissioning

**Ted A. Zachwieja III, P.E., CEM** with over 20 years of experience and specializes in MEP design, energy management, IAQ and commissioning. Forerunner in adoption of 3D scanning for buildings for use in MEP design for renovations. Extensive experience in IT systems administration. Co-authored BIM Training for Autodesk University. Legend-in-Energy Award recipient.



## MEP Designer

**Meher Meka, BSEE, EI,** with over 10 years of experience and has a Masters Degree in Electrical Engineering and is experienced in Power Distribution & Protection, lighting design, lightning protection, fire alarm, communications and schematics.



## MEP Project Engineer

**David Cotton, PE, LEED AP BD+C,** has over 18 years of experience in the design and construction of over 500 projects. As a project manager he successfully manages projects from start to finish in design, bidding, and construction administration.



## MEP Engineer

**Mark Estep, P.E.,** has over 33 years of experience designing mechanical and electrical projects. He designs solutions that incorporate essential and functional needs.



## MEP Engineer

**Paul O'Dell, P.E.,** has 30 years of engineering experience involving the analysis, design, project management, specifications' writing and construction management on many projects.



## MEP Designer

**Billy Smith,** with a Bachelors Degree in Mechanical Engineering, provides design, bidding, construction administration, and commissioning support for mechanical, plumbing, fire protection, and electrical systems.



## Construction Administration

**Jim Watters,** with over 50 years of experience in mechanical, electrical, plumbing, commissioning and construction administration. Extensive construction experience, including cost estimating, contractor coordination and scheduling for various projects.

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

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

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



## PROFESSIONAL REGISTRATIONS

Professional Engineer:

Florida  
Georgia  
Kentucky  
Maryland  
North Carolina  
Ohio  
Pennsylvania  
South Carolina  
Virginia  
West Virginia

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

Certified Energy Manager  
(C.E.M.) National  
Certification



LEED Accredited Professional,  
National Certification through  
USGBC



## EDUCATION

Masters of Science in Engineering  
Management from West Virginia University  
College of Graduate Studies.  
Bachelor of Science in Mechanical  
Engineering from West Virginia  
Institute of Technology.

## GOVERNMENT/COMMERCIAL PROJECT EXPERIENCE

- Bank One/Chase Towers
- Bayer Material Science
- Calvert County Aquatic Center, MD
- Charleston Area Medical Center
- Chief Medical Examiners Office Retrofit
- Culture Center, HVAC & Fire Protection, WV State Capitol Complex
- General Motors Corp. Re-commissioning
- Harvard University Research Laboratory
- Hopemont Hospital, WVDHHR
- Jackie Withrow Hospital, WVDHHR
- Jackson County Courthouse Annex
- Kanawha County Commission: Judicial Annex additions/renovations
- Kanawha County Courthouse
- Kanawha County Schools
- Laidley Towers
- Marshall University
- Mercer County Schools
- Mercer County Courthouse Annex
- Mildred Mitchell Bateman Hospital
- Olin Corporation
- Pocahontas County 911/EMS Center
- Public Service Commission of WV
- Raleigh County Schools
- Rhone-Poulenc
- Roane General Hospital
- Robinson Grand Performing Arts Theatre
- Santa Anna Federal Building, CA
- Tyler County Courthouse
- Tyler County 911 Center - **Net Zero**
- Tyler County Schools
- Toyota Motor Manufacturer, WV Inc.
- UC Davis Veterinary Medicine, CA
- Union Carbide/DOW
- United Center
- University of Charleston Innovation Ctr.
- William R. Sharpe, Jr. Hospital, WVDHHR
- World Trade Center, MD
- WV Air National Guard including Cx Fuel Cell/Maintenance Hangars at Yeager Airport - **LEED Silver Certified**
- WV Army National Guard
- WV Capitol Complex Renovations
- WVDHHR - State-wide Hospitals
- WV DOH Testing Lab
- WV Division of Natural Resources
- WV Division of Protective Services
- WV Higher Education Authority
- WV General Services Division
- WV State Capitol Complex Renovations
- WVU Health System

# Todd Zachwieja, PE, CEM, LEED AP

## PROFESSIONAL AND COMMUNITY AFFILIATIONS

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

Recognized by the International Who's Who of Professionals

Recognized nationally as West Virginia's Business Man of the Year

Recognized by AEE nationally in 2007 as a Legend in Energy

Recognized by AEE nationally in 2008 as a Charter Legend in Energy

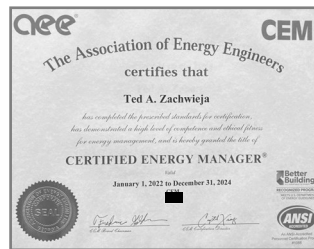
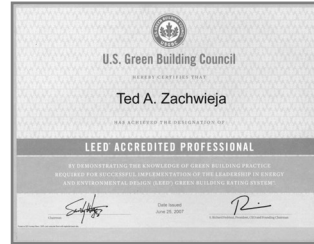
Charter Life Member of the Association of Energy Engineers

Professional Affiliate Member of the American Institute of Architecture

Associate Member West Virginia Society for Healthcare Engineering

Member of the International Code Council

Member of the National Society of Professional Engineers



## OTHER RECOGNITIONS

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

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

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

Contributing editor *"Ventilation for a Quality Dining Experience"*

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

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

1<sup>st</sup> Place 2014 ASHRAE Technology Award, Region VII

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

LEED Gold Certified Harvard Arboretum, Boston, MA

First ASHRAE bEQ certified building in West Virginia, 2015

1st Place 2023 ASHRAE Technology Award, Region VII



# Ted Zachwieja III, PE, CEM

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

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

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

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

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

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



## PROFESSIONAL REGISTRATIONS

Professional Engineer:

Florida

West Virginia

Certified Energy Manager (C.E.M.)

National Certificate



## EDUCATION

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

## AWARDS AND RECOGNITIONS

Awarded 2012 Legend in Energy by the Association of Energy Engineers

Awarded acceptance into ASHRAE's 2015 Leadership University

ASHRAE Blue Ribbon Award of Excellence

Co-Author at Autodesk University

1st Place 2023 ASHRAE Technology Award, Region VII

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



## RELEVANT PROJECT EXPERIENCE

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

## Professional Affiliations

- Member of ASHRAE WV Chapter
- Prior Membership Promotions Chair WV ASHRAE Chapter
- Prior Chapter Secretary WV ASHRAE Chapter
- Lifetime member of the Association of Energy Engineers
- Associate Member WV Society for Healthcare Engineering



**CEM**<sup>®</sup>

## OTHER RECOGNITIONS

Presented and co-authored at regional and national conferences

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

1<sup>st</sup> Place 2014 ASHRAE Technology Award, Region VII

First ASHRAE bEQ certified building in West Virginia, 2015

1<sup>st</sup> Place 2023 ASHRAE Technology Award, Region VII

ASHRAE Blue Ribbon Award of Excellence

2012 Legend in Energy by the Association of Energy Engineers

2015 ASHRAE Leadership University Recipient



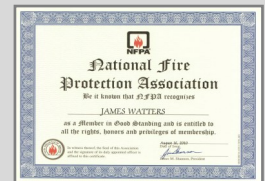
Jim has over 50 years of experience in design and implementation of lighting, HVAC, plumbing and electrical systems including nine years in the construction industry. He has a comprehensive knowledge of construction documents, contracts, and development of cost estimates, budgets and schedules. Jim's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

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



## PROFESSIONAL AFFILIATIONS

Member of the National  
Fire Protection Association (NFPA)



Member of the Health  
Care Section of the NFPA

Past Member of the Illuminating  
Engineering Society (IES)

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

Past member of the Institute of  
Electrical Engineers (IEE)

## OTHER RECOGNITIONS

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



## GOVERNMENT/COMMERCIAL PROJECT EXPERIENCE

- Bluefield Area Transit Authority Administration and Maintenance Facility
- Belmont County Commission Coroner, Records & Health Dept. Facility
- Kentucky Judicial Center, Boyd County
- CAMC Various Labs
- Chief Medical Examiners Office Lodox Renovations
- Coal Heritage Highway Authority
- Chase Towers (formerly Charleston National Bank)
- Culture Center Fire Alarm/Sprinklers, WV State Capitol Complex
- Department of Transportation Rest Area prototype
- Department of Transportation Welcome Center prototype
- Fenway Park Lightning Protection/ Grounding Study, Boston
- Glenville State College
- Hopemont Hospital, WVDHHR
- Jackie Withrow Hospital, WVDHHR
- Jackson County Libraries Renovations
- Kanawha County Commission Judicial Annex Renovations
- Laidley Towers
- Meadowbrook Rest Areas
- Morgantown Welcome Center
- Oglebay Wilson Lodge Renovations
- Pocahontas County 911/EMS Center
- Redmond House, WVDOT
- Rhone-Poulenc New Admin. offices
- Robinson Grand Performing Arts Theatre
- Sacred Heart Pavilion and Daycare Ctr
- St. Patrick's Church
- Shawnee Park Clubhouse
- Stonewall Jackson Marina Renovations
- Tucker County Board Office Boiler Retrofit
- Tucker County Courthouse
- Tyler County Courthouse
- Tyler County 911 Center - **Net Zero**
- University of Charleston Innovation Ctr
- William R. Sharpe, Jr. Hospital, WVDHHR
- World Trade Center, MD
- WV Air National Guard including Cx \$45M Fuel Cell/ Maintenance Hangars at Yeager Airport - **LEED Silver Certified**
- WVArNG Renovations
- WV Children's Home, WVDHHR
- WV Department of Military Affairs, Public Safety Maintenance Facility, Eleanor
- WV Department of Transportation Burnsville Rest Area and Domestic Water Pumping Station - **AIA Merit Award Recipient**
- WV State Capitol Complex Renovations to Buildings 1, 3, 4, 5 & 7
- White Sulphur Springs Welcome Center

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

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

## PROJECT EXPERIENCE

### Boiler Projects

- Tyler County Courthouse Additions/Renovations
- Tyler County 911 Center - **Net Zero**
- New Clendenin Elem Commissioning
- Independence Middle HVAC/Roof Renovations and Commission
- Shady Spring Middle School HVAC Renovations & Cx
- Maxwell Hill Elementary School HVAC Renovations & Cx
- Tyler Consolidated MS/HS Renovations and Commissioning
- Dominion Office Building - **LEED Gold**
- WV Capitol Complex Bldg. #3 & #4 Renovations and Commissioning
- Belmont County Commission Coroner, Records & Health Dept. Facility
- Beckley Police Station
- Dominion Office Building, Delmont, PA
- Health Plan, Wheeling, WV

### Other Project Experience

- Braxton County 911/EMS Center
- Mon General Hospital Echo Renovations
- Mon Health LTAC for Acuity
- Clarksburg Comprehensive Care Clinic Renovations
- Jerry Dove Medical Office Building
- Medbrook Building HVAC Replacement
- Doddridge County Athletic Complex
- White Hall Public Safety Building
- Webster County 911/EMS Center
- Beitzel/Pillar Innovations Office Building
- Percival Hall Absorption Chiller and Cooling Tower Replacement
- Upshur County 911/EMS Center
- WVU Creative Arts Center Rehearsal Hall
- WVU Towers Dining Hall Renovations
- WVU Athletic Performance Center
- University of Pittsburgh Softball Practice Facility
- WVU Alumni Center
- WVU Biomedical Research Facility
- WVU Milan Puskar Stadium Locker Room Renovations
- NOAA GOES-R Supercomputing Center, Fairmont, WV
- Harrison County 911/EMS Center
- Renaissance Academy, Morgantown
- Mabscott Elem Renovations/Cx Morgantown, WV
- City of Bridgeport WWTP
- VA Medical Center; Audiology Task Lab Clarksburg, WV
- Boy Scouts of America, Rex W. Tillerson Leadership Center
- Pocahontas County 911/EMS Center
- Saint Marys K-8 School Renovations
- Mylan Pharmaceuticals
- Westmoreland Community and Technical College, Indiana, PA
- HP Hood Addition/Renovations, Winchester, VA
- WVU Rehabilitation Center



## PROFESSIONAL REGISTRATIONS

### Professional Engineer:

West Virginia  
Maryland  
Virginia  
Ohio  
Pennsylvania

LEED AP BD+C Professional Accreditation  
NCEES Record Certificate

## EDUCATION

Bachelor of Science  
Mechanical Engineering  
WV Institute of Technology

## MEMBERSHIPS

WV ASHRAE, Past President  
National Fire Protection Association  
WV Society of Healthcare Engineers

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

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

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



## PERSONAL COMMERCIAL/GOVERNMENTAL PROJECT EXPERIENCE

- General Motors Dealerships; Lewisburg, Charleston and Beckley
- Toyota Manufacturing Facility; multi-purpose addition containing office spaces, medical treatment area, and weight room
- Toyota Manufacturing Facility; air handler replacement
- Buzz Food Processing Facility; New 12,000 sf facility includes offices, refrigeration, and abattoir spaces
- Summersville Hospital Operating Room HVAC upgrade
- Princeton War Memorial; HVAC Upgrade
- HIMG Medical Center; 150,000 sf renovation including a new Endoscopy Suite
- Brickstreet Insurance Headquarters; 86,100 sf renovation including elevator upgrade
- Beckley PSD; 3 Water Storage Tanks; Sweeneyburg Water Treatment Plant
- Culloden PSD; Water Storage Tank
- Shops at Kanawha Plaza; extensive renovation and tenant fit-up project of 195,000 sf shopping center
- Huntington Museum of Art; HVAC Renovations
- First Bank of Charleston; New four story building
- Charleston Housing Authority; dedicated outside air unit replacement for Lee Terrace and Carroll Terrace
- Shawnee Sports Complex; Six multi-purpose fields and four baseball field complex with offices, concession stand and other amenities
- Charleston Housing Authority; boiler replacement and HVAC upgrade for Lee Terrace; Jarrett Terrace; Carroll Terrace; Switzer Center
- Clay County PSD; Water Storage Tank; Water Treatment Plant
- Upshur County Commission; Upshur County Courthouse Addition
- Putnam County Courthouse Complex; Sheriff's Office Building and the Main Courthouse Building HVAC upgrades
- Putnam County Schools; surveillance system design
- Willow I & II and Elk Village Senior Centers; Three new two-story senior apartment buildings
- Raleigh County Airport; Runway Lighting Upgrade
- Yeager Airport Construction Administration; Runway and Tarmac Repairs
- Huntington Housing Authority; New 50 Unit Apartment Building; Administration Building Renovations including elevator
- Maranatha Fellowship Church; New Annex Building
- State of West Virginia Bioterrorism Lab; Upgraded existing mechanical and electrical systems to Bioterrorism facility to current federal standards
- Tyler County Courthouse Additions/ Renovations
- Kellys Creek Bridge and Marmet Pony Truss Bridge Replacement
- WV Water Development Authority; New Facility
- WV Hygienic Lab; HVAC & Electrical Upgrades, including rabies, HIV, and TB laboratories
- WV Division of Motor Vehicles; Kanawha City
- Chief Medical Examiners Office Imaging Machine implementation

## PROFESSIONAL REGISTRATIONS

Professional Engineer:

West Virginia

## EDUCATION

Bachelor of Science

Mechanical Engineering

WV Institute of Technology

Bachelor of Science

Architectural Engineering Technology

Associates of Science

Mechanical Engineering Technology

Fairmont State College



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

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

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

## GOVERNMENT/COMMERCIAL PROJECT EXPERIENCE

- WVARNG Armory/Annex Bluefield
- WV Capitol Complex Central Bldg. #3 Renovations and Campus Central Boiler Plant
- Bruceton Bank
- Bank One
- Culture Center, WV State Capitol Complex
- Cuissets Residence
- Camp Dawson barrack/mess hall
- DOT Huntington District II Headquarters Renovations
- Yeager Airport Terminal Expansion/Renovation
- DOH Testing Lab
- GMC Assembly Plants in Lordstown OH, Janesville WI, Pontiac East MI, Bowling Green KY, Arlington TX
- Harrison County Bank
- IMC Office Bldg.
- Riverside High School Renovations
- Chief Medical Examiners Lodox CT Scanner Renovations
- Pocahontas County 911/EMS Center
- Kanawha County Commission, Judicial Annex Renovations
- Mercer County Courthouse
- Tyler County Courthouse Additions/Renovations
- Tyler County 911 Center - **NET ZERO**
- Appalachian Tire
- Laidley Towers
- Robinson Grand Performing Arts Theater
- USDA Forestry Building
- University of Charleston Innovation Center Additions/Renovations
- World Trade Center, MD
- William R. Sharpe, Jr. Hospital Additions/Renovations, WVDHHR
- WV Capitol Complex Bldg. #3 Central Boiler Plant Additions/Renovations
- Numerous K-12 School Renovations including Mercer, McDowell, Raleigh, Kanawha, Clay, Grant, Harrison, Marion, Pleasants, Pocahontas, Putnam, Summers, Tyler, Tucker, Upshur, Webster County Schools.



## PROFESSIONAL REGISTRATIONS

Professional Engineer:  
West Virginia

## EDUCATION

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

## PROFESSIONAL AFFILIATIONS

Member American Society  
of Mechanical Engineers

Member ASHRAE

## AWARDS AND RECOGNITIONS

1st Place 2023 ASHRAE  
Technology Award, Region VII



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

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

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

## PROJECT EXPERIENCE

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



## PROFESSIONAL REGISTRATIONS

Professional Engineer:  
West Virginia

## EDUCATION

VIT University  
Bachelor of Science  
in Mechanical Engineering

Southern Illinois University Edwardsville  
Master of Science  
in Mechanical Engineering

University of Cumberland  
Working on PhD in Project Management

## AWARDS AND RECOGNITIONS

Certified by ASHRAE in  
HVAC Design Essentials & Applications

1st Place 2023 ASHRAE  
Technology Award, Region VII

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



# Meher Meka, E.I.

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

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

## PERSONAL PROJECT EXPERIENCE

- WV Capitol Complex Renovations Bldg. #1, #3, #4, #5 and #7
- WVArNG Brushfork Armory Retrofit
- Belmont County Commission Coroner, Records & Health Dept. Facility
- Blennerhassett Island Dock Study
- CEA office
- Coney Island Hot Dogs Central kitchen
- C.R. Hipp Industrial Warehouse
- Eucalyptus Wellness Company
- High Wire Distillery
- Kanawha County Judicial Bldg.
- Kimley Horne Charleston Buildout
- HSGS Solar Office Space
- JW Aluminum Upfit office space
- J McLaughlin Upfit Retail Outlet
- Maple Street Office Building
- Mildred Mitchell Bateman Hospital
- North Fork Elementary Retrofit
- Northwood Middle School
- Raleigh County Schools 4 Schools Renovations
- Oglebay Wilson Lodge Renovations
- Pack Rat Storage Bees Ferry Road
- Pocahontas Co 911/EMS Facility
- Pendleton County Middle/High School Renovations
- Sherwin Williams
- Orange Theory fitness
- South State Bank Renovations
- St. Marys High School
- Steel City Pizza Cranes
- Stella Nova Cigar Factory
- Trimnal Mayers Law office
- Tyler County Middle/High School
- Tyler County 911 Center **Net Zero**
- Tyler County Courthouse Retrofit
- VA Hospital - Clarksburg
- VA Hospital - Huntington
- WVDOT - Servia Rest Area
- Airforce Base Clinic
- Canadian Consulate office
- JBL Harman office space
- West Union WWTP & WTP
- Riverside High School - **Energy Star**



## PROFESSIONAL REGISTRATIONS

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

## EDUCATION

UNC Charlotte  
Bachelor of Technology, Electrical and  
Electronics Engineering

Master of Science  
Electrical Engineering

## AWARDS AND RECOGNITIONS



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

# Billy Smith, BSME

Billy provides design, bidding, construction administration and Commissioning support for mechanical, plumbing, fire protection and electrical systems. His experience encompasses a broad range of Projects including, but not limited to Commercial, Government, Healthcare, Educational and Industrial facilities. Billy also has experience designing multiple building HVAC systems intended to meet high performance criteria, including one that will achieve net zero energy consumption. Knowledgeable with ASHRAE codes and Standards.

Experience includes 3D Scanning, high definition reality capture and Scan-to-BIM which is invaluable for renovation projects and to assist in the development of "Built" conditions in 3D space for Revit. Proficient in Revit, HVAC load programs and air side HVAC equipment selection. Experience in steam heating and distribution systems, hydronic piping/pumping, geothermal, commissioning, custom air handling unit design and HVAC equipment selection and specifications.

Billy is an active ASHRAE professional society member, serving in leadership roles and on committee chairs for the WV ASHRAE Chapter. He regularly participates in chapter activities and works to maintain an active continuing education towards today's standards, codes, and technology while working with college students as Student Activities Chair of ASHRAE.



## EDUCATION

West Virginia University  
Bachelor of Science  
in Mechanical Engineering

## PROJECT EXPERIENCE

- WV Capitol Complex Campus Bldg. #3, #4 Renovations
- Mildred Mitchell Bateman Hospital 3D Scanning/Design/Renovations
- Aurora Flight Sciences 3D scanning
- St. Marys High School Renovations
- North Fork Elementary Renovations
- Pendleton County Middle/High School Renovations
- Historical Tyler County Courthouse Additions/Renovations
- New Tyler County 911 Center
- Marshall University, Jomie Jazz Center, First Year Dorms
- Riverside High School HVAC Renovations including geothermal closed loop HVAC system designed to reduce HVAC Energy by 64% over previous system - *Energy Star*
- Kanawha County Judicial Building HVAC Renovations, Commissioning, & 3D scanning
- Oglebay Lodge Renovations 3D scanning/MEP Design
- Veteran Administration Clarksburg Hospital Mechanical-Electrical BIM
- Raleigh County Schools 4 Schools Renovations & 3D Scanning, commissioning for six schools.
- Pocahontas County 911/EMS Center
- Belmont County Coroner, Records, & Health Department
- Beckley & Bluestone Travel Plazas BIM Coordination
- Alcon Labs MEP BIM Coordination

## RECOGNITIONS

WVU Valedictorian Scholarship  
Promise Scholarship  
WVU Honors Program  
Presidential Scholarship  
WV Engineering,  
Science & Tech. Scholarship  
WVU Deans list:  
Fall 2016, Fall 2017, Spring 2018

## AFFILIATIONS

WV ASHRAE  
Committee Member  
Student Activities Chair





# anthony pitassi +

aia, ncarb, leed ap  
MANAGING PRINCIPAL

Tony has been with PWWG for 20+ years, and is a leader in the firm's practices in hospitality, adaptive reuse and renewal, and historic preservation for commercial, cultural, and non-profit clients. Tony leads every project—from concept studies to new construction--by aligning practical solutions, sound project management, and exemplary design and detailing, with the values of stakeholders and clients. He is recognized for clear communication and uncommon skill facilitating creative dialogue between clients, consultants, architectural partners, and contractors, throughout design and construction. Tony has managed many projects to successful completion with LEED, Universal and Inclusive Design, WELL, and 2030 standards of sustainability, and contributed to establishing the groundbreaking isUD standard for museums. His projects as Principal-in-Charge have won awards from local and national chapters of the AIA and major design entities, and been featured in regional and international publications covering architecture, interiors, and hotel design.

**JOINED PWWG**  
1998

**EDUCATION**  
Bachelor of Architecture,  
Kent State University, 1989

BA Architectural Studies,  
University of Pittsburgh, 1986

**REGISTRATION**  
Architect in PA, OH,  
WV, KY & MO

**PROFESSIONAL ASSOCIATIONS**  
American Institute of  
Architects (AIA) Member

LEED Accredited Professional

Green Building  
Council Institute

NCARB Certificate Holder

**PROJECT EXPERIENCE**

**West Virginia State Capitol Office Building 4 Renovation**, Charleston, WV—third project on the capitol campus renovates site, exterior, and interior of a 1950s office building; updates to layout, systems and finishes address life safety and accessibility, and preserve mid-century architectural character. 96,000 sf. *Principal-In-Charge*

**21c Museum Hotel Cincinnati**, Cincinnati, OH—Rehab and transformation of a historic downtown hotel for an innovative hybrid art museum and 156-room boutique hotel with galleries, a signature restaurant, meeting and event spaces; earned Historic Tax Credit funding. 159,000 sf. *Project Manager*

**21c Museum Hotel St. Louis**, St. Louis, MO—Rehab and transformation of the 10-story historic YMCA building in downtown for an innovative hybrid art museum and 170-room boutique hotel with galleries, a signature restaurant, and event spaces; earned Historic Tax Credit funding. 163,500 sf. *Principal-In-Charge / Project Manager*

**21c Museum Hotel Lexington**, Lexington, KY—Rehab and transformation of a 15-story historic bank and department store in downtown for an innovative hybrid art museum and 88-room boutique hotel with galleries, a signature restaurant, and event spaces; earned Historic Tax Credit funding. 103,500 sf. *Project Manager*

**Cincinnati Music Hall Exterior and Interior Revitalization**, Cincinnati, OH—PWWG helped secure \$25M in catalyst funding then led restoration and modernization of one of the world's most architecturally acclaimed historic multi-function venues; project reconfigured performance space, added amenities, and created two floors of flexible office space and six event spaces; use of Lean Construction delivered highest design, schedule and building performance outcomes. 307,600 sf. *Masonry Restoration Specialist*

**Gwynn Building Renewal & Reuse**, Cincinnati, OH—For a repeat client, rehab and transformation of a historic 13-story Beaux Arts office building for an upscale hotel with signature restaurant, meeting and event spaces; the project, in the downtown Main Street Historic District, will have historic tax credit funding and target LEED Certification. 154,000 sf. *Principal-In-Charge*

**Steamfitters Local Union #449 Technology Center**, Jackson Township, PA—Phase 1 provides high bay labs and classrooms for state-of-the-art workforce training. 75,000 sf. *Project Manager*

## key personnel +



# Joseph Filar +

Joe Filar, LEED AP  
SENIOR ASSOCIATE

Joe began his professional career working in New York City. He moved back to Pittsburgh in 1999, joined Perfido Weiskopf Architects as an intern architect, and became an associate of the firm in July 2003. Joe has a broad range of design and contract management experience and experience as a Project Manager on higher education, market rate and subsidized housing, corporate offices, and historic rehabilitation of landmarks buildings. Several of his projects have received awards from the Pittsburgh and Pennsylvania chapters of the AIA.

### PROJECT EXPERIENCE

**West Virginia State Capitol Office Building 4 Renovation**, Charleston, WV—third project on the capitol campus renovates site, exterior, and interior of a 1950s office building; updates to layout, systems and finishes address life safety and accessibility, and preserve mid-century architectural character. 96,000 sf. *Project Manager*

**WV State Capitol Complex Building 3 Restoration and Reuse**, Charleston, WV—Comprehensive masonry envelope and tile roof restoration and interior redesign of a historic building for contemporary office space, with flexible layouts, updated systems and AV/IT, new amenities and FF&E. 165,000 sf. *Project Manager*

**Oglebay Hall Rehab & Transformation and Ming Hsieh Hall Addition**, West Virginia University, Morgantown, WV—Salvage and transformation of a vacant historic classroom building for labs, classrooms and offices, and addition with tech intensive lecture halls; the ensemble supports interdisciplinary STEM learning; Oglebay masonry envelope and roof rehab, new pedestrian bridge, outdoor terrace, and rooftop parking at Ming Hsieh; both buildings are LEED Certified. Oglebay Hall Reuse— 50,000 sf; Ming Hsieh Hall Addition – 16,000 sf. *Project Architect*

**Pittsburgh International Airport Elevators**, Pittsburgh, PA—addition of private/public elevators in the airside terminal. *Project Manager*

**Union Trust Building Transformation**, Pittsburgh, PA—Comprehensive interior rehab and transformation of a historic 11-story shopping arcade in downtown for new Class-A office space, co-working space, ground floor commercial, and new underground parking; LEED Certifications—BD+C, Core and Shell-v3, O+M, Existing Buildings-v2. 517,000 sf. *Project Manager*

**21c Museum Hotel Durham**, Durham, NC—Rehab and transformation of the historic 17-story Hill Building in downtown for an innovative hybrid art museum and 125-room boutique hotel with galleries, a signature restaurant, and event spaces; earned Historic Tax Credit funding. 134,000 sf. *Project Manager*

**Eighth & Penn Apartments**, Pittsburgh, PA—Rehab of two historic high-rise buildings and design of two contemporary ones for an ensemble of 135 market rate rental apartments in the Cultural District. Street level commercial wraps around the building; earned Historic Tax Credit funding. 190,000 sf. *Project Manager*

### JOINED PWWG 1999

**EDUCATION**  
Bachelor of Architecture,  
Pennsylvania State University,  
1995

Sede di Roma Foreign Studies  
Program, 1993

**REGISTRATION**  
Architect in PA

**PROFESSIONAL  
ASSOCIATIONS**  
LEED Accredited Professional

National Historic Trust  
Pittsburgh History &  
Landmarks Foundation

PERFIDO  
WEISKOPF  
WAGSTAFF +  
GOETTEL

## key personnel +



## Joseph Roy +

aia

ASSOCIATE

Since joining PWWG in 2021, Joe has demonstrated his natural ability to work on a range of tasks simultaneously, as a team member on projects for market rate housing, a private gallery and residence, and a mixed-use commercial addition. His prior experience in NYC and Boston spanned building renovations, new construction, and interiors, with responsibilities for design and detailing for large scale affordable housing, a high-end apartment, and historic rowhouses.

### PROJECT EXPERIENCE

**West Virginia State Capitol Office Building Four Renovation**, Charleston, WV—PWWG's third project on the capitol campus renovates site, exterior, and interior of a 1950s office building; updates to layout, systems and finishes address life safety and accessibility, and preserve mid-century architectural character. 96,000 sf. *Team Member*

**Allegheny Branch House Lofts Renewal & Reuse**, Pittsburgh, PA—For a repeat client, conversion of a landmark four-story heavy timber and masonry industrial building for 36 unique apartments. Design incorporates distinctive existing architectural elements and resolves difficult parking and access on the dense urban site. 47,000 sf. *Project Manager*

**Garden Theater Block Apartments**, Pittsburgh, PA—New five-story building anchoring a prominent corner in a historic neighborhood; 50 market rate apartments with parking nearby, and first floor commercial space. Includes renovation of two historic townhouses into nine apartments. 50,000 sf. *Project Architect*

**Gwynn Building Renewal & Reuse**, Cincinnati, OH—For a repeat client, rehab and transformation of a historic 13-story Beaux Arts office building for an upscale hotel with signature restaurant, meeting and event spaces; the project, in the downtown Main Street Historic District, will have historic tax credit funding and target LEED Certification. 154,000 sf. *Team Member*

**Letsche School Apartments & Townhomes**, Pittsburgh, PA—Adaptive reuse of 2 vacant public school buildings on the National Register, plus 4 new townhomes will create much-needed mixed-income housing (82% Affordable) and contribute to revitalization of the historic Hill District. Substantial interior renovation preserves essential architectural elements, while adding modern amenities and a community space; LIHTC funding. 53,000 sf (reno) + 6,700 sf (townhomes). *Team Member*

### JOINED PWWG 2021

### EDUCATION

Bachelor of Architecture,  
Certificate in  
Classical Architecture,  
University of Miami

### REGISTRATION

Architect in NY

### PROFESSIONAL ASSOCIATIONS

American Institute of  
Architects (AIA) Member

PERFIDO

WEISKOPF

WAGSTAFF +

GOETTEL

## key personnel +



### jan irvin + aia, leed ap SENIOR ASSOCIATE

Jan has 30+ years of experience as a successful planner, designer, and senior project manager for education and multi-family housing, renovations, and adaptive reuse. He has focused throughout his career on exploring the connections between design, constructability, and durability. Jan combines these interests, and his ongoing study of sustainable design and preservation, and emerging building technologies, to writing specifications for PWWG's multi-million dollar projects for academic, commercial, and non-profit clients. Jan enriches PWWG firm culture with workshops for staff and local architects on construction, and he develops and implements many of the firm's quality control initiatives.

#### PROJECT EXPERIENCE

**WV State Capitol Complex Elevator Upgrades and Modernizations**, Charleston, WV—Upgrades to 19 elevators in 11 buildings at the Capitol, several on the National Register of Historic Places. *Initial Study Author*

**West Virginia Capitol Complex Building Four Renovation**, Charleston, WV—third project on the capitol campus renovates site, exterior, and interior of a 1950s office building; updates to layout, systems and finishes address life safety and accessibility, and preserve mid-century architectural character. 96,000 sf. *Specifications / Project Support*

**WV State Capitol Complex Building 3 Restoration and Reuse**, Charleston, WV—Comprehensive masonry envelope and tile roof restoration and interior redesign of a historic building for contemporary office space, with flexible layouts, updated systems and AV/IT, new amenities and FF&E. 165,000 sf. *Specifications / Project Support*

**Union Trust Building Transformation**, Pittsburgh, PA—Comprehensive interior rehab and transformation of a historic 11-story shopping arcade in downtown for new Class-A office space, co-working space, ground floor commercial, and new underground parking; LEED Certifications—BD+C, Core and Shell-v3, O+M, Existing Buildings-v2. 517,000 sf. *Specifications / Project Support*

**Cincinnati Music Hall Exterior and Interior Revitalization**, Cincinnati, OH—PWWG helped secure \$25M in catalyst funding then led restoration and modernization of one of the world's most architecturally acclaimed historic multi-function venues; project reconfigured performance space, added amenities, and created two floors of flexible office space and six event spaces; use of Lean Construction delivered highest design, schedule and building performance outcomes. 307,600 sf. *Project Manager / Architect*

**21c Museum Hotel St. Louis**, St. Louis, MO—Rehab and transformation of the 10-story historic YMCA building in downtown for an innovative hybrid art museum and 170-room boutique hotel with galleries, a signature restaurant, and event spaces; earned Historic Tax Credit funding. 163,500 sf. *Specifications / Project Support*

**21c Museum Hotel Durham**, Durham, NC—Rehab and transformation of the historic 17-story Hill Building in downtown for an innovative hybrid art museum and 125-room boutique hotel with galleries, a signature restaurant, and event spaces; earned Historic Tax Credit funding. 134,000 sf. *Specifications / Project Support*

**21c Museum Hotel Lexington**, Lexington, KY—Rehab and transformation of a 15-story historic bank and department store in downtown for an innovative hybrid art museum and 88-room boutique hotel with galleries, a signature restaurant, and event spaces; earned Historic Tax Credit funding. 103,500 sf. *Specifications / Project Support*

#### JOINED PWWG 2003

**EDUCATION**  
Masters of Arts, Pittsburgh  
Theological Seminary, 1996

Bachelor of Architecture,  
Kent State University, 1980

**REGISTRATION**  
Architect in PA

**PROFESSIONAL  
ASSOCIATIONS**  
American Institute of  
Architects (AIA) Member

LEED Accredited Professional

PERFIDO  
WEISKOPF  
WAGSTAFF +  
GOETTEL



## PERSONAL SUMMARY

Mr. Taylor has a wide range of projects with a major emphasis in medical facilities of all types and sizes, historical buildings, transportation and parking facilities, residence halls and educational buildings at major institutions of higher learning, and commercial facilities. His work includes cast-in-place concrete, post-tensioned concrete, and conventional steel framing systems. Not only does he engage the rest of the design team and the owner to provide creative, economic, and sustainable structural solutions, but he guides his team through a hands-on approach. He is involved in daily project supervision, project scheduling, team and client communications, and design oversight. He routinely conducts progress and coordination meetings on projects in progress, keeping in mind the needs and goals of his clientele.

## REFERENCES

**Apostolos (Paul) T. Nacopoulos**  
Senior Program Manager  
Allegheny Health Network  
814.452.7398  
apostolos.nacopoulos@AHN.org

**Brian V. Iavarone**  
Director of Facilities and Construction  
UPMC Hamot  
814.877.6318  
iavaronebv@upmc.edu

**Erin Shaffer, PE**  
Construction Coordinator  
Meadville Medical Center  
814.473.3494  
eshaffer@mmchs.org

## EDUCATION

Bachelor of Architectural Engineering  
*Pennsylvania State University, 2000*  
Master of Architectural Engineering  
*Pennsylvania State University, 2000*

## PROFESSIONAL REGISTRATIONS

Licensed Professional Engineer in:

Arizona, Colorado, Florida, Georgia, Kentucky, Maryland, Mississippi, Montana, Nebraska, New York, North Carolina, Ohio, Pennsylvania, Tennessee, and West Virginia

## PROFESSIONAL MEMBERSHIPS

American Institute of Steel Construction

## EXPERIENCE

Mr. Taylor has served as a Principal for a wide variety of projects including facility studies, new construction and renovations, building additions, and structural condition assessments throughout the United States.

Mr. Taylor's experience includes work for many different project types, including designing entire new structures; rehabilitating historic structures; facility expansions, additions, and department upgrades; and providing structural solutions for equipment including installations and retrofitting.

Recent projects designed by Mr. Taylor have reached construction costs as large as \$280 million. His daily responsibilities include attending design and development meetings, supervising the production of construction documents, reviewing shop drawings, issuing revision sketches, attending site visits and construction meetings, and completing site visit and structural assessment reports.

## FEATURED PROJECTS

### Data Center, 35 Summit Drive | Pittsburgh, PA

AES completed the structural design for a two-story addition to an existing data center to increase server capacity. The addition included chillers, pumps, electrical switchgear, transformers, and data racks on interior slabs and elevated structures, with provisions for a future third floor. An exterior yard was developed to house cooling towers, generators, and a 30,000-gallon water tank, surrounded by 24-foot-tall masonry and steel screen walls. Additionally, a 36,000-gallon concrete water storage tank was installed under the building.

### UPMC Hamot – Hot/Chilled Water Plant Upgrades | Erie, PA

This project upgraded the hot and chilled water systems for the entire UPMC Hamot campus over several years due to phasing requirements. New cooling towers, each weighing over 60,000 pounds, were installed on the roof of an existing building. During the study phase, it was found that the building lacked seismic provisions. An analysis of the building's gravity and lateral load systems led to modifications, including supplemental foundations, reinforced columns and beams, and eccentrically braced steel frames. Additional equipment installed included chillers, gas-fired boilers, pumps, and piping.

## PATRICK J. ALLEN <sup>PE</sup>

SENIOR PROJECT ENGINEER



### EDUCATION

Bachelor of Architectural Engineering  
*Pennsylvania State University, 2013*  
Master of Architectural Engineering  
*Pennsylvania State University, 2013*

### PROFESSIONAL REGISTRATIONS

Licensed Professional Engineer in Pennsylvania

### EXPERIENCE

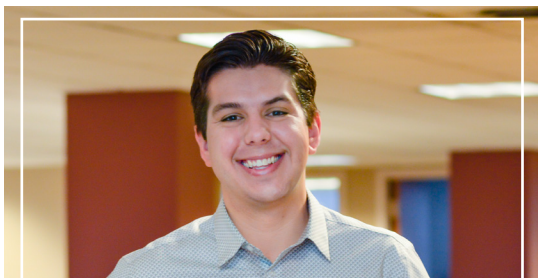
Mr. Allen has been consulting on structures since 2016. He has since served on a wide variety of projects including concrete rehabilitation, new construction, adaptive reuse, unmanned aerial surveying, façade rehabilitation, and structural condition surveys and assessments. His repertoire includes medical, commercial, K-12 and higher education, multi-family residences, retail, hospitality, data centers, public use, and public and private parking facilities.

His most notable work includes the adaptive reuse of the 70,000-square-foot Station Square Freight House in Pittsburgh, Pennsylvania; the design, rehabilitation, and repairs for nearly a dozen garages for the same client over the past three years; the design and construction of the 15,000-square-foot Bob O'Connor Clubhouse in Pittsburgh, Pennsylvania; and the re purposing of a parking facility into two data centers at Nova Place in Pittsburgh, Pennsylvania.

Mr. Allen's engineering expertise spans many industries, having providing structural solutions for hundreds of projects across the east coast. He has completed work on a wide variety of concrete structures involving conventionally reinforced, post-tensioned, prestressed, and precast concrete structural systems. He is adept at providing solutions both for new construction as well as for repairs. In addition to concrete design, Mr. Allen regularly applies his extensive knowledge for facade reviews and structural inspections.

## ALEC J. BRONISZEWSKI <sup>PE</sup>

STAFF ENGINEER



### EDUCATION

Bachelor of Architectural Engineering  
*Pennsylvania State University, 2017*  
Master of Architectural Engineering  
*Pennsylvania State University, 2017*

### PROFESSIONAL REGISTRATIONS

Licensed Professional Engineer in Pennsylvania

### EXPERIENCE

Mr. Broniszewski is a skilled and experienced staff engineer with over seven years of experience in the consultation of warehouse, light industrial, healthcare, commercial, and other related projects. He has a proven ability to work both independently and as part of a team to deliver high-quality, safe, and compliant structures. His strong technical skills and attention to detail have bolstered the ability of our design team to support A/E/C teams for projects reaching construction values of \$250M.

Mr. Broniszewski works with architects, engineers, and contractors to ensure that projects meet all design and safety requirements, managing multiple projects simultaneously and meeting all deadlines. He has performed work on both new and existing facilities, and is adept at supporting projects involving reinforced concrete, post-tensioned reinforcement, masonry, and steel.

Mr. Broniszewski has developed a unique role at AES, having been here for more than 6 years. Supporting projects for both new and existing structures, as well as performing a wide variety of structural services, he proactively supports his design team and the other consultants working hard to bring your architectural visions to life. He listens and suggest optimal design solutions and ideas from schematics to the project close-out, becoming an advocate of your goals while keeping an eye on time and budget constraints that have been established.

# morgan kronk

## PRINCIPAL COST ESTIMATOR

Morgan Kronk has developed cost estimates for PWWG for 30+ projects totaling more than \$50M in construction costs. He has over 35 years of commercial construction experience and has been beneficial to both architects and owners in understanding their costs and supporting their projects throughout construction. As an owner's representative, cost estimator or construction consultant and manager, he brings tangible value to projects.

### PROJECT EXPERIENCE WITH PWWG

4700 Fifth Avenue, Carnegie Mellon University, Pittsburgh, PA

Pedestrian Bridge, Western Pennsylvania School for Blind Children, Pittsburgh, PA

Margaret Morrison Renovations, Carnegie Mellon University, Pittsburgh, PA

Margaret Morrison Elevator Addition, Carnegie Mellon University, Pittsburgh, PA

Palumbo Science Center, LaRoche University, Pittsburgh, PA

SEI Space Study, Carnegie Mellon University, Pittsburgh, PA

STEM Study, WVU Potomac State College Keyser, WV

Crawford County Courthouse Planning, Meadville, PA

Old Economy Village Rehabilitation and Upgrades of Historic Buildings, Ambridge, PA

The Garden Room at the National Aviary, Pittsburgh, PA

President's House Study, Carnegie Mellon University, Pittsburgh, PA

Campbell Hall 4th Floor, West Liberty University, West Liberty, WV

Manchester School Window Replacement, Pittsburgh Public Schools, Pittsburgh, PA

Downtown Campus Library Gallery and Atrium Study, West Virginia University, Morgantown, PA

West Virginia Building 4, Charleston, WV

Frame Gallery Bathroom, Carnegie Mellon University, Pittsburgh, PA

William Pitt Union Porch Repairs, University of Pittsburgh, Pittsburgh, PA

National Aviary Masterplan Refinement, Pittsburgh, PA

Warner Hall Study, Carnegie Mellon University, Pittsburgh, PA

21c Museum Hotel Lexington, Lexington, KY

Child Development Center, West Virginia University, Parkersburg, WV

Cambell Hall, West Liberty University - West Liberty, WV

Historic Shaw Hall Study and Renovation, West Liberty University, West Liberty, WV

Glen Hazel High Rise, Housing Authority of Pittsburgh, Pittsburgh, PA

Vermeire Manor Phase II, Sharon, PA

### PROFESSIONAL ASSOCIATIONS

Morgan has taught Construction Estimating at community colleges throughout the Pittsburgh region

Rebecca Residence, Board of Directors (Secretary, Executive Committee)

American Institute of Architects (Affiliate Member)

Building Officials & Code Administrators (Affiliate Member)

Pro Bono Estimating and Consulting for the Community Design Center of Pittsburgh



**MORGAN**

PROPERTY &  
CONSTRUCTION  
CONSULTANTS

## **FIRM BACKGROUND**

PRINCIPAL: Morgan P. Kronk, President  
YEARS IN BUSINESS: Established in 2001  
OFFICE LOCATIONS: Robinson Township, Pennsylvania (1 location)  
NUMBER OF PERSONNEL: 5 Personnel  
ASSETS: Computers, printers, scanners, large format printers, applicable construction software programs

## **CONTACT INFORMATION**

PHYSICAL ADDRESS: 2403 Helen Street, Robinson Township, PA 15136  
MAILING ADDRESS: P.O. Box 15540, Pittsburgh, PA 15244  
PHONE: 412-787-0720  
FAX: 412-787-0730  
EMAIL: morgan@mpcci.net  
MOBILE PHONE: 412-977-6735

## **PRE-CONSTRUCTION & CONSTRUCTION PERIOD SERVICES**

Cost Estimating	Value Engineering
Inspection	Facility Assessments
Cost Consulting	Administration / Management
Owner's Representative	

## **MORGAN P. KRONK - PRINCIPAL**



Morgan brings over 45 years of professional construction management, administrative skills, and experience to the leadership of his firm. His primary priority is to provide his clients with realistic, practical, and valuable tools, empowering them with knowledge and in-depth understanding to execute their desired construction goals. He specifically has expertise in construction management, cost estimating, and consulting, which he uses to communicate with his clients about cost savings and feasible alternative solutions and avoid costly delays and unforeseen expenses. Morgan works to be his client's best asset during the pre-construction and construction process to add value to the overall project management of your project.



# RESUMES

## Jay Santos, PE

PRINCIPAL

### EDUCATION

University of Florida  
Master of Science  
Bachelor of Science  
Mechanical I Engineering

### REGISTRATIONS

Professional Engineer, MD, OH

A recognized expert with a preeminent record of conceiving and implementing innovative, energy and cost-efficient designs in the fields of DDC Controls, Building Controls Master Planning, and Building Automation Systems (BAS), Jay is also a renowned lecturer, educator, and author.

Jay's specialties include originating and developing detailed Building Control Master Planning utilizing standardized approaches to sequences, documentation, and specifications; originating controls designs utilizing his expertise in controls analysis, trouble-shooting, and energy concerns; quantifying existing building control systems and offering recommendations detailing cost, energy savings, and operational impact; developing BAS User Guides covering interoperability concerns, architecture, hardware and software issues, and assisting owners and engineers in designing and selecting systems to best meet their BAS needs.

As Principal, Jay oversees review processes and identifies commissioning, retro-commissioning, and energy-conservation strategies based on his in-depth knowledge of the commissioning process and building optimization, supervises numerous commissioning projects, manages the implementation of PACRAT™ (fault detection & diagnostic software) and provides technical support, and oversees contract administration and project quality control/quality assurance. Jay teaches commissioning and DDC controls classes and conducts on-site training programs, provides technical training and consulting, and presents speeches and papers on commissioning, controls, and HVAC diagnostics.

### RELEVANT EXPERIENCE

#### Anne Arundel County Public Schools, Annapolis, MD

*Principal for the commissioning of 12 different replacement K-12 schools in the County including Lothian Elementary School and Annapolis High School.*

#### Baltimore County Public Schools, Baltimore, MD

*Principal for the commissioning of seven different replacement K-12 schools in the County including Victory Villa Elementary School, Lutherville Elementary School and Lansdowne Elementary School.*

#### Howard County Public Schools, Columbia, MD

#### Anne Arundel Schools, Annapolis, MD

*Principal for the commissioning of four different replacement K-12 schools in the County including Glenwood Middle School, Deep Run Elementary School and Mount Hebron High School.*



# COMMISSIONING TEAM

## David Rush, PE

SENIOR MECHANICAL ENGINEER

### EDUCATION

University of Maryland,  
College Park  
Masters of Science  
Systems Engineering

University of Maryland,  
College Park  
Bachelor of Science  
Computer Science

Lehigh University  
Bachelor of Science  
Mechanical Engineering

### REGISTRATIONS

Professional Engineer, MD

Since 2005, David Rush has served as a Project Manager / Senior Mechanical Engineer with the Facility Dynamics Engineering team on multiple projects throughout the Baltimore/Washington corridor. His focus has been on educational institutions extending from K-12, higher education facilities including science buildings, cancer research, and laboratories.

He brings 45 years of experience in Facilities Management/Engineering and Controls Engineering to every project along with a dedicated attention to detail and fiscal project approach. As a former steward of public monies in his role as a Senior Mechanical Engineer for the UMCP Department of Facilities Management, he values where dollars are spent on projects and understands the importance of doing every task with purpose and intent.

David has performed Analysis and Remedial Engineering of building HVAC and control systems for clients to determine if the systems are operating properly and complying with industry standards & local/national codes. He also assists colleagues with drawings, shop drawing review, field surveys and field testing as needed.

### RELEVANT EXPERIENCE

#### Anne Arundel Severn Intergenerational Center

*David worked with a local architect for the Anne Arundel Intergenerational Center. The project is a \$13 million community investment where the 27,000 SF complex will house the Boys and Girls Club, a senior center, a regulation size gymnasium with food pantry and classrooms. Construction was completed in the fall of 2021.*  
Severn, MD

#### Community College of Baltimore County, STEM Building Addition & Renovation, Baltimore, MD

*The STEM Building involves the renovation/conversion of a library building and the addition of a new wing resulting in a new 99,715 sf state-of-the-art facility with an expansive atrium lobby, 12 flexible laboratories, 6 classrooms, a large lecture hall with fixed seating, a planetarium with seating for 72, faculty suites, study areas and student support space.*



# COMMISSIONING TEAM

## Scott Stoutenborough, PE

SENIOR MECHANICAL ENGINEER

### EDUCATION

University of Cincinnati  
Bachelor of Science  
Mechanical Engineering

### REGISTRATIONS

Professional Engineer, MD

Scott Stoutenborough brings a thorough and comprehensive understanding of meeting a client's project goals. Scott is a confident and experienced commissioning agent and project manager for clients of all types and projects of all sizes as he sets the standards and expectations early in the project. He believes that it is paramount to keep the owner and the client apprised of status updates, construction issues and schedule demands to ensure a honest and informed commissioning process. This remains a critical aspect of his project's balanced budgets particularly with projects of sensitive nature or very advanced and complicated systems.

Scott leads the engineering and the management of projects including: commissioning, retro-commissioning, controls design, system diagnostics and design review. Scott routinely reviews construction documents, develops and writes commissioning plans and specifications, performs submittal reviews and functional testing compiles all findings and recommendations into the final commissioning reports.

### RELEVANT EXPERIENCE

#### Howard County Circuit Court

*The 238,000 SF facility was completed through a public-private partnership, the first for Howard County. Bob provided security commissioning to resolve many deficiencies and safety challenges from the existing Courthouse, which was built 175 years ago.*

Howard County, MD

#### Montgomery County, Multiple Projects

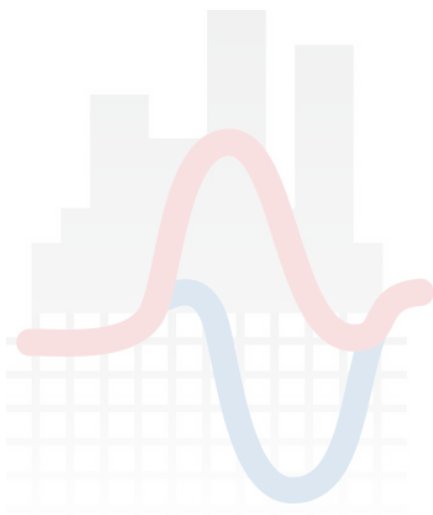
*Scott served as the Project Manager for the newly expanded and renovated Judicial Center and Annex. The project received LEED Gold certification from the USGBC. Additionally, he also led the commissioning efforts for the Public Safety Training Academy and multiple other projects in the county.*

Montgomery County, MD

#### National Institutes of Health, Multiple Projects

*Scott has led multiple projects for the NIH including projects at Building 13, 29A, 10, 14D, 31 and the Child Care Center. Many of the projects began in the design stages and have gone on to include extended commissioning services due to the sensitive facilities. Facility Dynamics has worked with NIH in many capacities and also authored the specifications for commissioning for all of their facilities.*

Various Locations



# SECTION V.

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## References



## **ZDS Design/Consulting Services References**

**Mike Pickens**, Executive Dir., National Council for School Facilities: (304) 400-9993.

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

**Ron Adkins**, Director of Construction, Maintenance and Contract Management, Office of Shared Administration, Operation WV DHHR: 304-558-0234, Ron.Adkins@wv.gov for multiple DHHR facilities and 130th Airlift Wing at Yeager Airport for WVARNG Phase I & II

**Chuck Smith**, Director, Kanawha County Schools & Kanawha County Commission: (304) 348-6148. dcsmith@mail.kana.k12.wv.us Many Projects including Riverside High, Ben Franklin Career Ctr.

## **PWWG References**

**Kevin Halaja**, Deputy Director of Operations, County of Allegheny, 412-350-3781, Kevin.Halaja@AlleghenyCounty.us

**Bob Reppe**, Sr. Director of Planning & Design, Carnegie Mellon University, 412-268-5259, breppe@andrew.cmu.edu

**Scott Casdorff, PE**, Arch. & Engineering Manager, WV General Service Division Architectural and Engineering, (304) 957-7145, Scot.R.Casdorff@WV.gov

## **AES References**

**Apostolos (Paul) T. Nacopoulos**, Senior Program Manager Allegheny Health Network 814.452.7398, apostolos.nacopoulos@AHN.org

**Brian V. Iavarone**, Director of Facilities and Construction UPMC Hamot 814.877.6318, iavaronebv@upmc.edu

**Ronald Mattocks** Construction Coordinator Meadville Medical Center, 814.333.5000, rmattocks@mmchs.org

## **FDE References**

**Randall Hawkins**, Senior Architect Montgomery County Government, 240-777-9926, randall.hawkins@montgomerycountymd.gov

**Ari Lessani**, O'Connell and Lawrence, 301-924-4570, ari.lessani@oclinc.com

**Rick Jones**, Anne Arundel County Public Schools, 410-858-0546, rejones@aacps.org

# SECTION VI.

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## Attachments

State of WV Centralized  
Expression of Interest  
Addendum Acknowledgment Form





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

State of West Virginia  
 Centralized Expression of Interest  
 Architect/Engr

<b>Proc Folder:</b> 1442555		<b>Reason for Modification:</b>	
<b>Doc Description:</b> Building 1 Hydronic Boilers Upgrades Project			
<b>Proc Type:</b> Central Contract - Fixed Amt			
<b>Date Issued</b>	<b>Solicitation Closes</b>	<b>Solicitation No</b>	<b>Version</b>
2024-06-13	2024-07-02 13:30	CEOI 0211 GSD2400000009	1

**BID RECEIVING LOCATION**

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

**VENDOR**

**Vendor Customer Code:**  
**Vendor Name :** ZDS Limited Liability Company dba ZDS Design/Consulting Services  
**Address :**  
**Street :** 135 Corporate Center Drive, Suite 532  
**City :** Scott Depot  
**State :** WV **Country :** USA **Zip :** 25560  
**Principal Contact :** Todd A. Zachwieja, CEO, Principal  
**Vendor Contact Phone:** (304) 755-0075 **Extension:** 1001



**FOR INFORMATION CONTACT THE BUYER**

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

**Vendor Signature X** *Todd A. Zachwieja* **FEIN#** 550735995 **DATE** July 2, 2024

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

**ADDITIONAL INFORMATION**

Expression of Interest (CEOI)

The Acquisitions and Contract Administration Section of the Purchasing Division ("Purchasing Division") is soliciting Expression(s) of Interest ("EOI" or "Bids") for WV Department of Administration, General Services Division ("Agency"), from qualified firms to provide Architectural/Engineering services ("Vendors") for the following tasks for Building 1 (WV State Capitol), the Agency's owned and operated facility located in Charleston at 1900 Kanawha Boulevard East, Charleston, WV 25305. Vendor shall provide design services for construction bidding documents and construction administration for a Building 1 hydronic boiler system and an upgrade of all air-side components required to support high efficiency operation of a hot water heating distribution system per the bid requirements, specifications and terms and conditions as attached hereto.

INVOICE TO	SHIP TO
DEPARTMENT OF ADMINISTRATION GENERAL SERVICES DIVISION 103 MICHIGAN AVENUE CHARLESTON WV 25305 US	DEPARTMENT OF ADMINISTRATION GENERAL SERVICES DIVISION BLDG 1 1900 KANAWHA BLVD E CHARLESTON WV 25305 US

Line	Comm Ln Desc	Qty	Unit Issue
1	Architectural engineering		

Comm Code	Manufacturer	Specification	Model #
81101508			

**Extended Description:**  
Building 1 Hydronic Boilers Upgrades Project

**SCHEDULE OF EVENTS**

Line	Event	Event Date
1	Vendor question deadline @ 12:00 PM	2024-06-25

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

(Printed Name and Title) Todd A. (Ted) Zachwieja, CEO, Principal

(Address) 135 Corporate Center Drive, Suite 532, Scott Depot, WV 25560

(Phone Number) / (Fax Number) (304) 550-0075, (304) 550-0076

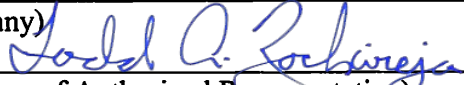
(email address) todd.zachwieja@zdsdesign.com

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

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

ZDS Design/Consulting Services

(Company) \_\_\_\_\_

(Signature of Authorized Representative) 

Todd A. Zachwieja, CEO, Principal

(Printed Name and Title of Authorized Representative) (Date) \_\_\_\_\_

(304) 755-0075, (304) 755-0076

(Phone Number) (Fax Number) \_\_\_\_\_

todd.zachwieja@zdsdesign.com

(Email Address) \_\_\_\_\_