

# ZDS DESIGN/CONSULTING SERVICES

91 Smiley Drive  
St. Albans, WV 25177

Phone: (304) 755-0075  
Fax: (304) 755-0076

**DATE: October 20, 2010**

**TO: Roberta Wagner-File 22**  
**Department of Administration**  
**Purchasing Division, Building 15**  
**2019 Washington Street**  
**Charleston, WV 25305-0130**

**EOI NO: HHR11047**  
**PROJECT: A & E Services for Capital Improvements for Six Hospitals**

Qty:	Doc. No.	Doc. Date	Description	Action Code
6		10-21-10	EOI Information to provide Architectural/Engineering Services for Six Hospitals	J1-A
<b>Action Codes</b>				
<b>A - Action indicated on item transmitted</b>			<b>F - Furnish as corrected--Resubmittal required</b>	
<b>B - For your information or use</b>			<b>G - Revise and resubmit</b>	
<b>C - For signature and return to this office</b>			<b>H - Rejected</b>	
<b>D - Furnish as submitted</b>			<b>I - For your approval</b>	
<b>E - Furnish as corrected--Resubmittal not required</b>				

**J - Remarks:**

**1. EOI for opening date: 10-21-10 @ 1:30 pm. The team appreciates your consideration and looks forward to hearing from you.**

BY: Patricia Hart

Mailed by ☐ UPS Next Day Air ☐ UPS Ground ☐ USA Priority Mail ☐ USA Mail  
☐ Hand Delivery ☐ Hand Pick Up

G:\ZDS MARKETING\RFQ\Health Care\6 Hospitals 10-21-10\10-21-10 HHR11047 EOI.doc

## TRANSMITTAL LETTER

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2010 OCT 21 AM 8:16

WV PURCHASING  
DIVISION

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Request for Quotation HHR11047

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**ZDS** Design/Consulting Services

Paradigm Architecture

Historic Preservation Consultant, Inc.

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**ZDS** Design/Consulting Service

Paradigm Architecture

Historic Preservation Consultant, Inc.

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**ZDS** Design/Consulting Services

Paradigm Architecture

Historic Preservation Consultant, Inc.

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### **CONFIDENTIAL**

This qualification proposal contains information confidential and proprietary to **ZDS Design/Consulting Services** and is provided for your internal review only. No other distribution, reproduction, or description of its contents is authorized without the prior written approval of **ZDS**.

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**ZDS**

Design/Consulting Services

MECHANICAL . ELECTRICAL . INDOOR AIR QUALITY . ENERGY . COMMISSIONING

91 Smiley Drive

St. Albans, WV 25177

Phone: 304-755-0075

Fax: 304-755-0076

Email: ZDSDesign@aol.com

October 18, 2010

Department of Administration  
Purchasing Division, Building 15  
2019 Washington Street East  
Charleston, WV 25305-0130

**RE: HHR11047 for Professional Services - Six Hospitals**

ZDS has enjoyed working with West Virginia State agencies and hope to have the opportunity to work on these six hospitals in partially ARRA funded projects. ZDS has provided the professional services for health care and both State and Federal agencies. ZDS also has active projects near some of these hospitals. We have been to some of the facilities to understand your needs and believe our knowledge would make our team an excellent fit for the proposed capital improvements.

Enclosed are six copies of the team's proposal for Professional Services for Engineering/Architectural projects for *Lakin Hospital, Hopemont Hospital, Welch Community Hospital, William R. Sharpe, Jr. Hospital, Mildred Mitchell-Bateman Hospital and John Manchin, Sr. Health Care Facility* (collectively, the "Hospitals"). Our team of professionals is dedicated to performing quality professional services, taking into account clients' needs, scheduling and budgets. A brief description of the organization of our team and their services are described in *Section II* of this Expression of Interest.

**TEAM EXPERIENCE – SECTION III:** ZDS and its consultants, Paradigm Architecture and Historic Preservation Consultant, Inc., have extensive experience in renovation design including Health Care retrofit projects involving energy and operating savings. ZDS is recognized for its specialties in mechanical design, electrical design, indoor air quality services, energy conservation/performance contracting and commissioning services for commercial, health care and educational facilities. Retrofit projects comprise over 70% of all work for the firm. ZDS principals Ted Zachwieja and Todd Zachwieja specialized in energy conservation in health care design prior to establishing ZDS and were involved in hundreds of millions in health care renovations, new construction and Performance Contracting. Some previous experiences include HVAC systems upgrades at three of the Charleston Area Medical Center facilities saving nearly \$800,000 annually, HVAC renovations for the eight story Judicial Annex Facility for the Kanawha County Commission, many schools' HVAC renovations up to \$10,000,000 per project including Raleigh County, Ritchie County, Tucker County and Webster County, and HVAC renovations for the West Virginia Capitol Complex saving millions in energy and operating costs.

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

**ZDS** has many successful years of professional experience with local and state agencies including recent **ARRA funded projects**. Some recent ARRA funded projects with government agencies include the VA Huntington Hospital steam distribution upgrades, VA Huntington Hospital water line upgrades, Raleigh County Schools, Woodrow Wilson High School HVAC/Electrical Renovations, Beckley, WV, Davis Thomas Elementary/Middle School HVAC/Electrical Renovations, Glade Elementary-Middle School HVAC/Electrical Renovations, and currently working on Jackie Withrow/Hopemont Hospitals' heating plant renovations.

**PROFESSIONAL QUALIFICATIONS – SECTION IV:** ZDS Design/Consulting Services and their consultants have registered professionals in all of the required disciplines to effectively execute the requirements of the project, including:

◦ **Mechanical HVAC/Plumbing Engineers**

◦ **Architecture**

◦ **Electrical Engineers**

◦ **Historical Preservation**

We believe that our specialties in HVAC/Electrical Design, Energy Management, Planning and Codes make us most qualified to work on these types of projects. We continue to have an excellent working relationship with the State Fire Marshal, Office of Health Facility Licensure & Certification, the West Virginia Department of Education and the State of West Virginia. Below is a partial listing of the **ZDS Project Team**. Detailed resumes are in **Section IV**.

- Ted T. Zachwieja: **ZDS Principal-in-charge of Construction Administration** with over 45 years of experience in M/E design. *Ted was one of three engineers selected by the Department of Energy to train those who manage buildings to conserve energy.*
- Todd A. Zachwieja: **ZDS Principal-in-charge of Design and Project Management** with over 28 years of experience in M/E design, energy management, IAQ and commissioning. *Nationally recognized for expertise in IAQ, LEED and Certified Energy Manager. Received "Legend in Energy" by AEE in 2007 and 2008.*
- Jim Watters: **ZDS Production Manager** with over 35 years of experience in mechanical, electrical and plumbing design and construction experience.
- Paul Walker, AIA: **Paradigm Architecture** President and Principal-in-charge of Architecture with over 27 years of experience and founder of Paradigm Architecture. Located in Morgantown, WV.
- David H. Snider, AIA: **Paradigm Architecture** Project Manager for Architecture with over 24 years of experience extensively in health care.
- Michael Gioulis **Historic Preservation Consultant, Inc.'s** President with over 28 years of experience extensively in historical preservation.

We have also worked on health care projects for CAMC, United Hospital Center, Webster Memorial Hospital, and many others. We encourage you to call our references and ask how well we worked with their staff, about our technical strengths and our ability to work with contractors to provide the Owner with a quality project. Paradigm Architectural references are at the end of **Section II**. Please feel free to contact some of the following references about **ZDS'** work:

1. Dr. Mark Manchin, Executive Director School Building Authority, previous superintendent of both McDowell Co. Schools and Webster County Schools at (304) 558-2541
2. Mr. Michael Pickens, Executive Director WV Department of Education at (304)-558-2711
3. Mr. Bill Elswick, formerly at CAMC and WV Dept. of Education, at 304-382-9907
4. Mr. Steve Boyes, Project Mgr, VA Huntington Hospital at (304) 751-0825
5. Mr. Rick Hicks, Superintendent with Tucker County Schools, at (304) 478-2771, ext. 146



6. Mr. Tony Crislip, Manager, Marshall University at (304) 696-6241
7. Mr. Ron Stricker, Office of Health Facility Licensure & Certification, at (304) 558-0050

Our team of professionals is dedicated to performing quality design services, taking into account clients' needs, scheduling and budgets.

### **CONSTRUCTION MANAGEMENT AND RECOGNITION - SECTION V**

Our team has over four decades of experience in West Virginia, giving us the local understanding of your needs. Construction management is through senior staff with a Principal in charge of the process. Any proposed modifications to the Mechanical/Electrical systems of your existing buildings require careful planning and phasing to minimize disruption to occupancy and use of the buildings. We assume that the projects will require the buildings to remain occupied during the construction period. We have extensive renovation experience, including phasing construction, to minimize these potential disruptions.

We have visited multiple hospitals and understand the potential value to upgrading the HVAC DDC controls, lighting systems and exterior windows. Our approach is different than the traditional A/E role; we have actual operational experience, not just design experience. We design the improvements and can commission the Mechanical/Electrical systems. By commissioning the systems, we fine-tune the building's mechanical equipment to actual conditions and assist the building personnel after occupancy to improve comfort, provide training, and minimize operating costs.

We believe the best engineers lead the industry in applying innovative ideas and concepts while adhering to proven approaches. **ZDS** was selected as the premier engineer in the region to establish a pilot 500-ton geothermal heat pump system for Webster County High School that saved them over 40% off their utilities' costs annually and serves as a pilot for all schools in the State of West Virginia.

**ZDS** is continually bidding numerous projects in a wide variety of disciplines and, as a result, has a wealth of information to use in projecting an opinion of probable construction costs. This wide range of experience gives the team the knowledge it needs to identify key elements of a project that may be especially sensitive to current price volatility in the construction industry. **ZDS and their consultants have an excellent track record of completing projects on time and in budget.**

We have staff ready and willing to start on your project. We believe that our combined specialties provide *the Hospitals* with the best expertise to provide economical solutions for your specific projects' needs. **Section IV** includes details on how we do it and also includes some of our team members' recognition and national publications that show the depth of experience we have to offer.

We look forward to having an interview with you to further discuss our team's qualifications and your needs. If there are any questions, please do not hesitate to call.

Sincerely,



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

# West Virginia Department of Health & Human Resources FEDERAL PROGRAM PARTICIPATION ACKNOWLEDGMENT, AUTHORIZATION, CONSENT, AND RELEASE

No person who is currently excluded, debarred, suspended, or otherwise ineligible to participate in federal health care programs or in federal procurement or non-procurement programs shall be hired by the West Virginia Department of Health and Human Resources.

I am ☐ am not ☒ currently excluded, debarred, suspended, or otherwise ineligible to participate in federal health care programs or in federal procurement or non-procurement programs.

Jed R. Zerkow  
Signature

10/20/10  
Date

I authorize and consent to a background check by the West Virginia Department of Health and Human Resources specifically to determine whether I am currently excluded, debarred, suspended, or otherwise ineligible to participate in federal health care programs or in federal procurement or non-procurement programs. If hired, I also agree to periodic conduct of additional such background checks during the course of employment by the West Virginia Department of Health and Human Resources.

I release any persons and the West Virginia Department of Health and Human Resources and its agents, officials, representatives, employees, officers, or related personnel both individually and collectively, from any and all liability for damages of any kind that may result because of compliance with this acknowledgment and authorization.

For positive identification purposes, the following information is required when conducting a background check. This information is confidential and will not be used for any other purposes (please print):

Name ZALWIEJA TED A  
last name first name middle initial

Maiden/Other Names \_\_\_\_\_  
(This should include other married names by which you have been known.)

Current Address 1072 CRESTMONT RD HURRICANE WV  
street/box# city state

**NOTE: Your social security card must be presented for verification purposes.**

Social Security # 234-06-0153 Date of Birth 05/21/1960  
month/day/year

Driver's License Number E002540 State of Issue WV

Jed R. Zerkow  
Signature

10/20/10  
Date

## EMPLOYING UNIT INFORMATION

Office/Facility/Region/District

Contact Person

Fax Number

Phone Number

## FOR OPS USE ONLY

HHS Match Outcome

☐

Positive

☐

Negative

ESA Match Outcome

☐

Positive

☐

Negative

Initial

Date



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

# Request for Quotation

RFQ NUMBER
HHR11047

PAGE
1

ADDRESS CORRESPONDENCE TO ATTENTION OF
ROBERTA WAGNER 304-558-0067

RFQ COPY  
TYPE NAME/ADDRESS HERE

HEALTH AND HUMAN RESOURCES  
OFFICE OF PROPERTY MANAGEMENT  
VARIOUS LOCALES AS INDICATED

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
09/21/2010				

BID OPENING DATE:

10/21/2010

BID OPENING TIME

01:30PM

LINE	QUANTITY	UOP	CAT NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	JB	EOI	EOI		
A&E SERVICES FOR LAKIN HOSPITAL CAPITOL IMPROVEMENTS						
EXPRESSION OF INTEREST (EOI) PROFESSIONAL ARCHITECTURAL/ENGINEERING SERVICES						
THE WEST VIRGINIA STATE PURCHASING DIVISION FOR THE AGENCY, THE WEST VIRGINIA DEPARTMENT OF HEALTH AND HUMAN RESOURCES, IS SOLICITING EXPRESSIONS OF INTEREST TO PROVIDE ARCHITECTURAL CONSULTING AND ARCHITECTURAL & ENGINEERING SERVICES FOR PRIORITIZING THE CAPITAL IMPROVEMENTS FOR LAKIN HOSPITAL, MILDRED MITCHELL-BATEMAN HOSPITAL, WILLIAM R. SHARPE, JR. HOSPITAL, WELCH COMMUNITY HOSPITAL, JOHN MANCHIN SR. HEALTHCARE CENTER AND HOPEMONT HOSPITAL, AS DEFINED PER THE ATTACHED.						
TECHNICAL QUESTIONS CONCERNING THIS SOLICITATION MUST BE SUBMITTED IN WRITING TO ROBERTA WAGNER VIA MAIL AT THE ADDRESS SHOWN IN THE BODY OF THIS EOI, VIA FAX AT 304-558-4115, OR VIA EMAIL AT ROBERTA.A.WAGNER@WV.GOV. DEADLINE FOR ALL TECHNICAL QUESTIONS IS 10/05/2010 AT THE CLOSE OF BUSINESS. ANY TECHNICAL QUESTIONS						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
<i>Paul A. Sahay</i>	304-755-0075	10/20/10
TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE
PRINCIPAL	55-0735445	

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

## GENERAL TERMS & CONDITIONS REQUEST FOR QUOTATION (RFQ) AND REQUEST FOR PROPOSAL (RFP)

1. Awards will be made in the best interest of the State of West Virginia.
  2. The State may accept or reject in part, or in whole, any bid.
  3. Prior to any award, the apparent successful vendor must be properly registered with the Purchasing Division and have paid the required \$125 fee.
  4. All services performed or goods delivered under State Purchase Order/Contracts are to be continued for the term of the Purchase Order/Contracts, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise available for these services or goods this Purchase Order/Contract becomes void and of no effect after June 30.
  5. Payment may only be made after the delivery and acceptance of goods or services.
  6. Interest may be paid for late payment in accordance with the *West Virginia Code*.
  7. Vendor preference will be granted upon written request in accordance with the *West Virginia Code*.
  8. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.
  9. The Director of Purchasing may cancel any Purchase Order/Contract upon 30 days written notice to the seller.
  10. The laws of the State of West Virginia and the *Legislative Rules* of the Purchasing Division shall govern the purchasing process.
  11. Any reference to automatic renewal is hereby deleted. The Contract may be renewed only upon mutual written agreement of the parties.
  12. **BANKRUPTCY:** In the event the vendor/contractor files for bankruptcy protection, the State may deem this contract null and void, and terminate such contract without further order.
  13. **HIPAA BUSINESS ASSOCIATE ADDENDUM:** The West Virginia State Government HIPAA Business Associate Addendum (BAA), approved by the Attorney General, is available online at [www.state.wv.us/admin/purchase/vrc/hipaa.htm](http://www.state.wv.us/admin/purchase/vrc/hipaa.htm) and is hereby made part of the agreement. Provided that the Agency meets the definition of a Cover Entity (45 CFR §160.103) and will be disclosing Protected Health Information (45 CFR §160.103) to the vendor.
  14. **CONFIDENTIALITY:** The vendor agrees that he or she will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the agency's policies, procedures, and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in <http://www.state.wv.us/admin/purchase/privacy/noticeConfidentiality.pdf>.
  15. **LICENSING:** Vendors must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, and the West Virginia Insurance Commission. The vendor must provide all necessary releases to obtain information to enable the director or spending unit to verify that the vendor is licensed and in good standing with the above entities.
  16. **ANTITRUST:** In submitting a bid to any agency for the State of West Virginia, the bidder offers and agrees that if the bid is accepted the bidder will convey, sell, assign or transfer to the State of West Virginia all rights, title and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the State of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the State of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to the bidder.
- I certify that this bid is made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership, or person or entity submitting a bid for the same material, supplies, equipment or services and is in all respects fair and without collusion or Fraud. I further certify that I am authorized to sign the certification on behalf of the bidder or this bid.

### INSTRUCTIONS TO BIDDERS

1. Use the quotation forms provided by the Purchasing Division. Complete all sections of the quotation form.
2. Items offered must be in compliance with the specifications. Any deviation from the specifications must be clearly indicated by the bidder. Alternates offered by the bidder as **EQUAL** to the specifications must be clearly defined. A bidder offering an alternate should attach complete specifications and literature to the bid. The Purchasing Division may waive minor deviations to specifications.
3. Unit prices shall prevail in case of discrepancy. All quotations are considered F.O.B. destination unless alternate shipping terms are clearly identified in the quotation.
4. All quotations must be delivered by the bidder to the office listed below prior to the date and time of the bid opening. Failure of the bidder to deliver the quotations on time will result in bid disqualifications: Department of Administration, Purchasing Division, 2019 Washington Street East, P.O. Box 50130, Charleston, WV 25305-0130
5. Communication during the solicitation, bid, evaluation or award periods, except through the Purchasing Division, is strictly prohibited (W.Va. C.S.R. §148-1-6.6).



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

# Request for Quotation

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2

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ROBERTA WAGNER 304-558-0067

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HEALTH AND HUMAN RESOURCES  
OFFICE OF PROPERTY MANAGEMENT  
VARIOUS LOCALES AS INDICATED

DATE PRINTED	TERMS OF SALE	SHIP VIA	FOB	FREIGHT TERMS
09/21/2010				

BID OPENING DATE:

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	BID OPENING TIME	UNIT PRICE	AMOUNT
					01:30PM		

RECEIVED WILL BE ANSWERED BY FORMAL ADDENDUM ISSUED BY THE PURCHASING DIVISION AFTER THE DEADLINE HAS LAPSED.

CANCELLATION: THE DIRECTOR OF PURCHASING RESERVES THE RIGHT TO CANCEL THIS CONTRACT IMMEDIATELY UPON WRITTEN NOTICE TO THE VENDOR IF THE COMMODITIES AND/OR SERVICE SUPPLIED ARE OF AN INFERIOR QUALITY OR DO NOT CONFORM TO THE SPECIFICATIONS OF THE BID AND CONTRACT HEREIN.

BANKRUPTCY: IN THE EVENT THE VENDOR/CONTRACTOR FILES FOR BANKRUPTCY PROTECTION, THE STATE MAY DEEM THE CONTRACT NULL AND VOID, AND TERMINATE SUCH CONTRACT WITHOUT FURTHER ORDER.

## NOTICE

A SIGNED EOI MUST BE SUBMITTED TO:

DEPARTMENT OF ADMINISTRATION  
PURCHASING DIVISION  
BUILDING 15  
2019 WASHINGTON STREET, EAST  
CHARLESTON, WV 25305-0130

PLEASE NOTE 6 (SIX) CONVENIENCE COPIES WILL BE APPRECIATED.

THE EOI SHOULD CONTAIN THIS INFORMATION ON THE FACE OF THE ENVELOPE OR THE EOI MAY NOT BE CONSIDERED:

SEALED PROPOSAL

BUYER: ROBERTA WAGNER-FILE 22

EOI NO. : HHR11047

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'



State of West Virginia  
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OFFICE OF PROPERTY MANAGEMENT  
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09/21/2010				

BID OPENING DATE:

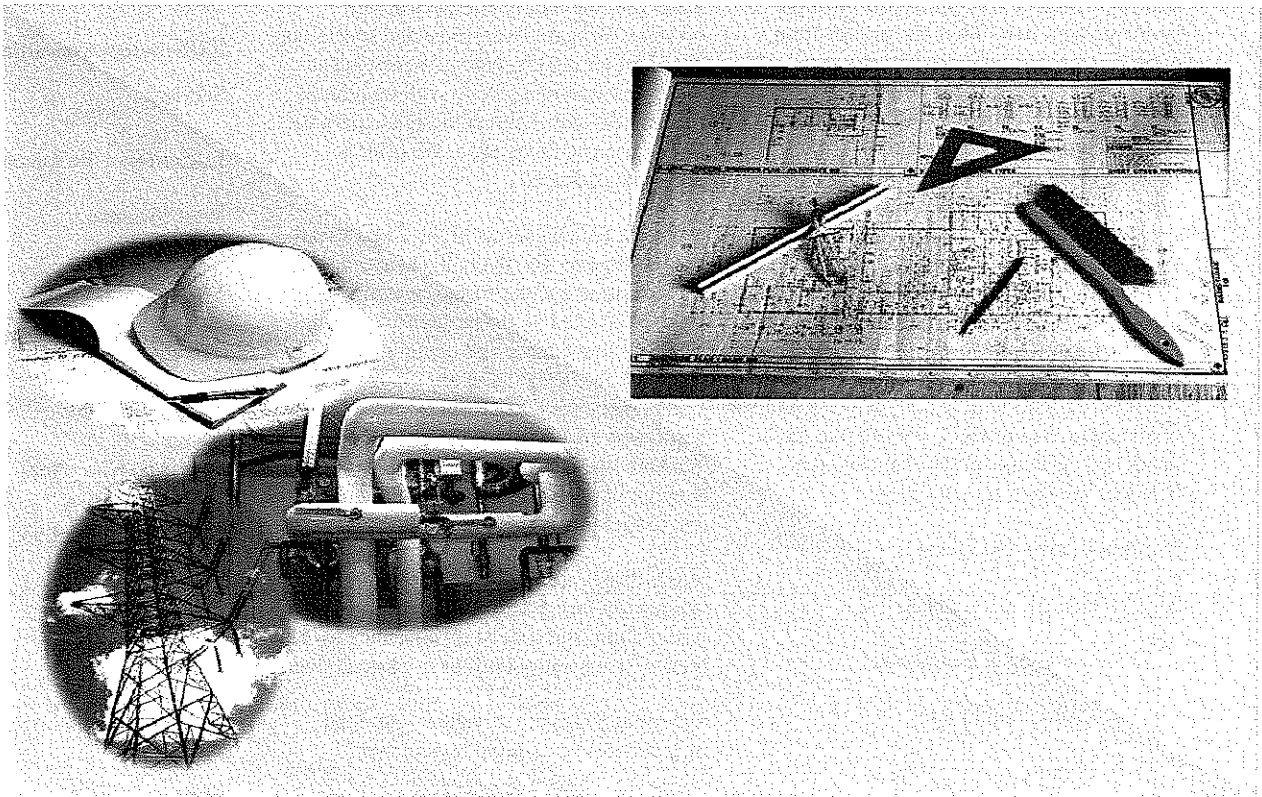
10/21/2010

BID OPENING TIME

01:30PM

BID OPENING DATE: 10/21/2010		BID OPENING TIME: 01:30PM				
LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
EOI OPENING DATE: 10/21/2010						
EOI OPENING TIME: 1:30 PM						
PLEASE PROVIDE A FAX NUMBER IN CASE IT IS NECESSARY TO CONTACT YOU REGARDING YOUR EOI:						
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CONTACT PERSON (PLEASE PRINT CLEARLY):						
-----						
***** THIS IS THE END OF RFQ HHR11047 ***** TOTAL: _____						
SEE REVERSE SIDE FOR TERMS AND CONDITIONS						
SIGNATURE				TELEPHONE		DATE
TITLE		FEIN		ADDRESS CHANGES TO BE NOTED ABOVE		

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'



## About ZDS Design/Consulting Services

### ORGANIZATION

**ZDS** OFFERS AN EFFECTIVE ORGANIZATIONAL STRUCTURE; ONE THAT TAKES EACH PROJECT FROM INCEPTION THROUGH COMPLETION, WORKING AS AN EXTENSION OF THE CLIENT EVERY STEP OF THE WAY.

In 1983, Todd A. Zachwieja founded ZECO Consultants. In 1994 **ZDS** Limited Liability Company was incorporated in WV using dba **ZDS** Design/Consulting Services, and was founded to provide design and consulting services. Today there are four principals with over 100 years of technical expertise:

**Todd A. Zachwieja**, PE, C.E.M., LEED AP, Chief Executive Officer, brings with him over 28 years in the design and consulting business.

**Ted T. Zachwieja**, Principal over Construction Administration services, has over 45 years experience in the design and consulting business. He was owner of Ted T. Zachwieja & Company from 1962 to 1982.

**Daniel H. Kim**, Ph.D., Manager of Strategic Planning, brings with him over 22 years in the design and consulting business and is one of the nation's leading experts in organizational management. He is also owner/founder of Pegasus Communications, Inc. from 1991 to present.

**Lori Zachwieja**, CPA, Chief Financial Officer, was cofounder of ZECO Consultants.

EXCELLENT MECHANICAL AND ELECTRICAL DESIGN RESULTS FROM AN EXPERIENCED TEAM, AS WELL AS LISTENING TO THE NEEDS OF THE CLIENT.

### SERVICES

MECHANICAL

ELECTRICAL

INDOOR AIR QUALITY

COMMISSIONING

ENERGY

Each new project is assigned to a principal in-charge who will follow the project from inception through commissioning.

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

Our design expertise includes:

#### MECHANICAL DESIGN

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

#### ELECTRICAL DESIGN

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

**ZDS** provides comprehensive design services. We have experience and specialties in indoor air quality, energy management and commissioning, along with traditional mechanical and electrical design experience dating back as far as 1958. We offer a complete package.

We work with all levels of the client's staff: the building owner, the budget supervisor, the 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.

**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."

#### 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:

- Contributing Editor and Technical Review Panel for the publication of the *ENVIRONMENT™ 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 *ENVIRONMENT™ 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.

#### COMPANY LEGAL NAME

**ZDS Design/Consulting Services**

#### LOCATION OF INCORPORATION

West Virginia

#### PRINCIPAL OFFICERS

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

Ted T. Zachwieja, Principal

Daniel H. Kim, PhD

Lori Zachwieja, CPA

#### OFFICE

Saint Albans, WV

#### NUMBER OF EMPLOYEES PER OFFICE

**ZDS** currently employs 11 design professionals.



- *The New Horizon: Indoor Environmental Quality*, published as a supplement to the June 1993 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 *ENVIRONMENT™ Professional*
- Editorial Advisory Board member of *POWER PRESCRIPTIONS™* Indoor Air Quality Publication by Electric Power Research Institute.
- Implementing energy management improvements.
- Determining, quantifying and assisting in securing available Utility and Government grants.
- Evaluating and documenting utility savings.

**ZDS** provides IAQ services for major corporations, government organizations and property owners to resolve their specific facility problems:

- Resolve the building's "sick building syndrome" complaints.
- Identify solutions to extensive biological contamination building related illnesses in renovated office buildings.
- Develop solutions for HVAC systems, temperature controls, equipment, operating and maintenance practices causing IAQ problems in schools and commercial buildings.
- Commission new and renovated facilities to minimize or eliminate IAQ issues before they become problems.
- 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, **ZDS** produces sophisticated technical expertise that enables our Client to be proactive in solving and preventing indoor environmental problems.

#### SUMMARY

At **ZDS**, our engineering staff integrates energy efficiency into each project design to provide you, our client, with the added value that you expect and deserve. The **ZDS** team approach represents a tremendous amount of experience in designing energy efficient facilities. **ZDS** offers a comprehensive range of energy management services that includes:

- Providing detailed analysis of facilities.
- Recommending sound and proven energy saving solutions.

Todd Zachwieja received *AEE's LEGENDS IN ENERGY AWARD* in 2007 and 2008 for lifetime achievements in energy. The **ZDS** team members take pride in the quality of their projects and have been responsible for designing and implementing numerous energy management programs. These programs are providing significant energy improvements and include optimizing, central utility plant equipment, control systems, air handling systems, lighting systems, and other energy consuming equipment. Recent projects include:

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

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

- Inspecting, calibrating temperature controls and adjusting outdoor air dampers.

- Commissioning economizer cycle operation.
- Testing steam traps and pressure relief equipment operation.
- Enabling heating and cooling equipment only when required.
- Early identification and resolution of system discrepancies while designers and contractors are still under contract and on the job.
- Verification of system performance while meeting financial restraints.

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

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

Subsequent to joining **ZDS**, Todd Zachwieja established commissioning services for one of the nation’s largest energy service companies. He is also a *LEED’s Accredited Professional*. Many utility companies and building Owners now require commissioning for the new or renovated facilities in order to maximize the use of their investments in their facilities and to obtain LEED’s certification. The commissioning process offers the following benefits:

- Improved comfort, serviceability and Owner understanding of systems and design intent.
- Added technical support for the Owner and being proactive in preventing new problems.
- Reduced maintenance and decreased expenses related to operating deficiencies.

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

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

#### NATIONAL RECOGNITION

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

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

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

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

The **ZDS** design staff continuously provides engineering design services value well into the millions of dollars on a variety of project types. Designing expertise goes as far back as 1958. Through the efforts of our staff, project locations include:

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

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

Our design team will provide comprehensive services utilizing experienced staff through planning, cost estimating, engineering, coordination of bidding, regular site visitation during construction and specifications for equipment. You, our client, will greatly benefit from a single point of responsibility for every need your project may have.

Our 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 and the West Virginia Department of Health.

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.

We view these characteristics as the foundation of Quality. We look forward to the opportunity to discuss our ideas with you and assist you by providing solutions for your needs with a full range of services from Planning to Commissioning.

## CLIENTS

Harvard University

West Virginia University

Washington & Lee University

Ohio University

Marshall University

University of Charleston

University of California - Davis

West Virginia Wesleyan College

Concord University

West Virginia University Institute of Technology

Southern West Virginia Community and Technical College

## Firm History



Paradigm Architecture was formed in October of 2000 by a group of likeminded individuals who believe that architecture provides the opportunity to practice the career that we love. We as individuals and as team members of a firm have a responsibility to exhibit that passion in the manner in which we live our lives.

We chose the name Paradigm because it means a model that serves as an example:

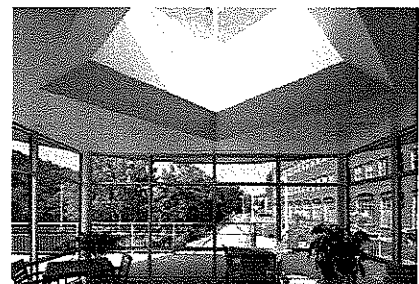
This represents our highest ideals...  
that our architecture would serve as an example  
that our client service would serve as an example  
that our service to our God would serve as an example

Originally established in Birmingham, Alabama, Paradigm Architecture expanded in 2002 by opening an office in Morgantown, West Virginia. Our staff of eleven includes five registered architects, one intern architect, three CAD designers, and two administrative assistants. We utilize the most current technical hardware and software including AutoCAD, Revit, 3D site and building rendering programs, and Speclink specifications software.

It is our belief that we should assemble consultants that are uniquely skilled to satisfy the particular requirements of a project. We have close professional relationships with many engineers and specialized consultants and choose those that we feel will best serve the technical specialization, location of the work and sometimes even personality of the client. We choose not to work with firms who do not share our commitment to service and quality.

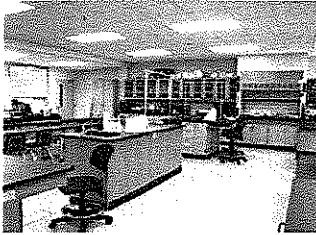


*Waterfront Marina*

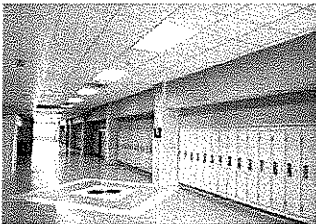


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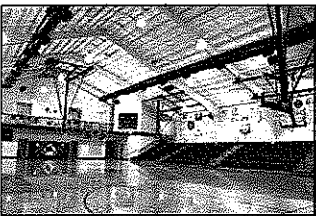
## Firm Profile



Trinity Christian School



Trinity Christian School



Trinity Christian School

Paradigm by definition means an example that serves as pattern or model. The goal of Paradigm Architecture is to be an example in client service, design quality, and technical proficiency. We practice architecture. For every project, Paradigm works closely with the unique requirements of the particular client to design a structure that reflects both the appropriate image and proper function to optimize the working or living environment.

## EXPERIENCE

Paradigm Architecture has experience in a broad range of project types. This work includes private individual, corporate, governmental, educational, and institutional clients.

### Institutional

Medical and retirement life care projects dominate our staff's institutional portfolio. Medical projects include outpatient surgery centers, patient care rooms, emergency medicine, surgery suites, labor & delivery suites, Magnetic Resonance Imaging, X-ray diagnostic services, and heart catheterization spaces for hospital clients, radiation and chemotherapy treatment areas in cancer centers, and professional medical office space for private physicians. Retirement life care facilities range from independent elderly housing and assisted living facilities to full nursing care centers. We are currently working on open end contracts both with Russell Medical Center and Lanier Hospital.

### Educational

Educational experience includes administrative office space, parking facilities, student housing, libraries, student centers, athletic facilities, classrooms, and research laboratory facilities. We have worked on campuses that include: West Virginia University, Fairmont State University, Davis and Elkins College, The College of West Virginia, Hampden Sydney College, Wake Forest University, Ayers State Technical College, The University of North Carolina at Greensboro, and The University of Alabama at Birmingham. Paradigm's staff has also been involved in educational facilities at the elementary and high school level including new and renovated buildings.

### Religious

Paradigm has had the distinct privilege of working on a variety of churches and other religious projects. Among them are: Chestnut Ridge Church, Goshen Baptist Church, Daniels Missionary Baptist Church, The Greek Orthodox Church, A Flame for Christ Ministries, Southridge Church, Family Life Assembly, Faith United Methodist Church, and Chestnut Mountain Ranch in West Virginia and Mountaintop Community Church, Fullness Christian Fellowship, Cahaba Ridge, A Church with a Vision, and The Foundry in Alabama.

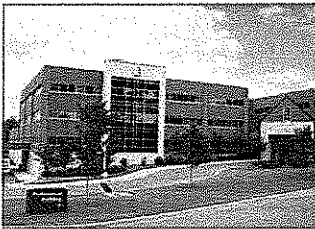


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## Firm Profile



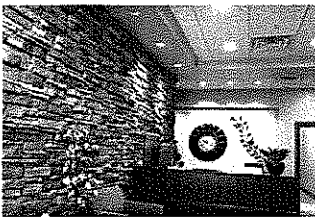
### Governmental



*Russell Medical Center*

Members of Paradigm have been involved in various government projects at the Federal, State, and Local levels. Federal Clients include the GSA, Social Security Administration, Federal Bureau of Investigation, Drug Enforcement Agency, Small Business Administration, Mine Safety and Health Administration, USDA, and DOE. These projects range from new construction for new buildings to tenant fitups in shell buildings. State and local agencies include Department of Natural Resources, multiple higher education clients, Morgantown Chamber of Commerce, and Trussville City Hall.

### Residential



*Glenmark Office Building*

Paradigm's residential experience spans a variety of client types. Student Housing/dormitory facilities for higher education, hotel projects, elderly housing, and private residential that includes single family homes, townhouses, and high end condominium units.

### Corporate

Paradigm has designed entire office buildings as well as tenant fit-up spaces for clients such as Jackson Kelly PLLC, A.G. Edwards, Acordia, Petroplus & Associates Inc., National Biometric Security Project, Simpson & Osborne, DMJM Harris, and the West Virginia University Foundation. Projects also include banking regional and branch offices.

### Food Service

We have been privileged to design many Food Service facilities. These include many private restaurants as well as large, full service commercial catering kitchens and banquet facilities accommodating up to 1,500 guests at a time. Examples of these facilities include Two Waterfront Place Hotel and Conference Center, Morgantown Event Center, Regatta Bar and Grille, Rat Pack Lounge, Boathouse Bistro, Sargasso Restaurant, Trussville Family Center, Mountaintop Community Church's Family Life Center, and Shono's Restaurant. In addition, we are currently designing additions and renovations to Cacapon Resort, which includes updating the existing commercial kitchen and dining facilities.



*WVU  
Downtown  
Student  
Housing*



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# Sustainable Design



## LEED / Green Building

Today, everyone is concerned with energy conservation, life cycle analysis, and green building techniques; and Paradigm Architecture is no different. We have completed two projects that are or will be LEED Certified.

U.S. Department of Energy Office of Legacy Management, Morgantown, WV

***LEED Gold Certified — Core & Shell***  
***LEED Gold Certified — Commercial Interiors***

U.S. Department of Agriculture Office Building, Morgantown, WV

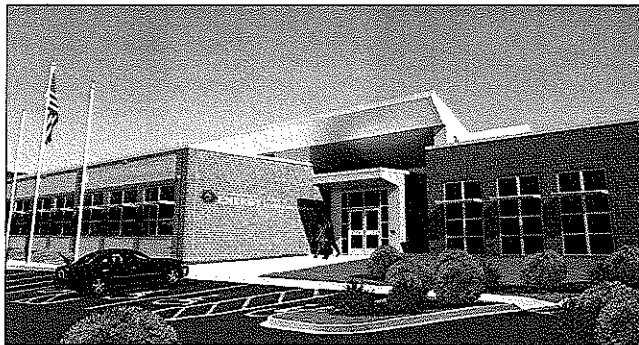
***LEED Certified***



These projects have incorporated sustainable design elements in all elements of construction such as white roofs, energy efficient building envelopes, non irrigated landscaping, on site bio filtration systems, use of local and regional materials, indoor air quality, enhanced commissioning, building automation controls, occupancy sensors, energy recovery systems, and energy efficient mechanical systems, energy modeling, low flow plumbing fixtures, sunshades, and daylighting.

In addition, we have been able to assist clients who are interested in applying green building techniques such as improving the energy efficiency of the building and reducing long term life cycle costs, even though they may not wish to pursue LEED Certification. An example of this includes the Morgantown Event Center and Garage. Although it was originally designed for LEED Certification, the Owner decided not to pursue. As a method of organization, we will utilize the LEED Checklist, even though the Owner does not want to pursue certification.

We have one LEED Accredited Professional on staff and others who are pursuing green building education. All of our consultants have experience with not only green building construction, but also life cycle cost evaluations, value engineering, and materials/systems comparisons in order to give the Owner the best value in a project.



*U.S. Department of Energy*



*U.S. Department of Agriculture*

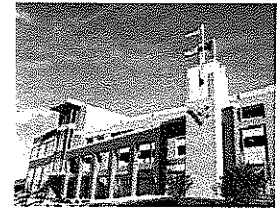
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## References



**Mr. John Thompson**  
Manager of Construction Services  
West Virginia University  
979 Rawley Avenue  
Morgantown, West Virginia  
(304) 293-3625

*West  
Virginia  
University  
Intermodal  
Garage*



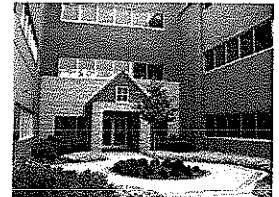
**Mr. G. Richard Lane II, AICP**  
Petroplus Lane, LLC.  
150 Clay Street, Suite 200  
Morgantown, West Virginia  
(304) 284-5000

*Waterfront  
Place*



**Mr. Jim Peace, CEO**  
Russell Medical Center  
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(256) 329-7100

*Russell  
Medical  
Center*



**Mr. James Decker**  
Fairmont State University  
1201 Locust Avenue  
Fairmont, WV 26554-2470  
(304) 367-4100

*Fairmont  
State  
University  
Conference  
Center*



**Mr. Brian Johnson**  
Bright Enterprises  
PO Box 460  
Summersville, WV 26651  
(304) 872-3000 Ext. 219

*Glade  
Springs  
Clubhouse  
Expansion*



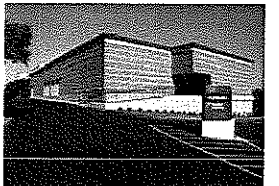
**Ms. Lou Ann Wagoner**  
Superintendent  
Alexander City Board of Education  
375 Lee Street  
Alexander City, AL 35010  
(256) 234-8600

*Benjamin  
Russell High  
School  
Addition and  
Renovations*



**Mr. Doug Dewberry, CEO**  
George H. Lanier Memorial Hospital  
4800 48th Street  
Valley, Alabama 36854  
(334) 756-1428

*Lanier  
Hospital*



**Par-a-digm - (pär'e-dīm') n. An example that serves as pattern or model.**





**MICHAEL GIOULIS**  
**HISTORIC PRESERVATION CONSULTANT**  
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(304) 765-5464 (fax)  
[mike@michaelgioulis.com](mailto:mike@michaelgioulis.com)  
[www.MichaelGioulis.com](http://www.MichaelGioulis.com)

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## **QUALIFICATIONS**

Mr. Gioulis has been a historic preservation professional since 1977. After beginning his West Virginia career working for the State Historic Preservation Office, Mike became the Assistant Director. He served as Historical Architect for the West Virginia Department of Culture and History and as Assistant Director of the Historic Preservation Unit. While there he was involved in a number of programs, including: Survey and Planning grants; historic resource surveys; review of construction grant projects; and tax certification applications. He is familiar with all aspects of interpreting standards for rehabilitation of existing and historic buildings. Mike meets the Secretary of Interior Professional Qualifications for Architectural Historian as outlined in 36 CFR 61 through the West Virginia Division of Culture and History, State Historic Preservation Office (SHPO). This certification assures that the Gioulis firm is qualified and has a background in the performance of historic preservation according to specified standards.

Since 1984, he has been practicing as a private Historic Preservation Consultant and has held a contract with the state as its Main Street West Virginia Design Contractor since 1988. In private practice since 1984, he has been involved in rehabilitation projects and design assistance programs for downtown structures. This includes services to the West Virginia Main Street Office, resulting in over 1000 individual design projects, as well as workshops, resource team visits and technical assistance responses. Resource teams involve intensive site visits in a charrette environment reviewing community resources and developing strategies for revitalization. He has participated in over 50 teams. In addition, Michael has written a Maintenance Manual for downtown property owners. He has completed a number of successful tax certification applications and has participated in individual rehabilitation and restoration projects including the restoration of 20 building facades in downtown Matewan, WV.

Mr. Gioulis has successfully nominated numerous individual resources and historic districts to the National Register of Historic Places within West Virginia as well as in Ohio. Many of these projects were a continuance of an overall identification and protection strategy for the respective historic landmarks commissions and individual property owners. Recently, he has been involved with several ARRA projects, including the Huntington Federal Building, Huntington Courthouse

and Mt. Hope Federal Building. For these he completed the Section 106 review process and participated in the planning and design of various projects including window replacement, window repair, HVAC and other work. All work followed the Secretary of the Interior's Standards for Historic Preservation projects. He consulted with the State Historic Preservation Office to facilitate the 106 process.

A number of training and technical workshops have been conducted by Mr. Gioulis. These include design workshops for the Main Street program from 1989 up to and including the present; Pinnacle Rock State Park for the Division of Culture and History, 1990; State Main Street Annual Conference 1990-2009; National Association of FRP manufacturers, 1995; Elkins and Beverly Historic Landmarks Commission, 1997; and others. He has been a guest instructor at Shepherd State College and the West Virginia Graduate School and an instructor at the University of Charleston. He was also a guest lecturer at the Environmental Biology Department of City University of New York, Hunter.

In St. Clairsville, Ohio he worked with the city and property owners to successfully rehabilitate seventeen downtown buildings and public projects such as entrance signs to the town, and a National Register nomination for the historic district. He also revised the city's design guidelines. In Wheeling he worked with a planning team for the revitalization of the historic waterfront into a major urban park. He has also worked with communities in reviewing rehabilitation projects and as an advisor to historic review committees; and wrote or revised historic district review ordinances and design guidelines in towns such as Shepherdstown, Elkins, Beverly, and Bramwell.

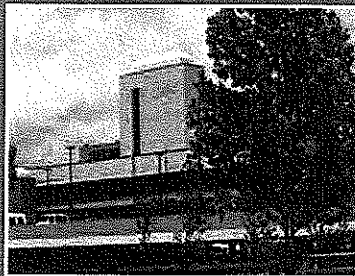
For the town of Alderson and the Main Street Program, Mr. Gioulis provided assistance for their reuse of the Alderson Depot as a Main Street office and tourism facility, as well as providing the same service to the towns of Addison and Webster Springs for their visitor's center. Other projects included facility report studies for the Nicholas County High School, Old Main in Summersville, WV, and the Inskeep Hall Building in Moorefield, WV. Mike participated in the interpretation planning and master planning for West Virginia Independence Hall, Wheeling, WV, a National Register site operated by the state as a museum.

# Engineering for Health Care Facilities

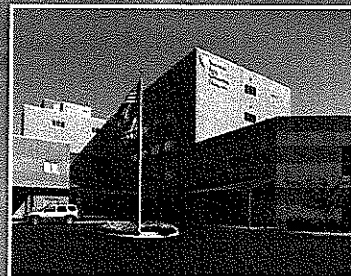
Our project experience includes engineering for three divisions of CAMC, the largest health care provider in West Virginia.



CAMC General Division



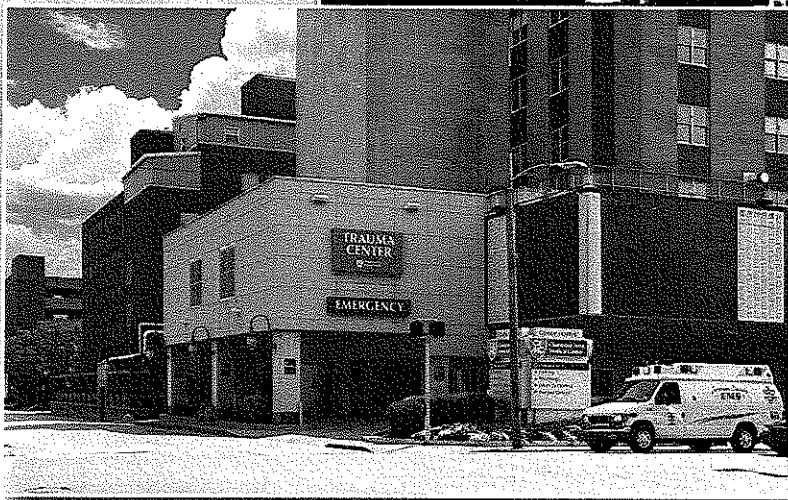
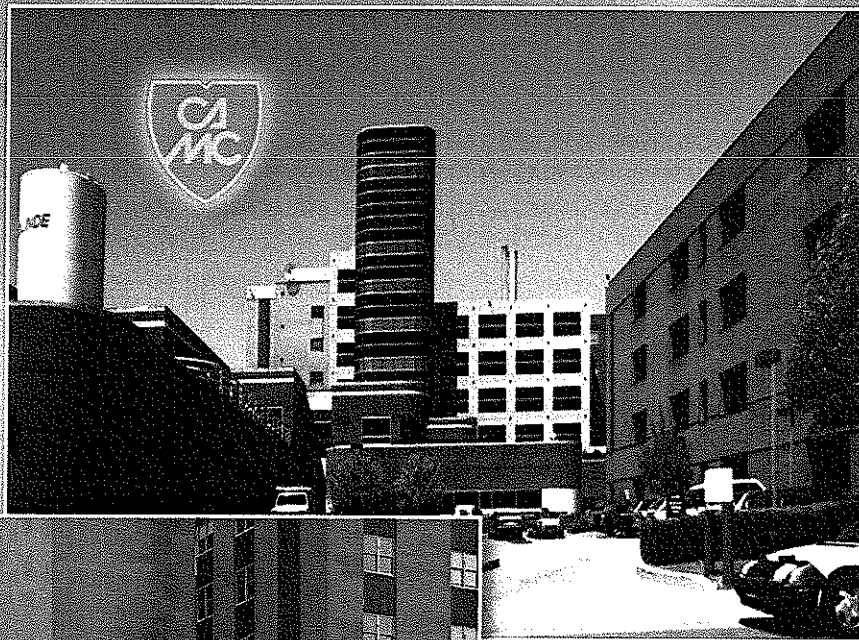
CAMC Memorial Division



CAMC Women and  
Children's Hospital

## CAMC General Division

Energy program saved CAMC approximately \$800,000 annually—plus it paid for the improvements made to the mechanical, electrical and controls systems.

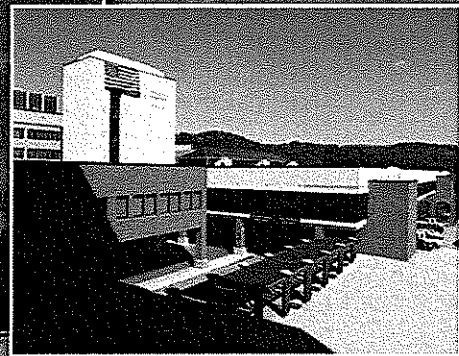
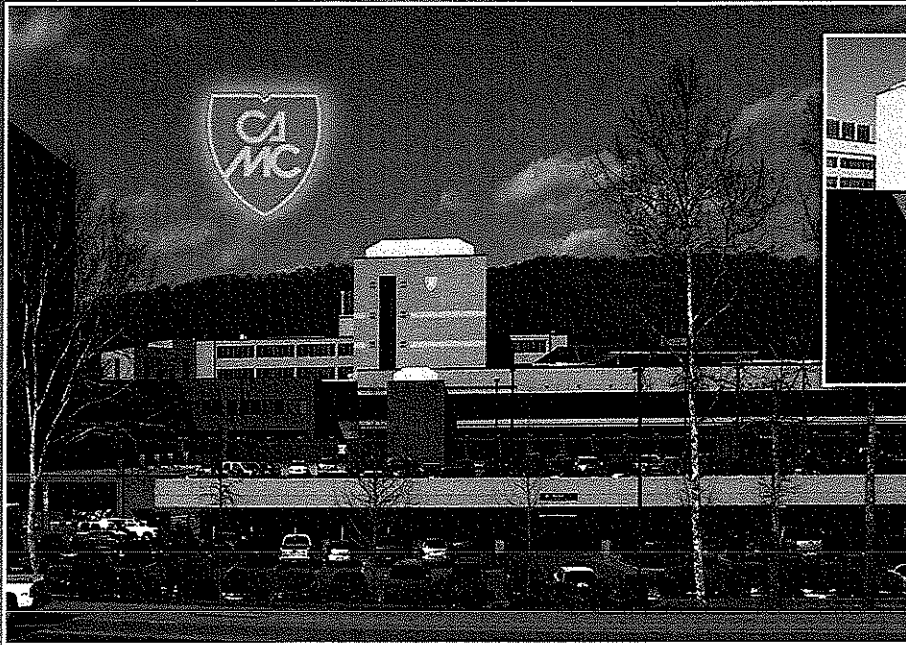


Design/Consulting Services



# Engineering for Health Care Facilities

Our project experience includes engineering for three divisions of CAMC, the largest health care provider in West Virginia.



## Hospital Renovations:

Special Care Facility, Physical Therapy, Emergency Room Retrofit, South Patient Retrofit, Medical Records and District Chiller Plant Replacement and Interconnect

## Hospital Renovations:

LDRP Additions, NICU and PICU, Emergency Room, Patient Rooms, as well as the District Chiller Plant Replacement & Interconnect



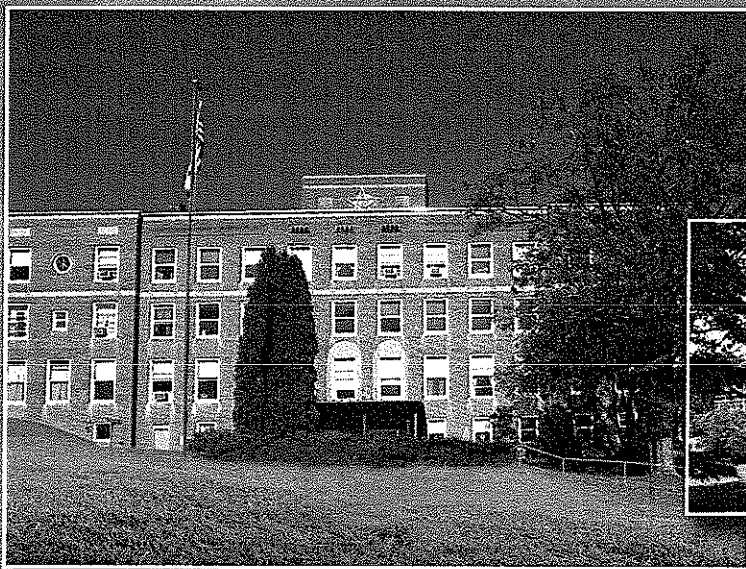
Since 1982, ZDS principals have provided engineering services while meeting stringent health care requirements and safety of the patients for CAMC.



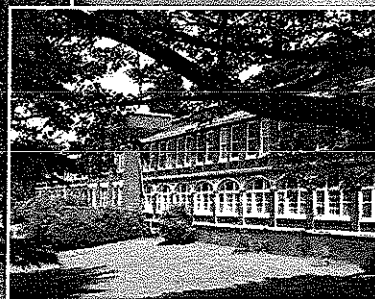
Design/Consulting Services



**Summersville  
Memorial  
Hospital**



**Hopemont  
State Hospital**



**Veterans Affairs  
(VA)  
Hospital  
Administration**



**Design/Consulting Services**

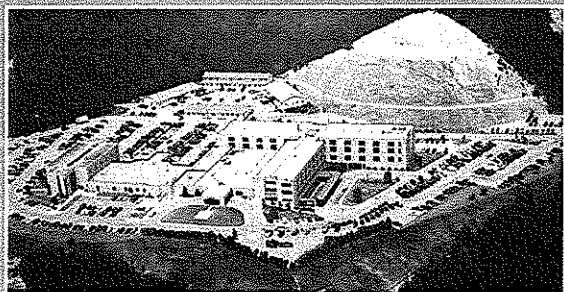


# Engineering for Health Care Facilities

ZDS project experience includes over 100 million square feet of facility space.

## United Hospital Center

HVAC/Electrical  
renovations and  
energy savings

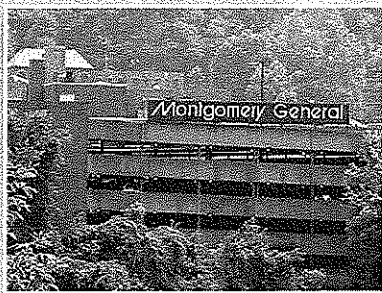


## Bluefield Regional Medical Center

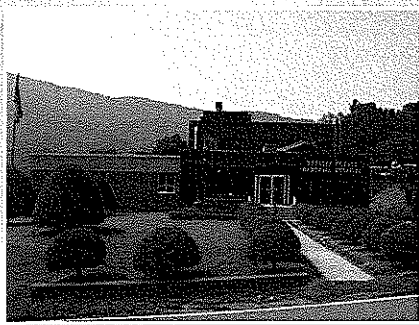
HVAC Renovations



## Thomas Memorial Hospital



## Montgomery General Hospital

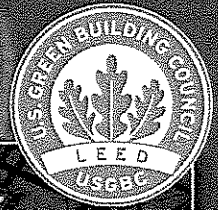


## Webster County Memorial Hospital



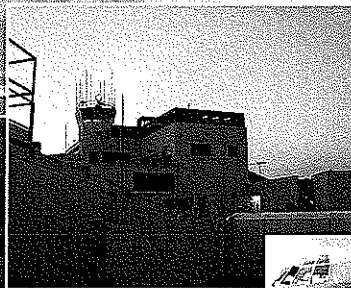
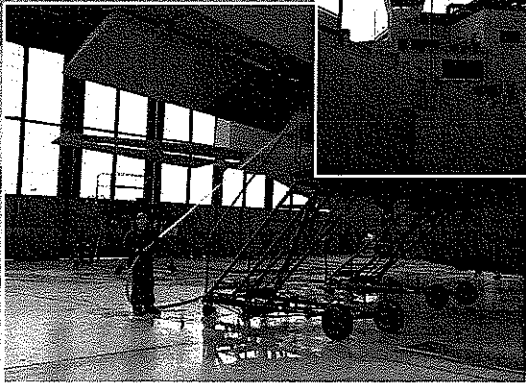
Design/Consulting Services

# ZDS LEED Project Experience



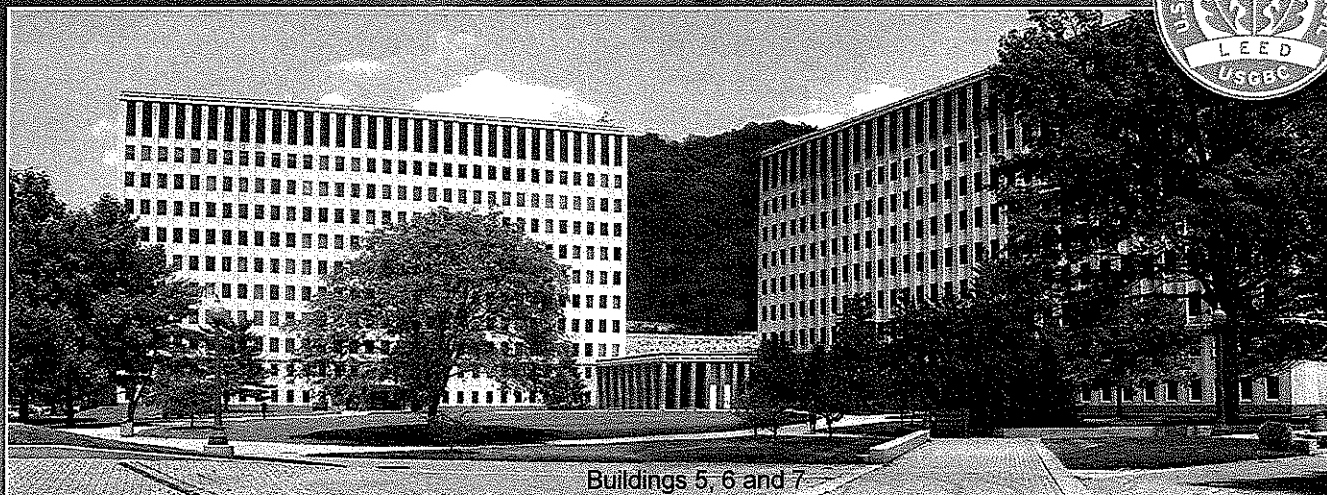
**Air National Guard—130th Airlift Wing at Yeager Airport, Phase I and Phase II Aircraft Maintenance Fuel Systems Hangars and Shops**

Registered for Two LEED Air Force Silver Certifications





# ZDS LEED Project Experience



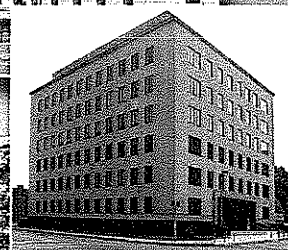
Buildings 5, 6 and 7



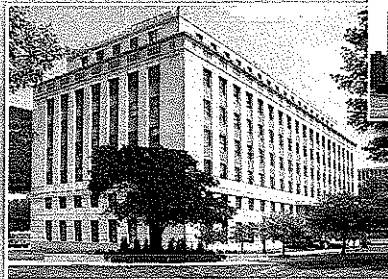
East Wing



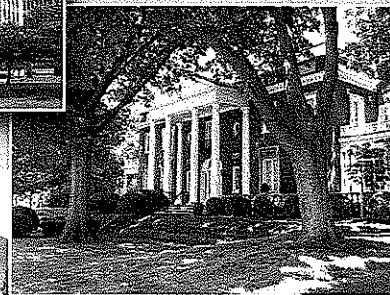
West Wing



Building 4



Building 3



Governor's Mansion



Center for Culture and History



West Virginia  
Capitol Complex

An integration of nine buildings involving over 1.6 million s.f. including the Capitol, Governor's Mansion, Center for Culture and History, plus six other administration facilities.

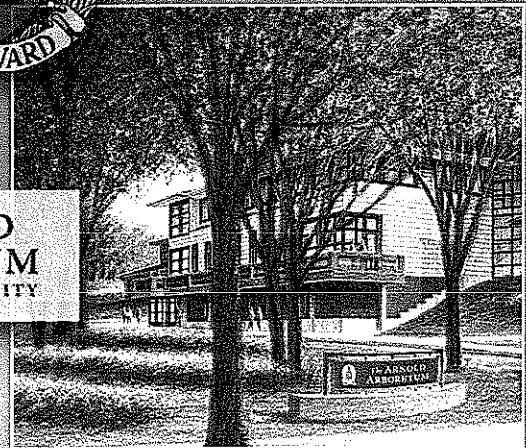
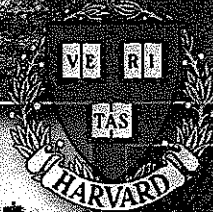
LEED Certified Candidate



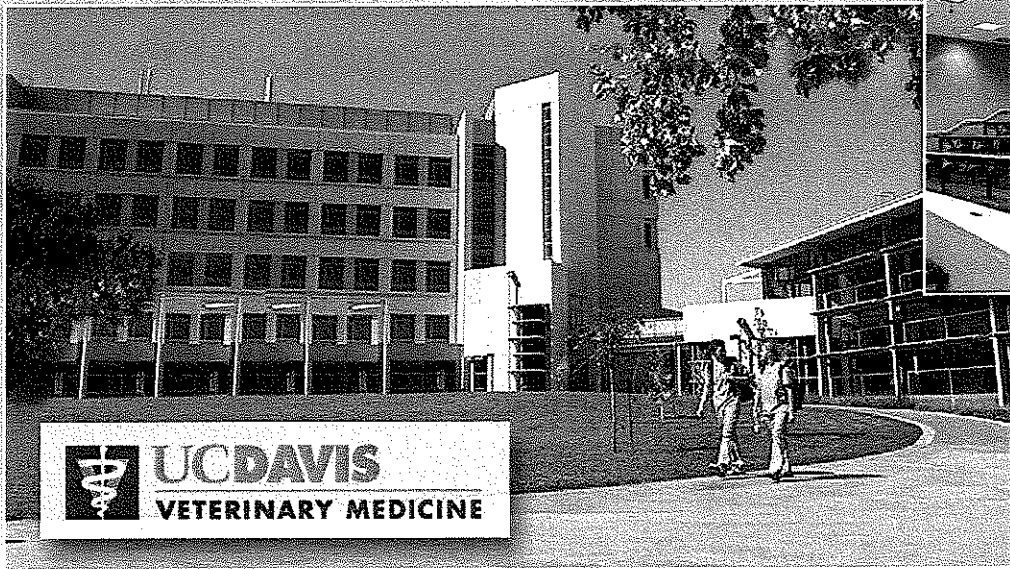
Design/Consulting Services



# ZDS LEED Project Experience



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



**UC DAVIS**  
VETERINARY MEDICINE

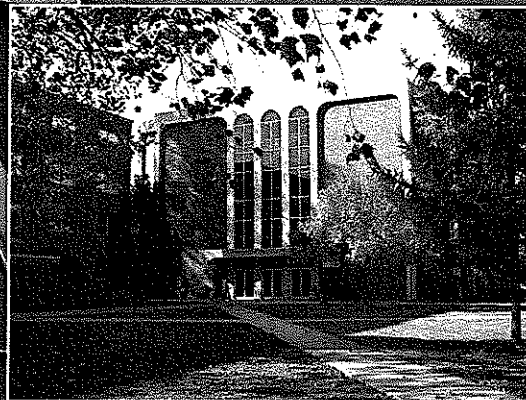
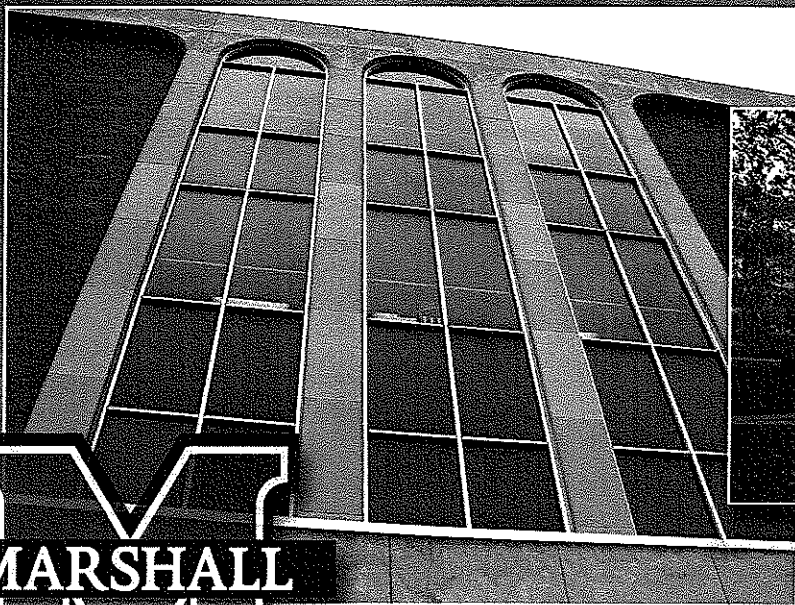


**University of California Davis Campus School of Veterinary Medicine**  
Adapted LEED Principles Including Commissioning

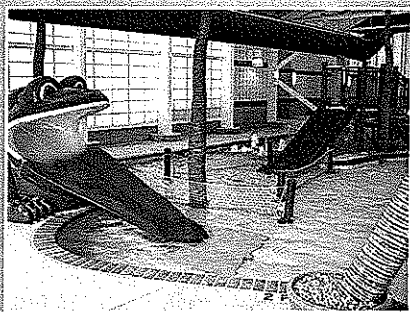


**Design/Consulting Services**

# ZDS LEED Project Experience

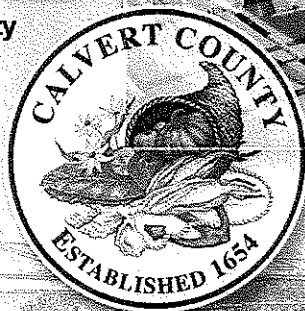
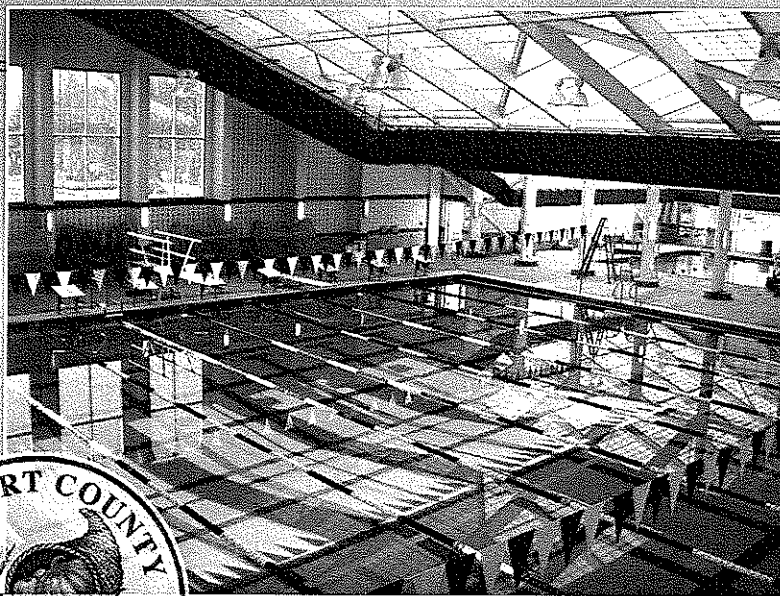


Marshall University Harris Hall  
Applied LEED Principles



Maryland - Calvert County  
Indoor Aquatic Center

Adapted LEED Principles  
Including Commissioning



Design/Consulting Services



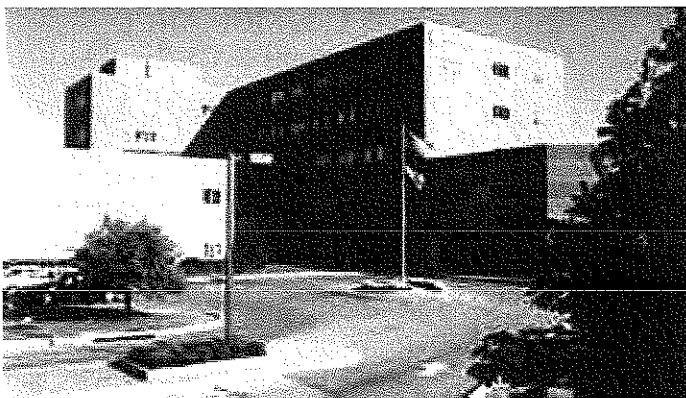
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## PROJECT EXPERIENCE

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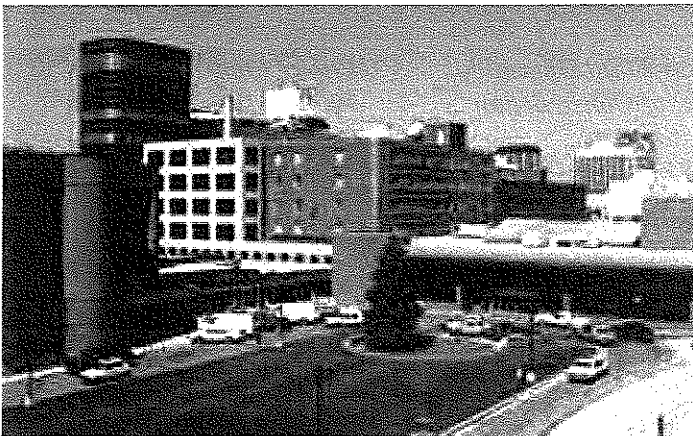
### ***Client: Charleston Area Medical Center, Charleston, WV***

ZDS's principals and personnel have worked with CAMC for many years while at ZDS and through previous employers on many design, energy conservation and commissioning projects involving sophisticated mechanical and electrical systems while meeting stringent health care requirements and safety of the patients for CAMC since 1982. CAMC is the largest health care provider in WV and consists of three separate hospital campuses, satellite medical office facilities, training facilities and clinic facilities encompassing nearly 10 million square feet. Some of the projects ZDS's principals have been involved with at each facility are listed beside the pictures of each of the three hospital facilities.



**Women & Children's Hospital**

- **LDRP Additions/Renovation**
- **NICU & PICU Renovations**
- **Emergency Room Renovations**
- **Patient Room Renovations**
- **District Chiller Plant Replacement & Interconnect**



**CAMC General Division**

- **Special Care Facility**
- **Physical Therapy**
- **Emergency Room Retrofit**
- **3-4-5-6 South Patient Retrofit**
- **District Chiller Plant Replacement & Interconnect**
- **Medical Records**

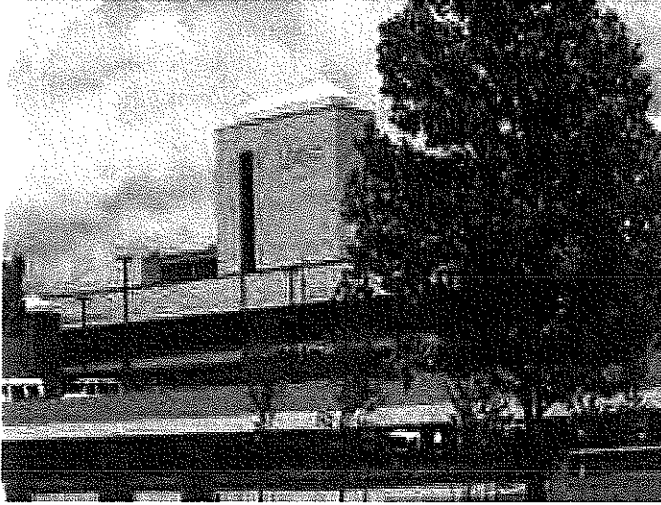
Todd Zachwieja also managed the implementation of an aggressive energy conservation program that saved CAMC approximately \$800,000 annually and paid for the mechanical, electrical and controls improvements made to the facilities as part of this program while employed a regional

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## PROJECT EXPERIENCE

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manager for one of the countries pioneering Performance Contracting companies. These projects included recommissioning, designing and construction management for HVAC modifications, controls, electrical modifications and operational changes to CAMC's existing facilities.



**CAMC Memorial Division**

- **Emergency Room Renovations**
- **Patient Room Renovations**
- **Chiller Replacement/Interconnect**
- **Radiology/Nuclear Medicine Renovations**
- **Cath Lab, SICU, MICU Renovations & CT Scan**
- **Emergency Generator/Fuel Oil Storage**
- **Surgery Addition Commissioning**
- **Laundry Facility Renovations**

Ted Zachwieja and Todd Zachwieja's involvement also included review of the design and commissioning of a \$40 million dollar surgery addition to the Memorial Division campuses. This commissioning work paid for itself in less than two years from the savings generated and addressed maintenance reliability and future expandability issues.

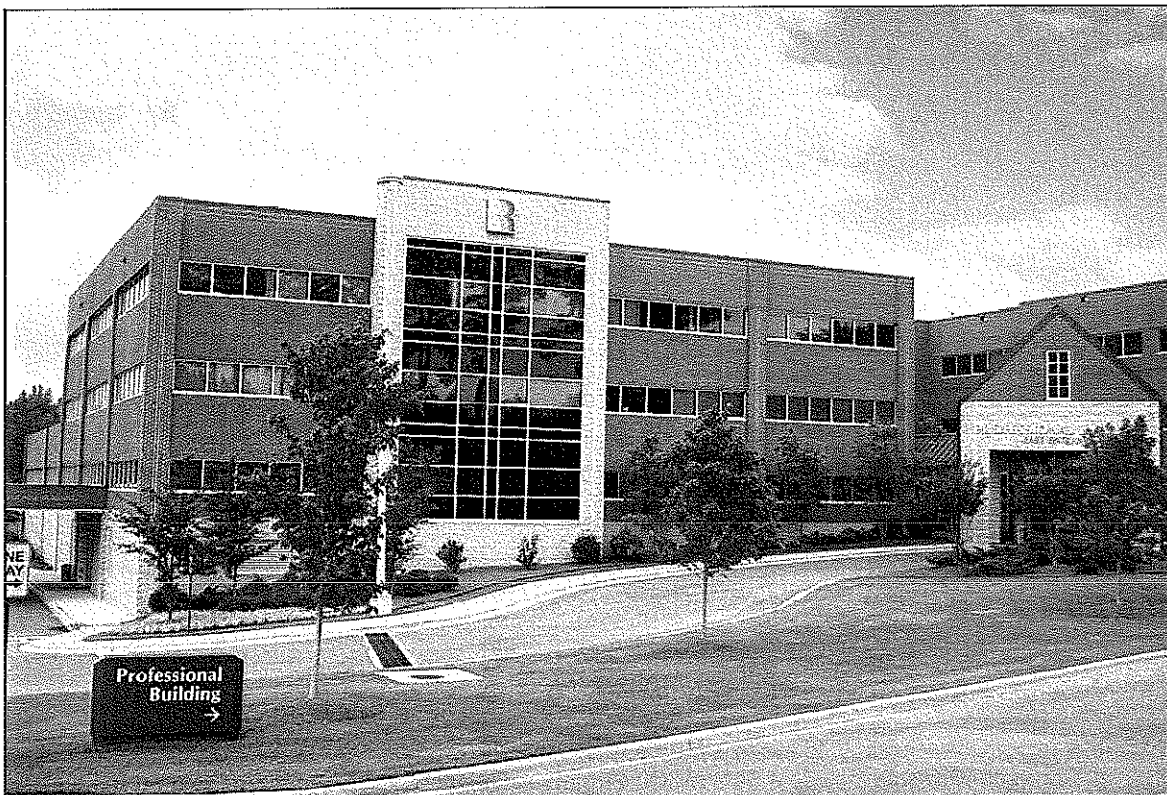
**References:** *Bill Williams, Consultant for Plant Operations*  
*Ray George, Corporate Dir. of Construction*

*Phone (304) 388-5544*  
*Phone (304) 388-9740*



## Russell Medical Center Additions and Alterations

Alexander City, Alabama



Professional Office Building #3

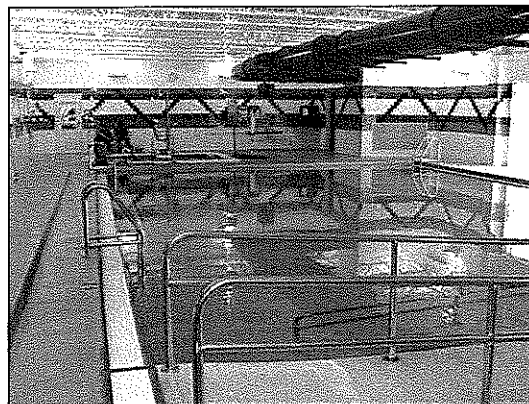
Working under an open end contract, various renovations to Russell Medical Center have been ongoing. These projects involved redesigning all major departments and services including: various doctors' suites, physical therapy, lab, open MRI addition, emergency department, sleep lab, pre-admit testing and satellite lab, women's center, hospice, PET scan, pharmacy, site improvements for new roads, parking, and landscaping.

**Owner:** Russell Medical Center

**Project Manager:** David H. Snider, AIA  
**Project Architect:** Grant T. Gramstad, AIA

**Completed:** Varies from 2000 to current  
**Cost:** ranges from \$200,000 to \$5 million  
**Size:** 145,787 Square Feet  
**Delivery Type:** Varies

**Contractor:** Various



Physical Therapy



## Additions and Alterations to George H. Lanier Memorial Hospital

Valley, Alabama



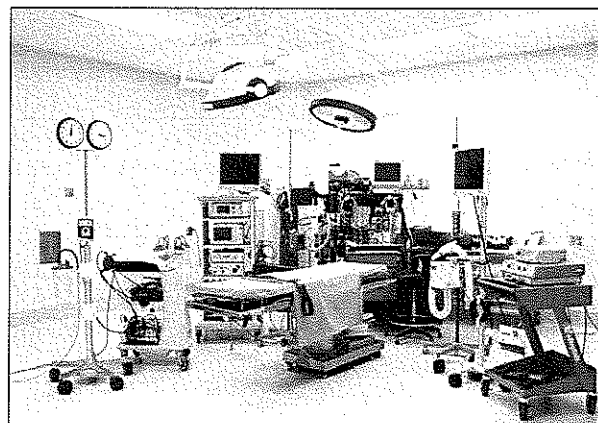
Various ongoing renovations to the existing hospital since 2003 under a currently managed Open-End Contract. Projects include a \$4.2 million Surgery Addition completed in 2006, \$1.2 million Cardiopulmonary / Pharmacy Renovations completed in 2008, \$1.6 million ICU Renovations completed in 2008, and \$1.1 million Emergency Department Renovations estimated to be completed in 2010.

**Owner:** George H. Lanier Memorial Hospital

**Project Manager:** David H. Snider, AIA  
**Project Architect:** Grant T. Gramstad, AIA

**Estimated Completion:** Ongoing  
**Cost:** \$8.1 Million  
**Size:** 32,952 Square Feet  
**Delivery Type:** Design-Build-Negotiated

**Contractor:** Batson-Cook Construction





## West Virginia University Downtown Student Housing

Morgantown, West Virginia



This new five story student housing building accommodates 360 residents. The design includes apartments for Resident Hall Coordinators and Resident Facility Leaders, a multi-purpose room, laundry facility, administrative offices, fellowship advising, and honors college administration.

**Owner:** West Virginia University

**Design Architect:** Paul A. Walker, AIA

**Project Manager:** David H. Snider, AIA

**Project Architect:** Grant T. Gramstad, AIA

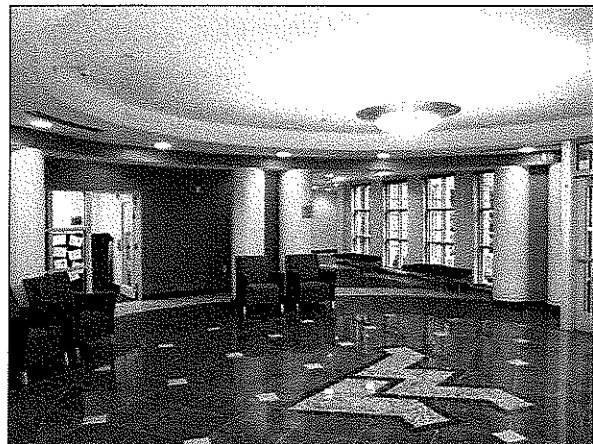
**Completed:** Summer 2009

**Cost:** \$15.3 Million

**Size:** 90,000 Square Feet

**Delivery Type:** Design-Bid-Build

**Contractor:** Tedco Construction







## Fairmont State University Colebank Hall Renovations

Fairmont, West Virginia



Various renovation projects to a historic classroom building originally built in the 1940s. Projects included Reroofing, Gymnasium Renovations, Classroom and Administrative Office Renovations, and a Data Center Build out.

**Owner:** Fairmont State University

**Design Architect:** Jonathan L. Perry, AIA  
**Project Manager:** Jonathan L. Perry, AIA

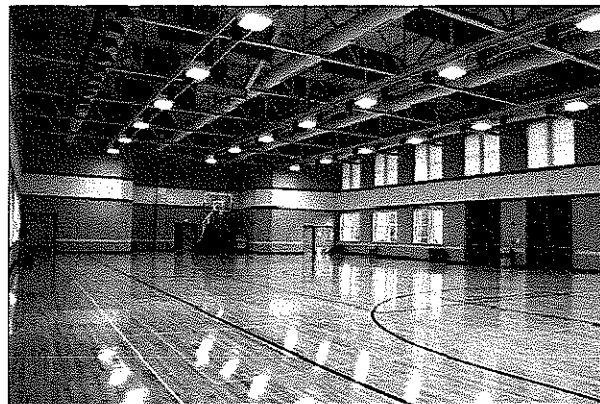
**Completed:** Winter 2007

**Cost:** \$1.5 Million

**Size:** 42,200 Square Feet

**Delivery Type:** Design-Bid-Build with Competitive Bidding

**Contractors:** Tmaro Corporation  
Marks-Landau Construction  
Sutter Roofing







## Glade Springs Resort and Conference Center

Daniels, West Virginia



Located in the Allegheny Mountains of West Virginia, this 48 room luxury hotel and conference center is available for both family vacations and business retreats, offering access to ski, spa, and golf activities.

The facility is located on the site of the existing conference center and is connected to the existing commercial kitchen. The facility functions as the main lodging and meeting center of the resort and offers a mix of hotel rooms and suites, and an additional 4,100 square feet of ballroom and meeting space.

**Owner:** Glade Springs Resort

**Design Architect:** Paul A. Walker, AIA  
**Project Manager:** David H. Snider, AIA  
**Project Architect:** Grant T. Gramstad, AIA

**Completed:** Fall 2005  
**Cost:** \$6 Million  
**Size:** 48,500 Square Feet  
**Delivery Type:** Design-Build-Negotiated

**Contractor:** Alliance Construction Management



**Kanawha County Courthouse**  
*Charleston, West Virginia*  
**Roof Restoration & Masonry Façade Restoration**  
**1999-2005**

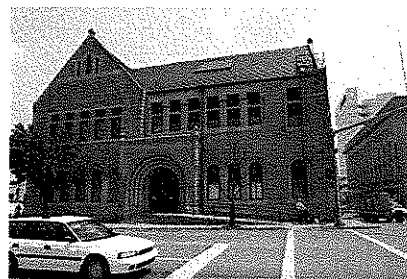
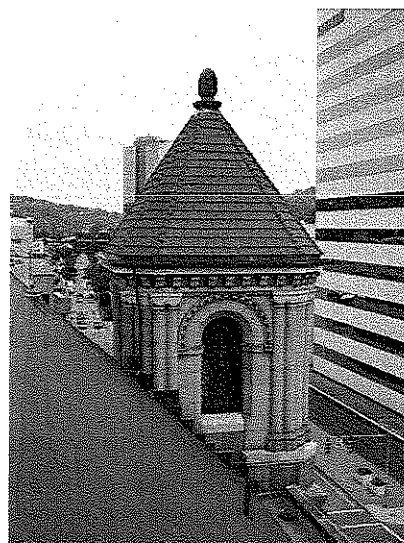
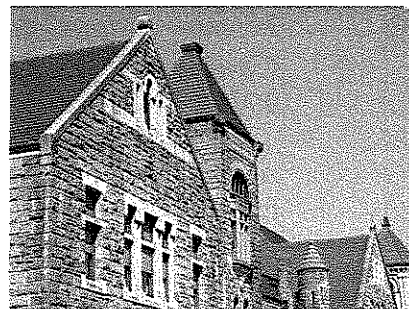
The Kanawha County Courthouse is a three-story stone building built in three sections: the central courthouse building was built in 1892 and has a three-story medieval tower with a pyramidal roof; the second portion was built in 1917 and faces Kanawha Street; the final and largest section of the building was built in 1924 and has twin towers with pyramidal roofs connected by a five-arched loggia. The team was hired in October 1999 to oversee the roof repairs, Phase I, and the second phase, which was to clean the masonry on the building.

Phase I was the replacement and repair of the original terra cotta clay tile roof, and all roof flashing was replaced at the same time. The team also subcontracted a historic roofing consultant, Lee Forbes, to assist in the project. The project was completed ahead of schedule in October 2002 and came in about \$300,000 under budget. The original budget was anticipated to be about 1 million dollars. According to Mr. Forbes, roofing consultant, the flashing should be maintenance free for up to 75 years, and the Ludowici clay tiles used in the project have a life expectancy of 300-400 years, an American standard.

Phase II of the project consisted of pointing, cleaning, repairing and replacing damaged portions of the masonry façade. The products used for the cleaning were appropriate chemicals specifically formulated for historic buildings, and the mortar used in pointing matched the original in color, composition, strength and joint profile. Replacement stone was quarried in Ohio to match the original, and the tooling, configuration and profiles matched all original circumstances. This phase of the project was begun in summer 2004 and completed in summer 2005, on time. The contract amount was for \$429,000, again under budget.

*Contact/Reference:*

*Ms. Jerie Whitehead, Purchasing Director*  
*Kanawha County Commission*  
*407 Virginia Street, East, Third Floor, Room 229*  
*Charleston, WV 25301*  
*(304) 357-0115*  
*jeriewhitehead@kanawha.us*



### **WV State Office Building 3**

#### ***Interior Paint Color Analysis***

#### ***Charleston, West Virginia***

**2008**

A visual crater analysis of paint colors was performed in the lobby and on the second floor of West Virginia State Office Building 3 on May 15, 2008 by Michael Gioulis.

Research was conducted on the conservation of painted surfaces on architectural materials, including both plaster and metal, and samplings were taken from the walls of the lobby and second floor of the referenced building. The samples were then scraped and sanded to reveal accumulated paint layers, as well as the original paint used in these areas. Cross section analysis of the samplings confirmed the original paint colors used.

By photographing the build-up of paint layers from the plaster and metal surfaces, our firm created a precise record of what was found, comparing the original elements with later replacements and alterations.

As well as providing photographs and an in-depth report of what was found, our firm provided a map indicating where the samples were taken or the observations conducted.

In addition to Munsell standard notation, our firm provided approximate matches to Sherwin Williams standard color palettes for the samples.

#### ***Contact/Reference:***

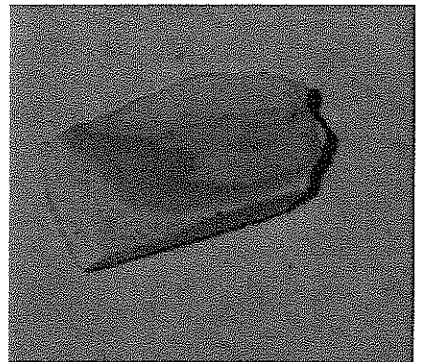
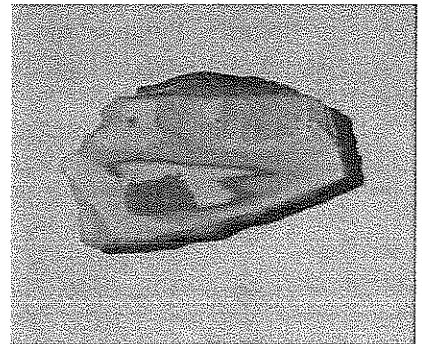
***Mr. Robert Krause***

***General Services Division***

***Capitol Complex***

***Charleston, WV 25305***

***(304) 558-9018***



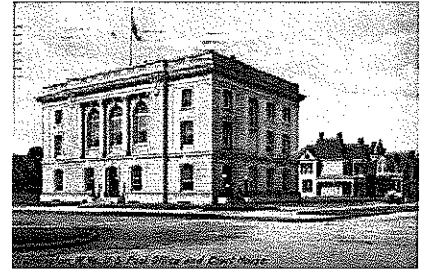
## **Federal Government, GSA Projects**

### **Sidney Christie Federal Building**

*Huntington, West Virginia*

*2006-2010*

Our firm has worked on several projects on this building, including the rehabilitation of the courtroom, exterior work, and a window and door replacement project. The courtroom project entailed the rehabilitation of the interior of the courtroom. The exterior work included site improvements and canopy restoration. The window and door replacement project included color selection, selection of manufacturers, glass selection, etc. Landscaping improvements included plantings, curbs and bollards.



### **Wheeling Federal Building**

*Wheeling, West Virginia*

*2005-20010*

As part of a 106 Review, our firm was involved in a window restoration project and a rest room rehabilitation project for this building. We investigated the historic window and door configurations, as well as the existing conditions, and proposed treatments and provided recommendations for the repair, finishes and replacement of the doors and windows. The rest room rehabilitation project entailed the rehabilitation of the rest rooms for ADA compliance.



### **Abingdon Federal Building**

*Abingdon, Virginia*

*2006-2007*

Our firm was contracted to determine eligibility of the Abingdon Federal Building for the National Register of Historic Places. This process entailed an in-depth review of the interior and exterior of the building, as well as its significance to the historic area of Abingdon, Virginia.



#### *Contact/Reference:*

*Mr. William R. Whittington, Jr.*

*General Services Administration*

*300 Virginia Street East*

*Charleston, WV 25301*

*(304) 347-5155 ext. 18*

## West Virginia Independence Hall

### *Various Projects*

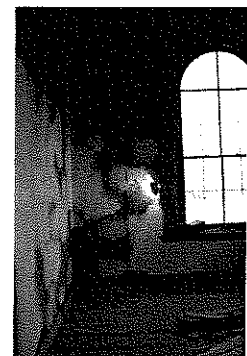
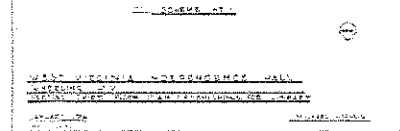
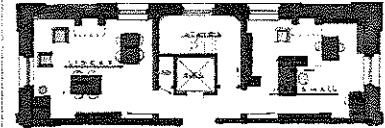
### *Wheeling, West Virginia*

1979-1986

When Michael Gioulis worked for the Division of Culture and History he served as the state's representative to the West Virginia Independence Hall Foundation (WVIHF) and later as the staff member responsible for WVIH in the Historic Preservation Unit. After leaving employment with the state Mike continued to serve on various committees for WVIH and oversaw rehabilitation and other projects.

As the division's representative to WVIH during his tenure at Culture and History he supervised or participated in projects such as:

- Research and interview with WVIHF Beverly Fluty to determine original program and decisions made by the foundation
- Rehabilitation/restoration of the Post Office Work Room for use as exhibit space. This included restoration of the plaster in the entire room and restoration/reconstruction of the running plaster cornice.
- Interpretive Plan 1988
- Development of brackets and installation procedures for exterior bunting decoration for events
- Development of basement seating plan for presentations and meetings
- Structural stabilization of the first floor structure
- Exterior lighting
- Investigation into completion of the Judge's Room and Clerk's Room on the upper mezzanine level
- Rehabilitation of the Marshall's Room and Library Room on the third floor.
- Recording of ca. 1888 stencils in the Marshall's Room.
- 1987 Masonry Restoration project





## TODD (TED) A. ZACHWIEJA, P.E. CEO, Principal-In-Charge

Todd has more than 28 years of experience in the design, construction management, and specifications for mechanical engineering, heating, ventilating, air conditioning, plumbing, electrical, and lighting, as well as indoor air quality analysis and building system commissioning for educational, commercial, industrial and health care facilities. His specialties include mechanical engineering, HVAC systems master planning, conceptual design, energy conservation program development, commissioning and IAQ analysis relating to HVAC systems. He has extensive experience in industrial, commercial, hospitals and educational design. Prior to joining ZDS, Todd Zachwieja coordinated millions in comprehensive energy conservation programs resulting in annual energy savings of millions per year and managed a profitable regional office for one of the country's largest energy service companies. He also developed computer programs for building energy analysis and monitoring and presented technical papers at regional and national conferences.

Some of his project experience includes:

- new Mercer County Courthouse – Princeton,
- Kanawha County Commission – 120,000 sf additions/renovations for the Judicial Annex/Kanawha County Courthouse – Charleston,
- Laidley Towers – Charleston, renovations to the WV State Capitol Complex,
- Cultural Center HVAC renovations,
- Union Carbide, United Center – Charleston,
- Phillip Morris USA,
- Rhone-Poulenc,
- Toyota,
- Olin Corporation,
- Walker Machinery,
- West Virginia Air & Army National Guard,
- Bank One – WV,
- Kohl's,
- Sears,
- West Virginia Public Service Commission Headquarters,
- Yeager Airport.

He also designed one of the largest geothermal heat pump applications in the

mid-Atlantic region, and commissioned HVAC systems and mechanical engineering at many General Motors' facilities in North America.

Some of his health care experience includes millions in renovation and new construction design for Charleston Area Medical Center, including commissioning of Charleston Area Medical Center's \$41 million Surgery Replacement Center and many projects at General Division, Memorial Division, and Women & Children's Hospital.

Other health care experience includes Bluefield Regional Medical Center, Hopemont Hospital, Monongalia General Hospital, Montgomery General Hospital, United Hospital Center, St. Mary's Hospital, Summersville Memorial Hospital, Thomas Memorial Hospital, Webster Memorial Hospital, Cabell Huntington Hospital, Welch Emergency Hospital, Surgicare Center, VA Hospital - Clarksburg, VA Hospital - Huntington, Mercy Medical



### EDUCATION:

Bachelor of Science in Mechanical Engineering from West Virginia Institute of Technology in 1982

Masters of Science in Engineering Management from the University of West Virginia College of Graduate Studies in 1989

### REGISTRATIONS:

West Virginia, No. 10,127

Certified Energy Manager (C.E.M.), National Certification  
LEED® Accredited Professional, National Certification through USGBC

Georgia, No. 18253

Kentucky, No. PE-17961

North Carolina, No. PE-017445

Ohio, No. E-53587

Pennsylvania, No. PE-040929-R

South Carolina, No. 25985

Virginia, No. 0402 025427

### PROFESSIONAL AND COMMUNITY AFFILIATION:

Charter member Mountaineer Chapter of American Society of Heating

Refrigeration and Air Conditioning Engineers (ASHRAE)

Served as ASHRAE's Energy and Technical Affairs Chairman for 6 years

Recognized by the International Who's Who of Professionals

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

## TODD (TED) A. ZACHWIEJA, P.E. CEO, Principal-In-Charge (cont.)

Center, Wayne Memorial Hospital, and Webster Memorial Hospital.

Todd also has experience in providing M/E design for the following colleges and universities including Alderson Broadus College, Bluefield State College, Concord University, Fairmont State College, Harvard University, Marshall University, Ohio University's Athens & Chillicothe campuses, Southern West Virginia Community & Technical College, University of California-Davis, University of Charleston, Washington & Lee University, West Virginia Wesleyan College, and West Virginia University. He was recognized nationally for his work with Ohio University in development of a performance contracting program that is anticipated to save \$2.5 million annually in

energy and operating costs.

Other experience includes providing M/E/P design for schools in the following counties: Calhoun, Clay, Grant, Greenbrier, Hardy, Harrison, Jackson, Kanawha, Lewis, Logan, Marion, McDowell, Mercer, Mingo, Monroe, Ohio, Pocahontas, Putnam, Raleigh, Randolph, Ritchie, Summers, Taylor, Tucker, Upshur, Webster, and Wyoming. Some of his project experience includes the development and design of a pilot geothermal heat pump HVAC with variable speed pumping system at Webster County High School, which reduced electric bills by more than 40% while meeting IAQ requirements.

### PROFESSIONAL AND COMMUNITY AFFILIATION (CONT):

Recognized nationally in 2007 as a "Legend in Energy"

Recognized 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

Member of the American Association of Hospital Engineers

Member of the National Society of Professional Engineers

Member of the National Society of Plumbing Engineers

Member of the International Code Council

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

and Indoor Air Quality," "Ventilation for a Quality Dining Experience," INvironment Professional, Power

Prescriptions and other publications and articles dealing with Indoor Air Quality (IAQ) and MEP

engineering systems

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

## TED T. ZACHWIEJA

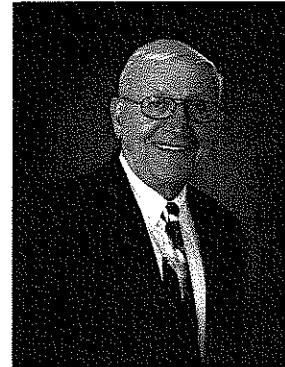
### Principal-in-Charge, Construction Administration

Ted's responsibilities include over 45 years of experience in mechanical and electrical systems design and construction administration. His specialties include the design and development of mechanical and electrical systems, master planning and budgeting for mechanical and electrical systems, and management of complex design and construction projects. He is also a Codes and Standards Specialist. Ted has been involved in all aspects of mechanical and electrical design and construction since 1958, including machine design, structural design and design of heating, ventilating, air conditioning, plumbing, fire protection and electrical systems. His experience includes work for U.S. Steel, Union Carbide, Rhone-Poulenc, Bluefield Regional Medical Center, Charleston Area Medical Center, United Hospital Center, Kanawha County Schools, Marshall University, West Virginia Capitol Complex, West Virginia Institute of Technology, West Virginia University, Bank One and many others in the private sector. Ted's design regarding Chase Towers – Charleston included conducting a comprehensive energy audit, design of a Building Automation Energy Management System, HVAC renovations, design of flat plate heat exchanger system for the perimeter fan coil units and design of the boiler replacement.

Ted was involved with the mechanical and electrical renovations for the State of West Virginia Library Commission Cultural Center as part of a total \$4.5 million project. The indoor air quality, temperature and humidity each were not in accordance with good design practices for this type of structure. ZDS was commissioned to correct these deficiencies while conserving energy.

Ted was selected as one of three engineers to train and teach a course designed by the Department of Energy and American Society of Heating, Refrigeration and Air Conditioning Engineers for emergency building temperature restrictions.

Prior to forming ZDS, Ted was regional manager for a hospital design firm and responsible for designing, construction management and project management for over \$200 million in hospital and health care facilities. The facilities were located over eastern United States. Some of his health care experience includes millions in renovation and new construction design for Charleston Area Medical Center's Special Care Facility. Other local health care experience includes Bluefield Regional Medical Center, Hopemont Hospital, Monongalia General Hospital, Montgomery General Hospital, United Hospital Center, St. Mary's Hospital, Summersville Memorial Hospital, Thomas Memorial Hospital, Webster Memorial Hospital, Cabell Huntington Hospital, Welch Emergency Hospital Surgicare Center, VA Hospital - Clarksburg, VA Hospital - Huntington, Mercy Medical Center, and Webster Memorial Hospital.



#### EDUCATION:

Bachelor of Science in  
Mechanical Engineering, West  
Virginia Institute of  
Technology, 1958.

#### PROFESSIONAL AND COMMUNITY AFFILIATION:

Construction Specifications  
Institute (Charter Member)

American Society of  
Mechanical Engineers

American Society of  
Heating, Refrigeration & Air  
Conditioning Engineers

WV Mountaineer Chapter  
ASHRAE Past President and  
Charter Member

Association of Energy  
Engineers

Association of Hospital  
Engineers

WV Society of Hospital  
Engineers

Professional Affiliate Member  
of AIA

WV Association of Physical  
Plant Administrators

**TED T. ZACHWIEJA**  
**Principal-in-Charge, Construction Administration (Cont.)**

Ted has been involved in the planning, design and construction administration of Concord University's Technology Center and Concord's campus medium voltage upgrades, Marshall University's Harris Hall renovations, Southern West Virginia Community & Technical College's renovations, West Virginia University's (WVU) White Hall and Armstrong Hall, WVU's Wise Library Sprinkler System, WVU's Chilled Water Loop Interconnect – Morgantown, Charleston Area Medical Center (CAMC), Memorial Division Chiller Replacement, CAMC's General Division Chiller Replacement, Variable Pumping System and Chillers Interconnect – Charleston, and many others.

Throughout the years, Ted has worked on new and renovation projects such as West Virginia University Stadium and Forestry Building – Morgantown, addition and renovation of the air conditioning system for the West Virginia State Capitol Building – Charleston, Conley Hall and Science Building HVAC renovations and additions, West Virginia Institute of Technology - Montgomery, Indoor air quality (IAQ) and HVAC renovations of Andrew Jackson Junior High School for Kanawha County School Systems, Fume Hood Design and HVAC additions and renovations for Union Carbide - Charleston, and Rhone Poulenc - Institute, HVAC renovations for the Benedum Student Center at West Virginia Wesleyan College - Buchannon, Greenbrier East and Greenbrier West Schools, Mingo County Schools, Raleigh County Schools including new Shady Springs Middle School, new Trap Hill Junior High School, Academy of Career and Technology Center HVAC renovations, Marsh Fork Elementary renovations, Park Middle School renovations, Woodrow Wilson High School renovations, Randolph County's Elkins Middle School renovations, Pocahontas County High School (Geothermal) renovations, Wyoming County Schools, Tucker County Schools, Webster County High School, Glade Elementary/Middle School and Webster Springs Elementary School HVAC renovations (Geothermal) and exterior renovations, and various other secondary schools.

DANIEL H. KIM, PH.D.  
Principal, Management Services

Daniel brings with him strong design and management skills with over 24 years of experience in consulting ranging from traditional electrical and mechanical systems design to being one of the nation's leading experts in organizational issues including Total Quality Management and Systems Thinking. His specialties include the management and design of HVAC systems for new building construction in the \$50 - 150 million range including the One Hundred and Fifty, Federal Streets, Boston, MA; the Becton Dickinson World Headquarters, NJ; Marketplace Center, Boston, MA. Daniel has been an organizational consultant and public speaker who is committed to helping problem solving organizations transform into learning organizations. He has worked with numerous companies including DuPont, Ford Motor, Harley Davidson, Hanover Insurance, Healthcare Forum, CIGNA, Life Technologies, Ameritech Services, Brigham & Women's Hospital and General Electric, among others.

EDUCATION:

Ph.D. in Management from  
Massachusetts Institute of  
Technology Sloan School of  
Management in 1993

Bachelor of Science in  
Electrical Engineering from  
Massachusetts Institute of  
Technology in 1987

Publications

"Learning Laboratories: Designing  
Reflective Learning Environments,"  
Proceedings of 1989 International  
System Dynamics Conference, Stuttgart  
"Experimentation in Learning  
Organizations: A Management Flight  
Simulator Approach," European  
Journal of Operations Research, May 1992  
"Systems Archetypes: Diagnosing  
Systemic Issues and Designing High-  
Leverage Interventions" 1992,

Cambridge, MA: Pegasus

Communications

"Toward Learning Organizations:  
Integrating TQC and Systems Thinking,"  
Special Report Series,  
Cambridge, MA: Pegasus

Communications

"The Leader with the Beginner's Mind,"  
Healthcare Forum Journal, July/August  
1993

Lectures

Keynote speaker and/or concurrent  
session at several conferences, including  
those hosted by The Planning  
Forum, The Healthcare Forum, Institute for  
Healthcare Improvement, The Conference  
Board.

Speaker at Hofstra University, Monmouth  
College, University of Houston, and U.C.  
Berkeley.



**LORI L. ZACHWIEJA, CPA**  
Principal, CFO

Lori has over 26 years experience in finance, business, and accounting including being a Partner in a consulting firm, a Senior Financial and Tax Analyst for the Corporate Financial Services and Small Systems Support Department at Blue Cross and Blue Shield of West Virginia, Inc. and Staff Accountant for Simpson and Osborne, a CPA firm located in Charleston, West Virginia

**Registrations:**

Certified Public Accounting in 1988, No. 2542

Member of West Virginia Society of CPA's since 1985; Certificate

Number 1949



**EDUCATION:**

Bachelor of Science in Accounting, Bachelor of Science in Business Management, and a Bachelor of Science in Computer Management - West Virginia Institute of Technology - 1983  
Master's Degree at Marshall University

**SHERRY Z. POWELL**  
Office Manager  
Specification Coordinator

Sherry is the ZDS Specifications Coordinator. She has over 10 years experience working with various state contracts with 3 years specifically in Engineering Design contracts. She has also provided assistance with AIA contracts and job specific Construction Administration documents. She coordinates day-to-day operational office management activities and has 12 years experience with various office settings. She has a diverse background through previous volunteer and charity work activities. She has served as co-coordinator and officer for numerous local groups and charitable organizations.



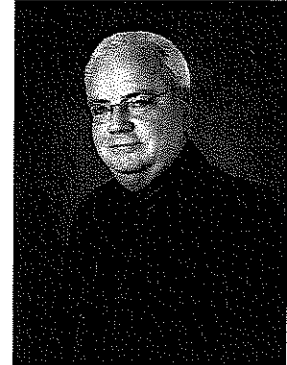
**EDUCATION:**

Bachelor of Art Degree - Education Major WV state licensed K-12 with Minor in Psychology through Marshall University, Huntington, West Virginia - 1992  
Order of Omega honorary member  
National AE Association  
Marshall University Dean's List

## JAMES E. WATTERS Plumbing Engineer, Project Manager

Jim has over 35 years experience in design and implementation of HVAC, plumbing and electrical systems including 9 years in the construction industry. He has a comprehensive knowledge of construction documents, contracts, and development of cost estimates, budgets and schedules. Jim's strengths reside in his ability to manage projects and people in an organized and cost-effective manner. Jim has been involved with the design and production of mechanical and electrical drawings including HVAC, plumbing, fire protection, lighting, electrical power and specialized systems. He has worked with and managed engineers in projects for health care, educational and commercial buildings in the states of West Virginia, Ohio, Kentucky, Virginia, Georgia, New York, Arizona, Illinois and Massachusetts. He has extensive experience in energy savings' programs for HVAC, plumbing and electrical systems in hospitals, state and government office buildings, school systems, and manufacturing facilities, as well as managing performance contracts for the state of Georgia totaling \$10,000,000 in construction costs on various projects.

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 the evolving ADA standards.



### PROFESSIONAL AND COMMUNITY AFFILIATION:

Member of the National Fire Protection Association (NFPA)

Member of the Health Care Section of the NFPA

Member of the Illuminating Engineering Society (IES)

Past member of the Institute of Electrical Engineers (IEE)

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

Some of Jim's HVAC, plumbing, fire protection and electrical project experience includes:

Eleanor Maintenance Facility for the West Virginia Department of Military Affairs and Public Safety in Eleanor

Kings Daughters Medical Center in Ashland (multiple projects exceeding \$12,000,000 in construction costs), Charleston Area Medical Center in Charleston

St. Mary's Medical Center in Huntington

Paul Blazer High School in Ashland

Marshall University Student Housing in Huntington

Pleasant Hill Elementary School renovations in Calhoun County

Boyd County Judicial Center in Kentucky

Lightning protection and grounding study at Fenway Park in Boston

Ritchie County Middle/High School

Elkins Middle School HVAC and electrical renovations

West Virginia Department of Transportation Burnsville Rest Area and domestic water pumping station

Tucker County Board Office Boiler Retrofit

Kanawha County commission Judicial Annex Renovations

New Jaeger/Panther Elementary School

West Virginia Division of Culture and History Fire Alarm/Sprinkler upgrades.

**MARK A. MOORE, PE**  
**Project Manager, Electrical, Mechanical and Plumbing**

Mark has more than 8 years of experience in electrical engineering, lighting, plumbing, Technology, mechanical engineering, heating, ventilating and air conditioning, for educational, commercial and health care facilities. He researches and applies, International Building Codes, NFPA, Illuminating Engineers Society standards and National Electric Code in design. Mark has a strong background in microprocessor and microcomputer design. He is also responsible for Information Technology functions for ZDS and our customers.

Mark is an information systems and technology specialist and provides networking solutions and Windows based programming system solutions. He specializes in electrical power, security, fire alarm, lighting, plumbing, HVAC piping, and fire protection.

**EDUCATION:**

BS in Electrical Engineering  
from West Virginia University  
Institute of Technology -2001

**REGISTRATIONS:**

West Virginia

Some of his educational and health care project experience includes:

Charleston Area Medical Center  
Bluefield High School/Performing Art Center  
Clay Elementary School  
Concord University Technology Center,  
Elkins Middle School  
H. J. Keiser Elementary  
Hopemont State Hospital Fire Alarm renovations  
James Monroe High School, Ohio  
University Bennett Hall mechanical and electrical renovations  
Park Middle School  
Ravenswood High  
Ritchie Middle/High School  
Tucker County High/Career Center,  
Webster Springs Elementary School  
geothermal heat pump system  
Winfield High School HVAC/Electrical renovations  
Pocahontas Co High School Renovations/  
Science Center additions  
New McDowell County Southside K-8 School  
Woodrow Wilson High School HVAC/  
Electrical renovations  
United Hospital Wound Center and others.

Hardy County Daycare facility,  
Jackson County Courthouse Annex,  
Kanawha County Judicial Annex,  
Mason County Courthouse,  
New Mercer County Courthouse Annex,  
multiple branch bank facilities,  
Camp Dawson Barracks security renovations,  
Award winning Webster County IMC office facilities,  
Pendleton County Courthouse additions/  
renovations,  
New Webster County Multi-tenant Building, West Virginia  
Capitol Complex Performance Contracting HVAC retrofits,  
West Virginia Capitol Complex Master Planning for Security/Fire Alarm/Life Safety systems, and others.

His commercial experience includes:

Cass Railroad Clubhouse renovations,  
DOT Rest Area and Welcome Center prototypes for the WV Department of Transportation  
4-H Camp Muffly Training/Dining facility,

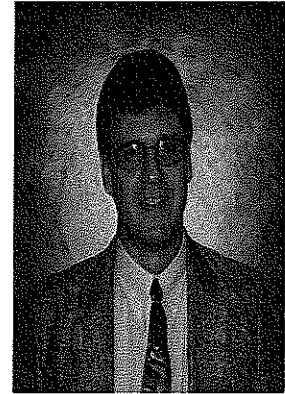
## DAVID G. DIAL, P.E. Senior MPE Engineer

David has over twenty-eight years of experience in the design and commissioning of mechanical and electrical systems. He provides HVAC, electrical and plumbing design services for a variety of clients in West Virginia. His background includes managing operating and maintenance repair and construction services for HVAC, plumbing, electrical and maintenance. He has managed grounds maintenance, security staff, information technology, IT NASA network, video surveillance and telephone systems.

David has experience in Maintenance Engineering in plumbing, HVAC, clean room design, dust collector selections, steam and condensate flow measurement, transfer of steam production from in-house to private contractor, athletic field lighting design, and farm pump water design. He has even completed a successful energy grant application from the U.S. Department of Energy. His Environmental Design experience includes PCB remediation, Air Pollution Control Commission annual reporting, removal of underground fuel storage tanks/pumps, installation and testing for radioactive material, conversion of a fleet of vehicles to operated dual fuel (gasoline and natural gas) including training, designing a filling station, custom built compressor station, cylinder operations area, filling post and monitoring of natural gas usage.

David has been involved in the design, document development, contract administration and recommissioning of the structural, mechanical and electrical disciplines of several WVU projects including Downtown Steam Tunnel Assessment, Coliseum Tunnel Redesign, Towers Exercise Room, Brooks Clean Room, lighting retrofits at Brooks Hall, exterior lighting for Mountainlair Parking Garage, cooling towers replacement at the Chemistry Annex, replacement of electric hot water boilers with natural gas pulse steam boilers, HVAC controls for Allen Hall, measure flow for sub metering/billing for campus steam/condensate systems, PCB removal from electrical equipment on campus, and power/cooling for a data Center at the WVU/NASA facility.

Other project experience includes design for Trinity High School's HVAC, plumbing and electric system, industrial dust collector system for the Percival Dust Collector and replacement of rigging of a 2500 seat auditorium. As a production engineer, David optimized design of medical quality cryogenic freezers, incubator and shaker including scheduling the freight trucks, quality assurance of sheet metal shipments, writing repair manuals and setting up insulation.



### EDUCATION:

Bachelor of Science  
Mechanical Engineering, WV  
University - 1978

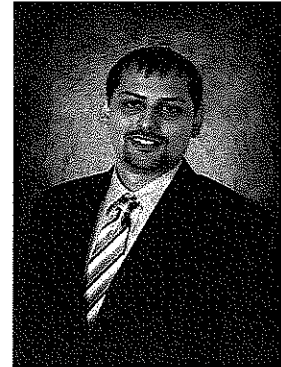
Masters of Science  
Environmental Engineering,  
WV University - 1980

### REGISTRATION:

West Virginia

## JAMES W. LOWRY, E.I. HVAC, Plumbing and Fire Protection Designer

James has over six years of experience and has completed extensive HVAC design training at Carrier Training Center, Syracuse, NY and hydronic design/applications at the B&G training center, Chicago, IL. He also had special courses in Finite Element Analysis, Vibration Analysis, Fluid Power, Automatic Controls, Industrial Instrumentation, and Programmable Logic Controllers (PLCs). James' experience includes the design for mechanical engineering, heating, ventilating, air conditioning, plumbing, electrical and lighting for educational, health care and commercial facilities. He specializes in HVAC, fire protection & plumbing design and commissioning. He researches and applies International Building Codes, NFPA, ASHRAE standards and the AIA Guidelines for Design and Construction of Health Care Facilities in design.



### EDUCATION:

BS in Mechanical Engineering  
from West Virginia University  
Institute of Technology,  
Montgomery, WV in 2004

### PROFESSIONAL REGISTRATIONS:

E.I. West Virginia No. 8376  
West Virginia State Board of  
Registration for Professional  
Engineers

### PROFESSIONAL AND COMMUNITY AFFILIATION:

American Society of  
Mechanical Engineers

Some of James' educational project  
experience includes:

Concord University Technology Center,  
Davis Thomas Elementary/Middle School,  
Elkins Middle School HVAC/electrical  
renovations,  
Eastern Greenbrier Middle School  
addition,  
Glade Elementary/Middle School  
renovations,  
Greenbrier West High School additions/  
renovations,  
laeger/Panther Elementary School,  
James Monroe High School HVAC  
renovations,  
Man/Central Elementary addition,  
Park Middle School HVAC renovations,  
Pleasant Hill Elementary renovations,  
Smithville Elementary School additions/  
renovations,  
Ritchie County Middle/High School HVAC/  
plumbing renovations,  
Tucker County High/Career Center HVAC  
renovations,  
New McDowell County Southside K-8  
School,  
Woodrow Wilson High School HVAC/  
electrical renovations.

His commercial experience includes:

Commissioning West Virginia Air National  
Guard's \$43 million maintenance and fuel  
cell hangars,  
Cass Railroad Clubhouse renovations,  
Burnsville Rest Areas,  
Morgantown  
Welcome Center,  
I-70 Welcome Center, DOT Rest Area  
prototype,  
DOT Welcome Center prototype,  
4-H Camp Muffly Training/Dining facility,  
Kanawha County Judicial Annex,  
Jackson County Courthouse Annex,  
Mason County Courthouse,  
Pendleton County Courthouse additions/  
renovations,  
Tucker County Courthouse renovations,  
Point Pleasant River Museum addition,  
Hardy County Daycare Center,  
West Union Bank Award Winning new  
facility, multiple branch banking facilities,  
Webster County Multi-tenant build-out,  
West Virginia Capitol Complex  
Performance

James' health care experience includes:

Charleston Area Medical Center (Wound  
Center),  
Charleston Surgical Center,  
VA – Huntington steam replacement,  
VA – Huntington water line replacement,  
VA – Huntington CT Scan renovations.



## MARSHALL COCHRAN MEP CAD Designer Technical Analyst

Marshall has approximately 20 years experience specializing in Computer-Aided Drafting and design and is presently working with AutoCAD 2008 and Revit 2011. He has a comprehensive knowledge of AutoCAD and Integraph.

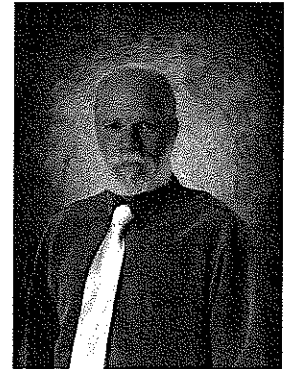
Marshall has been involved in the design and production of mechanical, electrical, fire protection, plumbing, process piping, structural and civil schematic design, design development and construction documents for colleges and universities, schools, health care, industrial and civil organizations in the states of Utah, Nevada, West Virginia, Virginia, Ohio and Pennsylvania. Marshall has developed site utility drawings, plan views, isometric views, elevation, flow diagrams, riser diagrams, details and schedules, for a complete set of working documents.

Some of his college and university experience includes:  
Bluefield College,  
Bluefield State College,  
Concord University,  
Marshall University,  
Ohio University,  
Southern West Virginia Community and Technical College,  
West Virginia Wesleyan College,  
Washington and Lee University,  
West Virginia University.

His educational experience includes mechanical, electrical and plumbing renovations for schools in the following counties in West Virginia:  
Calhoun, Clay, Grant, Greenbrier, Hardy, Harrison, Jackson, Kanawha, Lewis, Logan, Marion, McDowell, Mercer, Mingo, Monroe, Raleigh, Randolph, Ritchie, Putnam, Pocahontas, Summers, Taylor, Tucker, Upshur, Wayne, Webster and Wyoming.

Marshall's health care experience includes:  
Charleston Area Medical Center (CAMC),  
CAMC Wound Care Center,  
Hopemont State Hospital,  
Montgomery General Hospital,  
St. Joseph's Hospital,  
United Hospital Center,  
Webster Memorial Hospital,  
Outpatient Surgery Facility of Pennsylvania.

Some of his commercial project experience includes:  
Kanawha County Judicial Annex HVAC renovations,  
West Virginia Department of Transportation (DOT) boiler and chiller replacement,  
Morgantown Welcome Center,  
I-70 Welcome Center,  
DOT Welcome and Rest Area Prototypes,  
West Virginia Cultural Center HVAC renovations,  
Clubhouse renovations for Cass Scenic Railroad,  
Bluefield Area Transit Authority Administration and Maintenance facility,  
Jackson County Libraries,  
Point Pleasant River Museum,  
Dudley Public Safety Center Fire Station,  
Hardy County Daycare Center,  
United States Department of Agriculture – Forest Products Marketing Laboratory,  
Hart Field Maintenance Building,  
Bank One of Charleston,  
General Motors,  
Toyota,  
West Virginia Public Service Commission Headquarters Building,  
West Virginia Capitol Complex Central Boiler Plant,  
Kanawha County Circuit Court Room,  
Fairmont Boys Home.



### EDUCATION:

Associate Degree in  
Computer-Aided Drafting, ITT  
Technical Institute, Murray,  
Utah, 1990

Has completed various  
courses at:

Parkersburg Community  
College, Parkersburg, West  
Virginia

Arch Moore Vo Tech, Frozen  
Camp, West Virginia

# Paul A. Walker, AIA

President, Principal-in-Charge and Design Architect



Mr. Walker has twenty-seven years of experience as an architect and received his registration in 1986. He became a business owner in October 2000 when he created Paradigm Architecture. Mr. Walker's design responsibilities include programming, development of construction documents, project management, and construction administration. Among the variety of projects he has designed and supervised are: commercial, corporate, educational, governmental, industrial, institutional, recreational, religious, and residential. The scope of projects ranges from a few thousand dollars to over 30 million dollars.

## Architectural Registration

NCARB

WV / AL / FL / NC / PA

## Education

University of Tennessee

Knoxville, TN

Bachelor of Architecture,  
1982

## Professional, Civic and Other Activities

American Institute  
of Architects

Board Member  
Chestnut Ridge Church

### Russell Cancer Center\* Alexander City, Alabama

Completed: Spring 2001  
Cost: \$3.2 Million

### West Virginia University Downtown Student Housing Morgantown, West Virginia

Completed: Summer 2009  
Cost: \$15.3 Million

### Davis and Elkins College Athletic Center Elkins, West Virginia

Completed: Spring 2007  
Cost: \$5.5 Million

### United States Department of Energy Office of Legacy Management Records Storage Facility Morgantown, West Virginia

Completed: Summer 2009  
Cost: \$8 Million (Shell)

### Morgantown Event Center and Parking Garage Morgantown, West Virginia

Completion: Spring 2010  
Cost: \$26.3 Million

### Two Waterfront Place Hotel and Conference Center Morgantown, West Virginia

Completed: Summer 2003  
Cost: \$35 Million

### West Virginia University Mylan Puskas Stadium Touchdown Terrace Club Addition Morgantown, West Virginia

Completed: Fall 2007  
Cost: \$800,000

### Davis and Elkins College Madden Student Center Elkins, West Virginia

Completed: Summer 2003  
Cost: \$1.5 Million

### Russell Medical Center\* Dadeville Clinic Dadeville, Alabama

Completed: Winter 2001  
Cost: \$1.3 Million

### Russell Medical Center\* Dadeville Clinic Dadeville, Alabama

Completed: Winter 2001  
Cost: \$1.3 Million

### Glade Springs Resort and Conference Center Daniels, West Virginia

Completed: Fall 2005  
Cost: \$6 Million

### West Virginia University Coliseum and Athletic Office Renovations Morgantown, West Virginia

Completed: Summer 2008  
Cost: \$1.5 million

### Glade Springs Resort Clubhouse Expansion Daniels, West Virginia

Completed: Summer 2006  
Cost: \$1.1 Million

### West Virginia University Intermodal Garage Morgantown, West Virginia

Completed: Fall 2009  
Cost: \$14.5 Million

\*Key involvement in project with firm(s)  
other than Paradigm Architecture, Inc.

**Para·digm - (pär'e-dim') n. An example that serves as pattern or model.**

# David H. Snider, AIA

## Project Manager



Mr. Snider graduated from Auburn University with a degree in architecture and practiced in North Carolina before returning to his hometown of Birmingham, Alabama. He has spent the last nine years of his twenty-four year career with Paradigm Architecture. His responsibilities with Paradigm Architecture have included project management, construction documents, contract administration, and writing specifications. Project experience includes educational, healthcare, churches, libraries, schools, historic office buildings, airports, and commercial facilities.

### Architectural Registration

NC

AL—Pending

### Education

Auburn University  
Auburn, Alabama  
Bachelor of Architecture  
1984

Roofing Technology  
The Roofing Industry  
Educational Institute  
1995

### Professional, Civic and Other Activities

American Institute  
of Architects

#### Lanier Hospital Emergency Department Renovations Valley, Alabama

Estimated Completion: 2010

Cost: \$1.1 Million

(approx. \$150.00)

#### Lanier Hospital Surgery Addition Valley, Alabama

Completed: Summer 2006

Cost: \$4.2 Million

#### Russell Medical Center Physical Therapy Alexander City, Alabama

Completed: Spring 2008

Cost: \$1.6 Million

(approx. \$160 per SF)

#### Glade Springs Resort and Conference Center Daniels, West Virginia

Completed: Fall 2005

Cost: \$6 Million

#### Davis and Elkins College Athletic Center Elkins, West Virginia

Completed: Spring 2007

Cost: \$5.5 Million

#### Russell Medical Center Sleep Lab Alexander City, Alabama

Completed: Winter 2006

Cost: \$115,000

(approx. \$155 per SF)

#### Russell Medical Center Women's Center Alexander City, Alabama

Completed: Winter 2006

Cost: \$150,000

(approx. \$92 per SF)

#### Lanier Hospital Cardiopulmonary/Pharmacy Renovations Valley, Alabama

Completed: Summer 2008

Cost: \$1.165 Million

#### Russell Medical Center Women's Center Alexander City, Alabama

Completed: Winter 2006

Cost: \$150,000

(approx. \$92 per SF)

#### Russell Medical Center Professional Office Building #3 Alexander City, Alabama

Completed: Spring 2004

Cost: \$4.1 Million

#### Lanier Hospital ICU Renovations Valley, Alabama

Completed: Fall 2008

Cost: \$1.6 Million

#### Glade Springs Resort and Conference Center Daniels, West Virginia

Completed: Fall 2005

Cost: \$6 Million

#### Russell Medical Center Lab Addition and Renovation Alexander City, Alabama

Completed: Spring 2005

Cost: \$650,000

(approx. \$351 per SF)

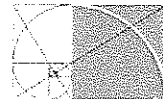
#### Russell Medical Center Satellite Lab Alexander City, Alabama

Completed: Winter 2003

Cost: \$100,000

# Jonathan L. Perry, AIA, LEED AP

Assistant Project Manager



**Paradigm  
Architecture**

Mr. Perry's responsibilities have included development of construction documents and drawings, project management, marketing presentations, bidding procedures, construction administration, and creating renderings for clients using computer aided design programs. He has a combined ten years of experience in commercial and residential architecture and has been with Paradigm Architecture for the last nine years. Project experience includes commercial, corporate, educational, governmental, healthcare, hospitality, industrial, institutional, recreational, and residential.

## Architectural Registration

NCARB

West Virginia

## Education

University of Alabama  
at Birmingham  
Birmingham, AL  
Master of Engineering  
in Construction Management  
2009

University of Tennessee,  
Knoxville, Tennessee  
Bachelor of Architecture, Cum  
Laude  
1999

Politechnika Krakowska  
Krakow, Poland  
Semester Abroad, 1998

## Professional, Civic and Other Activities

American Institute  
of Architects

LEED Accredited  
Professional

Construction Documents  
Technologist

Lecturer at University of  
Alabama at Birmingham

**Russell Medical Center  
Professional Office Building #3  
Alexander City, Alabama**  
Completed: Spring 2004  
Cost: \$4.1 Million

**West Virginia University  
Downtown Student Housing  
Morgantown, West Virginia**  
Completed: Summer 2009  
Cost: \$15.3 Million

**Davis and Elkins College  
Athletic Center  
Elkins, West Virginia**  
Completed: Spring 2007  
Cost: \$5.5 Million

**Morgantown Event Center  
and Parking Garage  
Morgantown, West Virginia**  
Completion: Spring 2010  
Cost: \$26.3 Million

**Two Waterfront Place  
Hotel and Conference Center  
Morgantown, West Virginia**  
Completed: Summer 2003  
Cost: \$35 Million

**Fairmont State University  
Colebank Hall Renovations  
Fairmont, West Virginia**  
Completed: Winter 2007  
Cost: \$1.5 Million

**Trinity Christian School  
Morgantown, West Virginia**  
Completed: Summer 2005  
Cost: \$8 Million

**The View at the Park  
Morgantown, West Virginia**  
Completed: Summer 2004  
Cost: \$6 Million

**Davis and Elkins College  
Madden Student Center  
Elkins, West Virginia**  
Completed: Summer 2003  
Cost: \$1.5 Million

**Chestnut Ridge Church  
Morgantown, West Virginia**  
Completed: Fall 2006  
Cost: \$10 Million

**Glade Springs Resort  
and Conference Center  
Daniels, West Virginia**  
Completed: Fall 2005  
Cost: \$6 Million

**West Virginia University  
Mylan Puskar Stadium  
Touchdown Terrace Club Addition  
Morgantown, West Virginia**  
Completed: Fall 2007  
Cost: \$800,000

**Fairmont State University  
Colebank Hall Data Center Build-Out  
Fairmont, West Virginia**  
Completed: May 2007  
Cost: \$400,000

**The Dayton Student Housing  
Morgantown, West Virginia**  
Completed: Fall 2008  
Cost: \$3.3 Million

**Hampton Center Renovations  
Morgantown, West Virginia**  
Completed: Fall 2007  
Cost: \$619,000

**Glade Springs Resort  
Clubhouse Expansion  
Daniels, West Virginia**  
Completed: Summer 2006  
Cost: \$1.1 Million

**Para-digm - (pär'e-dim') n. An example that serves as pattern or model.**



**MICHAEL GIOULIS**  
**HISTORIC PRESERVATION CONSULTANT**  
614 MAIN STREET  
SUTTON, WV 26601  
(304) 765-5716  
(304) 765-5464 (fax)  
[mike@michaelgioulis.com](mailto:mike@michaelgioulis.com)  
[www.MichaelGioulis.com](http://www.MichaelGioulis.com)

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**EDUCATION:**

B.S., City University of New York, City College, 1975.  
B. Arch., City University of New York, City College, 1977.

**BUSINESS EXPERIENCE:**

June 1984-Present	Self-employed: Historic Preservation Consultant; Design; Construction supervision and management. Design Consultant to Main Street West Virginia since 1988.
June 1979-June 1984	State of West Virginia, Department of Culture and History, Historic Preservation Unit: Coordinate state, local and federal Programs; review construction and other projects for compliance with standards; administer grant, survey and tax incentive programs; public addresses.
September 1982-January 1983	University of Charleston, Charleston, West Virginia: Instructor, "Principles of Planning", urban design, planning and historic preservation curriculum.
October 1977-June 1979	Vecellio and Kreps. Architects, Charleston, WV: drafting; working drawings; review shop drawings; preliminary sketches and site layout; finish selection; specification writing; design.
September 1975-June 1977	Jeri-Jo Knitwear, New York City, NY: Assistant Manager; supervised seven employees; billing.
1968-1973	Various temporary occupations including home construction and remodeling; tree trimming and landscaping.
1968-1973	Prescott Merrill and Turben, New York City, NY: stockbrokers; clerk; head of segregation department.



## **MICHAEL GIOULIS**

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### **CONTINUING EDUCATION:**

Historic Preservation Workshop, Cornell University, Ithaca, NY, June 9-16, 1979.  
Main Street Revitalization Conference, Charleston, WV, November 1979.  
Society for Commercial Archaeology, Washington, D.C., November 1979.  
Association for Preservation Technology: Quebec, October 1980; Banff, October 1982; Nashville, October 1983; Toronto, October 1984; Chicago, 1989; Chicago, 1997.  
Preservation Tax Incentives, National Trust for Historic Preservation, Philadelphia, December 1981.  
Sandstone Restoration Seminar, New York City, December 1982.  
The Window Conference and Exposition for Historic Buildings, Boston, MA, December 1986.  
National Main Street Center Town Meeting: Tulsa, OK 1992; Milwaukee, WI 1993; Tampa, FL 1994; Nashville, TN 1996; Portland, OR 1997; Pittsburgh, PA 1998; San Diego, CA 1999; Boston, MA 2000; Indianapolis, IN 2001; Ft. Worth, TX 2002; Cincinnati, OH 2003; Albuquerque, NM 2004; Baltimore, MD 2005; New Orleans, LA 2006; Seattle, WA 2007; Philadelphia, PA 2008; and Chicago, IL 2009.

### **ACCOMPLISHMENTS:**

Certified Architectural Historian under 36 CRF 61 through WV Division of Culture & History, SHPO, ongoing.  
Chairman, Braxton County Historic Landmarks Commission, 1981.  
Member, Bulltown Advisory Committee, 1980-1982.  
Speaker, Preservation Tax Incentives Workshop, Charleston, WV, April 1982.  
Speaker, Preservation Alliance of West Virginia: Harpers Ferry, WV, June 1982; Bluefield, WV, June 1983; Bramwell, WV, June 1988; Lewisburg, WV, June 1990; Martinsburg, WV, May 1997; Charleston, WV, May 1998; Weston, WV, September 2000; Elkins, WV, September 2001.  
Speaker, Planning Association of West Virginia, February 1983.  
Speaker, Energy Conservation in Historic Buildings, September 1983.  
Speaker, National Main Street Conference, Charleston, WV, December 1984.  
Speaker, Preservation Tax Incentives Workshop, National Conference of State Historic Preservation Officers, Charleston, WV, 1982.  
Guest Lecturer, Architectural History, Shepherd College, Shepherdstown, WV.  
Speaker, Main Street West Virginia Conference and Workshops – 1991 to the present.  
Guest Lecturer, College of Graduate Studies, Charleston, WV, 1996.  
Tour lecture, Goldenseal Annual Fall Tour, 1996.  
State Designers Representative on the National Executive Committee of Main Street Coordinators, 2008 to present.  
Guest Lecturer, Environmental Biology Department, City University of New York, Hunter, 2010.

### **PUBLICATIONS:**

Co-Author, "Historic Resource Surveys in West Virginia", 1983.  
Wonderful West Virginia, Volume 48, #11, "Marion County Round Barn".  
Culture and History, July/August 1984, "Maintenance of Structural Pigmented Glass Storefronts".  
Goldenseal, West Virginia Traditional Life, Volume 13, #1, Spring 1987, "Evidence of Times Past, A Preservationist Looks At The Sutton Photographs".  
Downtown Property Owner's Maintenance Manual, West Virginia Development Office, May 1992.  
Tax Credits for Historic Properties, West Virginia Development Office, 1996.

NATIONALLY RECOGNIZED FOR ENGINEERING EXCELLENCE

## Energy Management Engineering

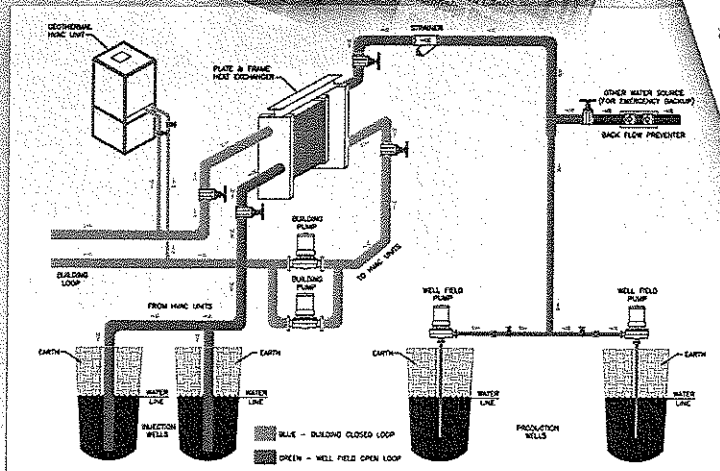
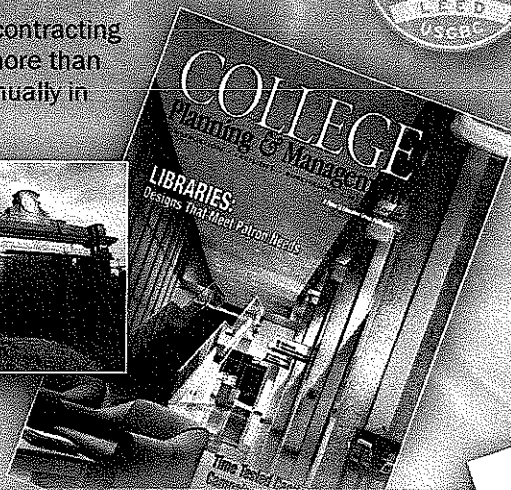
### Ohio University—Athens

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

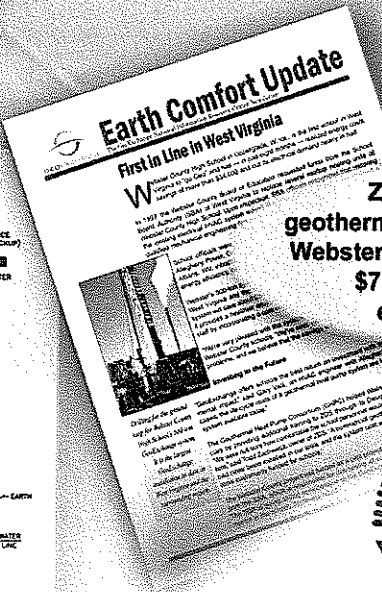


### ZDS offers these and other energy management services:

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



Geothermal Open Loop System Designed by ZDS



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



Design/Consulting Services

Building 5

Building 6

Building 7

Building 3

Building 4

Below: East Wing

West Wing

Museum of Culture & History

The Governor's Mansion



LEED Certified Candidate

An integration of nine buildings  
involving over 1.6 million square  
feet of building space.

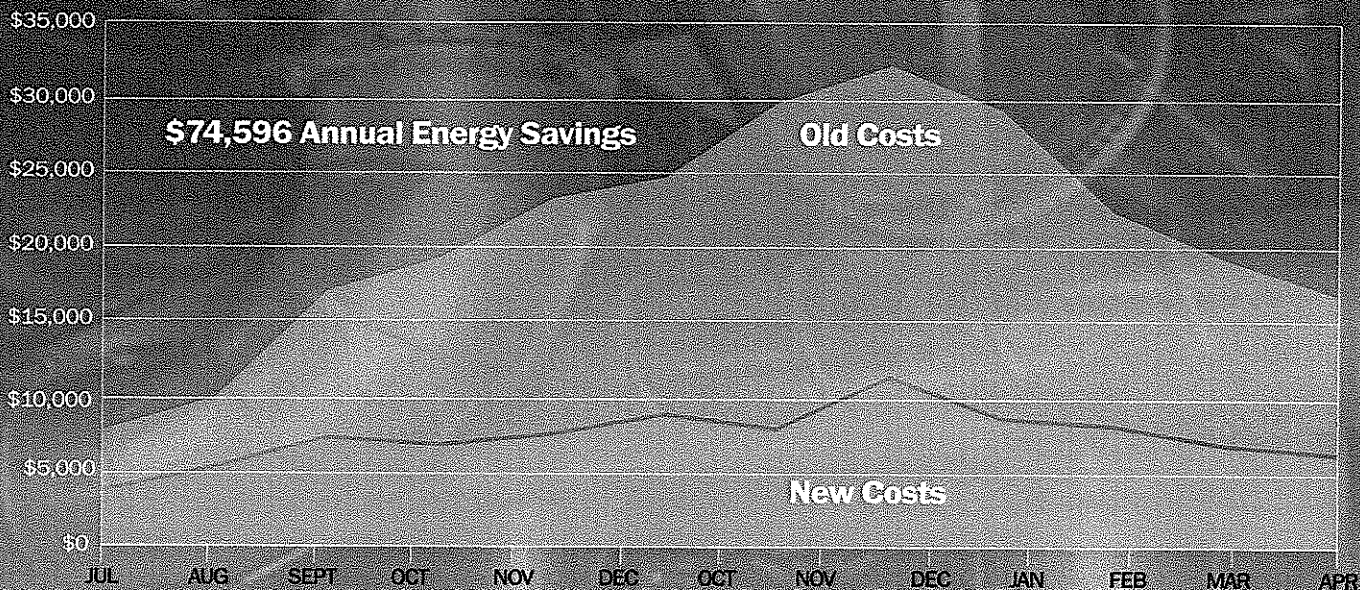
West Virginia  
Capitol Complex  
\$20,000,000 investment  
paid from savings which  
includes a new central  
heating plant serving all  
these buildings.



Design/Consulting Services



## ZDS Geothermal Energy Engineering Savings



*"We're very pleased with the system.  
We've seen energy savings and have had zero maintenance problems."  
Webster County High School*



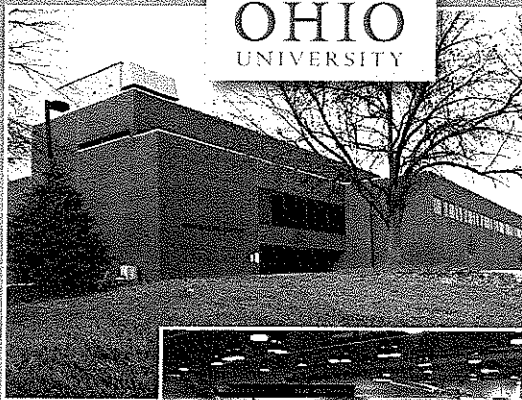
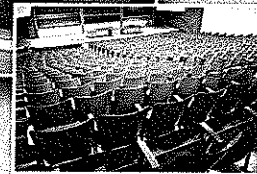
Ohio University Chillicothe Campus realizes an annual energy savings from \$200,000 to \$300,000 through ZDS master planning, HVAC/Electrical/Plumbing design, and the established comprehensive Performance Contracting program.



Bennett Hall



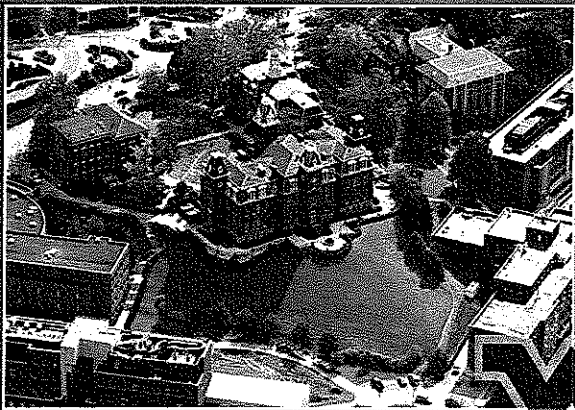
Stevenson Center Library



Shoemaker Center and Gymnasium



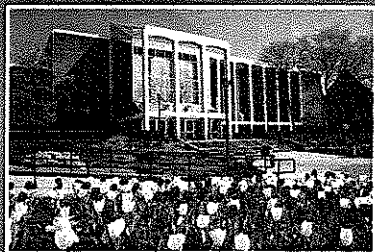
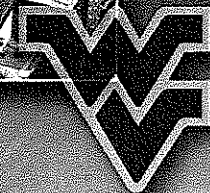
Design/Consulting Services



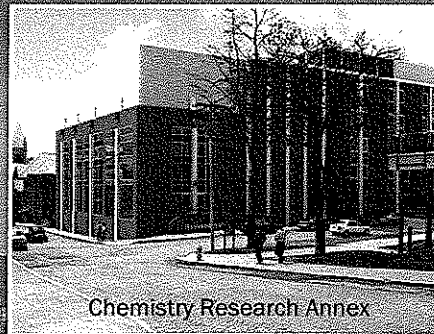
## West Virginia University

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

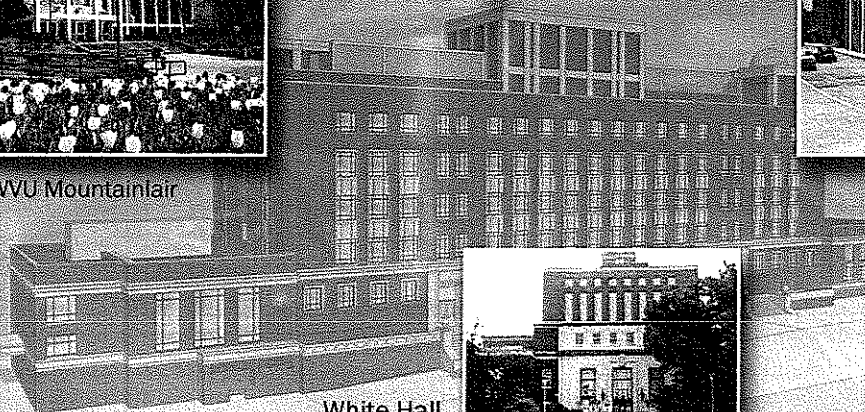
Renovations result in a \$300,000 to \$400,000 in annual savings in energy and related costs.



WVU Mountainlair



Chemistry Research Annex



White Hall

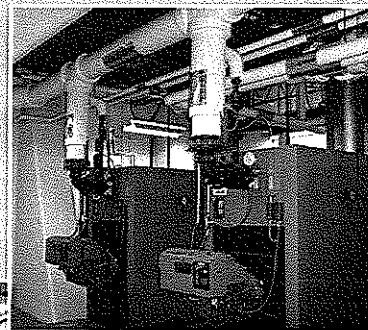


Stewart Hall

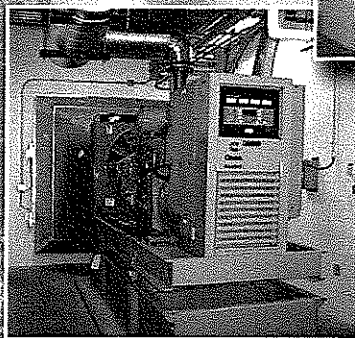


## West Virginia Center for Culture and History

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



HVAC Boiler System



Emergency Generator



Design/Consulting Services



# Quality Control & Management

## Project Management



### Teamwork



*Fairmont State University  
Falcon Center*



*Chestnut Ridge Church*



*Fairmont State University  
Classroom*

It has always been our philosophy that successful projects are the result of successful team relationships. And on any given construction project, there are a lot of relationships that come into play: owners, developers, facilities managers, architects, engineers, contractors, subcontractors, financial institutions, attorneys, code agencies, and tenants. We have learned a lot about how to work successfully together with all parties involved. Every project, whether large or small, is unique and requires strong leadership. Being a small business, you can be assured that local, senior staff and an experienced project manager will be assigned to all of our projects. Based on the specific requirements of the project, we always put together a team of consultants and staff who would best serve the needs of that individual project and client – while always maintaining a constant flow of communication and personal service with the owner. We have relationships with some of the best consulting companies in the region and the country to bring together the appropriate talents to meet the needs of a particular project. We currently have active relationships with consultants in WV, AL, IN, MI, OH, TX, NY, and PA.

### Project Delivery

We have successfully used a wide range of project delivery types on both public and private projects: design-bid-build, negotiated, design-build, develop-design-build, fast track, construction management agency, and construction management where the construction manager is also the contractor. We have extensive experience on fast-track construction projects, ranging from \$1 million to \$35 million. We assist the owner in developing critical path items and developing multiple early release packages while the design is still ongoing. These packages typically include initial site work, foundation, superstructure, long lead equipment, shell, and interior fit out. Although there are greater risks that must be assumed by the owner with this method, the benefits from meeting tight deadlines typically outweigh these risks. Expedient decisions must be made by all involved and open lines of communication and transparency are crucial. On any given type of project delivery, we have a quality control plan that includes developing an initial schedule with the owner for the entire project through the design, bid, and construction phases. Milestone points will be established and will include deliverables from both the design team and the owner. These milestone points will include sets of progress drawings and specifications for both the owner's and design team's review. We have an extensive "in house" coordination and review process that includes engineering coordination, specification coordination, code and life safety reviews, and the owner's program review. Before moving to each subsequent phase, the Owner will have an opportunity to review and "sign off" on each progress set so that all parties are always clear as to the direction the project is heading.

*Fairmont  
State  
University  
Hunt  
Haught Hall*



**Par-a-digm - (pär'e-dīm') n. An example that serves as pattern or model.**

# Quality Control & Management

## Project Management



### Technology



Fairmont State University  
Hunt Haught Hall

Paradigm Architecture prides itself on streamlining our project delivery and management methods. One of the ways we do this is to utilize the latest technology, including web-based project collaboration sites, electronic communication, electronic submittals for review and approval, video conferencing and the latest software packages for 3-dimensional renderings, Computer Aided Drafting (CAD), and Building Information Modeling (BIM). Our current software packages include the latest versions of Revit Architecture, Autocad Architecture, 3-D Studio, and Speclink. Far from the older methods of hand drafting, these tools help us to deliver faster and better coordinated projects, have fewer problems in the field, and provide the owner with excellent visualization tools during project development. We are always pursuing additional training and education for all our staff, including "in house" workshops, seminars, and online education for topics such as green building, BIM, project delivery and management, and current codes.

### Building Information Modeling (BIM)



Fairmont State University  
Hunt Haught Hall

Of particular interest is our use of BIM. More than just a 3D visualization tool, BIM allows for all disciplines to conduct "clash detection" tests for various disciplines and building components before the project goes to bid. This is extremely crucial for above ceiling coordination among the structural and MEP components. Use of BIM technology can result in better coordinated construction documents and less changes in the field. In addition, BIM allows the Owner to virtually experience the project before it is constructed. Utilizing Animations, we can "walk" the Owner through the building so that room layout surprises are eliminated during design. The use of renderings allows for careful material selections and presentations to internal departments and project stakeholders. At the conclusion of the project, the as-built model can be turned over to the Owner's Facilities Management Department for an actively working database to be used for years to come.

### File Transfer Protocol (FTP)

Throughout the life of the project, Paradigm hosts the FTP site. Paradigm sets up the site and all permissions for the site. If necessary, we lead a training session for the entire project team on how to use the site. The site will be maintained from the signing of Owner/Architect Agreement until the Project Closeout. All formal correspondence, as well as all required deliverables, throughout the duration of the entire project shall be uploaded to the FTP site. Paradigm creates an archive CD or DVD of all files on the project's FTP site at Project Closeout and delivers to the Owner.

Chestnut  
Ridge  
Church



Para-digm - (pär'e-dīm') *n.* An example that serves as pattern or model.

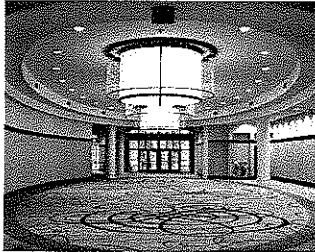
# Quality Control & Management

## Project Management

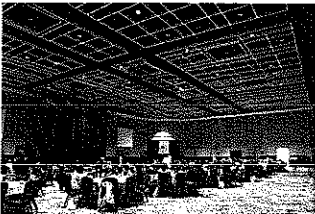


### Document Review and Coordination

In addition to using BIM, Paradigm has a tested methodology of coordination reviews and "check set" submissions throughout various stages of the project. These typically fall at the conclusion of Schematic Design, Design Development, 50% Construction Documents, and 95% Construction Documents. The Project Manager will carefully review and coordinate the documents from all disciplines and issue markups back to the team for incorporation. These checks will include (but are not limited to) coordination of utility layouts above ceiling with the structural systems, all vertical risers, life safety and code reviews, building program backchecks, specifications, and incorporation of the Owner's **Design Guidelines and Standards**. The Owner will be given an identical "check set" at each submission for review and comment. In addition to Paradigm's existing coordination methodology, we have adopted and are incorporating the RediCheck Review System. "... Proven to reduce costs and avoid unnecessary delays ... RediCheck is the only coordination review system recognized by both the American Institute of Architects and the American Consulting Engineers Council." At the Owner's request, an independent Quality Control Review can be conducted by RediCheck Associates.



*Morgantown Event Center*



*Morgantown Event Center*

### Facilities Operations and Maintenance

Recognizing the importance of long-term building operations and maintenance concerns, as well as building lifecycle costs, we encourage the involvement of the Owner's Facilities Management and/or Physical Plant staff throughout the project. We prefer to allow the engineers to get direct feedback from these individuals and we value their input to the selection of materials and systems. We diligently work to avoid past issues and concerns that have risen on past projects. In addition, our consultants have abundant experience in providing solutions and alternatives to pre existing maintenance conditions to alleviate those problems, provide a better building environment, and reduce lifecycle costs. This experience gives our team first-hand experience on the importance of having this staff involved with the design and allows for better decision making with the materials and systems selection.

*Morgantown Event Center*



**Par-a-digm - (pär'e-dīm´) n.** An example that serves as pattern or model.

# Quality Control & Management

## Schedule / Costs



### Critical Path Method

Paradigm Architecture has abundant experience in managing multiple projects with critical deadlines. Meeting these deadlines all starts with a clear definition of the schedule constraints. The ultimate project completion date is not the only date that should be targeted on the delivery schedule. Paradigm Architecture utilizes critical path method scheduling to define "Milestone" Dates for the entire project. These include deliverables dates for various phases, design time, Owner's review, Agency and Authority having Jurisdiction Review, procurement time, and construction time. Rather than viewing the schedule as a linear process, it is of utmost importance to determine those items that fall on the "critical path." If those deadlines are missed then the schedule must be adjusted immediately or the project will fall behind. We prefer to view the Schedule as a method of Monitoring and Control throughout the duration of the project. The entire design team and the Owner will be constantly informed and updated regarding schedule performance and corrective action will immediately be taken as necessary.



*Glade Springs Resort  
Hotel and Conference Center*



*WVU Intermodal Garage*

### Fast Track

We have been involved with multiple project delivery types where time is of the essence and have the capability to perform Fast Track Delivery Services if necessary. With Fast Track Delivery, the project is broken up in multiple construction packages with early release dates. Examples of these packages include Earthwork / Site Utilities, Foundations, and Superstructure. This allows construction to begin before the design has been complete.

*Two  
Waterfront  
Place  
Hotel &  
Conference  
Center*



**Para·digm - (pär'e-dīm') n. An example that serves as pattern or model.**

# Quality Control & Management

## Schedule / Costs



### Cost Control



*Glade Springs Clubhouse*



*Two Waterfront Place  
Hotel & Conference Center*

Paradigm Architecture understands the importance of the project budget and takes great pride in being able to meet these budgets. Project budget is not just the construction budget. We assist the owner in reviewing all aspects of the total project budget, including pre-design services, such as surveys, field investigations and geotechnical explorations, furniture, fixtures, and equipment (FFE) packages, and project closeout. Due to our vast experience with multiple project delivery types, including design-build and construction management, we have firsthand experience with monitoring costs throughout the entire project. In our nearly ten years of operations, we have never had an Owner "reject all bids" due to cost overruns. Many times, to help control costs on the project, we will work with the Owner early on to establish a base bid package that will deliver within budget. We will then establish a series of alternate packages that can be selected from once bids are received. We will also work with the Owner to establish an Owner's contingency allowance for those unforeseen issues that may arise.

Using internal cost data, and national databases, we are able to provide the Owner rough order of magnitude and schematic cost estimating for initial project development. We often conduct feasibility studies for clients to help them with initial project evaluations. We feel that utilizing the services of a contractor or construction manager is extremely beneficial to the design process and helps keep the project moving in the right direction. Their services, such as cost estimating, constructability reviews, value engineering, current bid market analysis, and CPM scheduling have proven to be valuable assets to both the architect and owner. They are the experts in this area, just as we are the experts in the area of design, so why shouldn't we work together from day one to give the owner the best possible project? At times, we recommend both the architect and owner hire these consultants so that two third party reviews can be conducted and then any major differences be reconciled prior to bidding the project. Using these unique approaches we find that it is rare for one of our projects to be over budget or behind schedule.

### Firm's Ability to Provide Services Within the Project Time Frame

Paradigm Architecture is confident that we can provide a high level of service in a timely manner. We have historically managed multiple complex projects with significant construction budgets.

*Two  
Waterfront  
Place  
Hotel &  
Conference  
Center*



**Par-a-digm - (pär'e-dīm')** *n.* An example that serves as pattern or model.



## Honors & Awards



*WVU Transportation Center  
& Garage*



*Upper Monongahela  
River Center*

*Upper  
Monongahela  
River  
Center*

### **Excellence in Construction by the Associated Builders & Contractors, Inc.**

- 2010 – Morgantown Event Center  
Morgantown, WV
- 2010 – GSA USDA Office Building  
Morgantown, WV
- 2010 – WVU Transportation Center  
and Garage, Morgantown, WV
- 2007 – Waterfront Marina  
Morgantown, WV
- 2007 – Chestnut Ridge Church  
Morgantown, WV
- 2004 – Madden Student Center at  
Davis and Elkins College, WV
- 2004 – Two Waterfront Place Hotel  
And Conference Center  
Morgantown, WV
- 2003 – The Jackson Kelly Building  
Morgantown, WV
- 2001 – Russell Cancer Center  
Alexander City, AL

### **Alabama Masonry Institute**

- 2004 – Top Block Award—Russell  
Professional Office Building III  
Alexander City, AL

### **Main Street Morgantown**

- 2008 – Best New Construction Award  
Marina Tower, Morgantown, WV
- 2008 – Best New Office Award, Spilman  
Thomas Battle, Morgantown, WV

### **Pittsburgh Corning Glass Block**

- 2004 – Circle of Design Excellence  
Award  
Lightning Strikes Family Fun  
Center Trussville, AL

### **West Virginia American Institute of Architects**

- 2010 – Honor Award, Upper  
Monongahela River Center  
Morgantown, WV
- 2010 – Merit Award, West Virginia  
University Transportation Center  
and Garage, Morgantown, WV



**Par-a-digm - (pär'e-dim') n. An example that serves as pattern or model.**

## MONEY &amp; MANAGEMENT

<http://chronicle.com/money>

## Paying for Performance

A growing number of colleges sign contracts with guarantees of savings of energy and money

BY MARTIN VAN DER WERF

TECHNICIANS are crawling over the campus of Ohio University, charting the use of electrical current in every office and dormitory room, measuring the brightness of lighting, the consumption of water, the air temperature in every room and alcove. They are trying to document every way that the university can cut its energy costs.

The answers are in little places. Ohio will replace 9,000 exit signs with exit lights that use 80 percent less energy and last 25 times longer. It will replace windows. It will put smaller, more efficient fluorescent tubes in the light fixtures. It will probably be watering its lawns and fields with well water rather than water from the tap. And, as a symbol of its turn away from a longtime reliance on coal, the university is considering buying its own natural-gas field, in the nearby hollows of the Appalachians.

It will be a 20-year project that will save millions of dollars per year in energy costs. Yet, to do it, the university won't have to come up with any new money up front.

In April, it signed a \$25-million "performance contract" with Vestar, a subsidiary of Cinergy Corporation, a Cincinnati-based energy company.

### HOW IT WORKS

Performance contracts are an innovative financing method that is increasing in popularity on campuses. The process works like this: A contractor or energy company explores a campus and recommends ways to save money on energy bills. Then the contractor makes the changes or hires others to make them, and guarantees, in writing, that the savings the college will realize will cover the costs of the changes, usually within 10 years. The company can also arrange financing, so the college does not have any upfront costs. The college pays the company for construction and equipment in installments that roughly equal the amounts by which the college is cutting its energy bills.

The companies benefit by selling more of their products. For many colleges, the greatest appeal of the contracts is that they can use the savings to help eliminate backlogs in deferred maintenance. Many of them use the savings to buy more-efficient chillers, ventilation systems, and other utility-related equipment.

"This is a way for many institutions to get capital quickly," says Mohammad H. Qayoumi, vice chancellor for administrative services at the University of Missouri at Rolla, who leads sessions on utilities policy at institutes sponsored by the Association of Higher Education Facilities Officers.

"Are we going to see more? Definitely. We are going to see things going in that direction, especially with the deregulation of energy companies. They are increasingly going to want to sell electricity not only as a commodity, but all kinds of services along with it," he says.

University officials who have entered into the contracts point out, however, that the deals are immensely complicated. Any institution that is considering such a contract should consult with outside

Todd A. Zachwieja, a  
Consultant with ZDS  
Design/Consulting Services:  
"Some schools  
have moved forward with  
contracts without fully  
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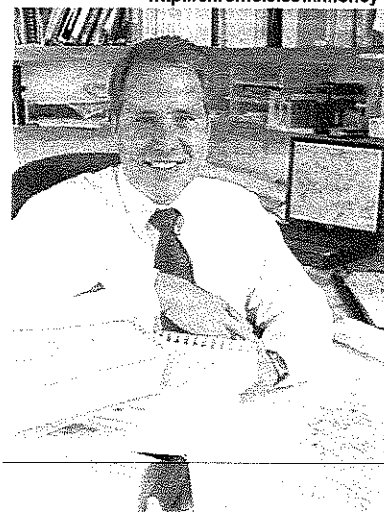
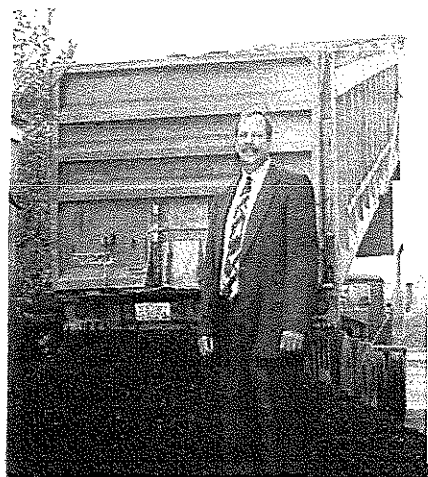


PHOTO COURTESY FOR THE CHRONICLE



Sherwood G. Wilson  
of Ohio U. says its  
new energy contract  
will help it cover  
the costs of deferred  
maintenance.

PHOTO COURTESY FOR THE CHRONICLE

experts, says Joe Kelley, executive director of facilities at Louisiana State University at Baton Rouge, which signed one of the first performance contracts by any college, an \$18.8-million deal in 1990.

"We sort of had to find a pathway through the jungle on this one," says Mr. Kelley. His advice: "Get every word of it in writing."

Todd A. Zachwieja, principal of ZDS Design/Consulting Services an Ohio and West Virginia-based consultant on performance contracting, says there are now more than 100 companies in the business. The traditional market leaders are Fortune 500 companies like Honeywell, Johnson Controls, and Sempra Energy. Many of the newest ones are utilities trying to broaden their services.

### AN UNTAPPED MARKET

The size of the market is difficult to quantify. Johnson Controls alone has about \$1.6-billion in contracts, about 100 million worth with colleges, says Tom Proffitt, marketing manager for performance contracting at the Milwaukee-based company.

The college market, however, remains relatively untapped. Mr. Proffitt estimates that fewer than 20 percent of institutions have signed such contracts. But higher education has been a steadily growing segment of his company's business, he says.

Performance contracts were born in the 1970's, during the Arab

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oil embargo, when energy savings were at a premium. But they were not widely used until the mid to late 1980's, when they became particularly popular at hospitals, which could get some Medicaid and Medicare reimbursement for facilities improvements, says Mr. Zachwieja, chief executive officer of ZDS Design/Consulting Services, in St. Albans, W.Va.

Slowly, as states have passed laws allowing multiyear financing, elementary and secondary schools and local governments are beginning to sign the contracts. About 35 states have now enacted the laws, says Mr. Proffitt.

In 1994, President Clinton signed an executive order allowing federal agencies to make the agreements, and the contracts have begun to proliferate, mostly at military bases and at office buildings owned by the General Services Administration.

#### STAYING ON THE SIDELINES

Other than pioneers like Louisiana State; however, most higher-education institutions have stood on the sidelines.

Many were scared away by earlier performance contracts, in which hospitals and some government agencies didn't save as much as they expected. In the 1980's and early 1990's, the contracts were usually structured to give the company a share of the savings. Those incentives encouraged companies to maximize profits by doing the least amount of work to save the amount of money specified in the contract. But the long-term benefits for the institution were dubious.

Mr. Zachwieja, the West Virginia consultant, says that if colleges are careful about what they specify in their contracts, the real savings will come after the contract expires, as newly installed equipment continues to cut energy costs for years.

"Some companies are structuring contracts that only give benefits during the life of the contract," he explains. "You really aren't saving any money unless you get benefits that are lasting."

Louisiana State, for example, decided that it wanted all of the energy savings rather than sharing them, and, in 1992, bought out its contract with CES/Way International, an energy-contracting company, which has since been acquired by Houston-based Sempra Energy.

"We didn't really need the savings guarantee, because the savings were there, the technology was proven, and it was, in our minds, a low-risk project, so we took it over ourselves," says Mr. Kelley, the facilities director.

Colleges also feared losing control of the operation of their buildings, something that indeed came about in early contracts.

"Some schools have moved forward with contracts without fully understanding what they were doing," says Mr. Zachwieja. "Let's say they agree to a shutdown schedule — the lights shut down at a certain time, as opposed to before, when a custodian just shut down the lights on a room-by-room basis. Then the college decides to go to a nighttime-use schedule. Then it won't be able to produce the savings that were projected in its contract. How do you deal with that? All those possibilities must be considered."

Some college officials say they think such kinks have been worked out.

Sherwood G. Wilson, associate vice president for facilities and auxiliaries at Ohio University, believes that more institutions will sign the contracts as an answer to deferred-maintenance problems.

"We are faced with a backlog of deferred maintenance," says Mr. Wilson, who estimates Ohio's total at \$55-million. "We have resources that fall a long way short of covering all of our needs." The contract will allow Ohio to take care of more than \$10-million of the backlog.

Nationally, deferred-maintenance costs for colleges reached an estimated \$26-billion, according to a 1996 report by the facilities-officers association. Chipping away at that total will become a big selling point as more companies approach colleges about the contracts, says Mr. Proffitt, of Johnson Controls.

"Everyone has looked at the K-12 market, and this has worked at K-12," he says. "You look at universities. There are greater bureaucracies, they may have credit issues, they have more-complex systems. Quite frankly, you go where the low-hanging fruit is, and that has been the school systems. The more-complex clients usually come later."

At Ohio, it took three years to get the administration, the Board of Trustees, and the state Board of Regents to approve the contract, mostly because of bureaucratic problems, says Mr. Wilson. When key financial people left, he had to explain and justify the contract to their replacements. It is one of the largest performance contracts ever signed by a university.

Then there is the cultural shift for a region where the economy is centered on energy consumption.

Ohio University has always been run by burning the very ground beneath it. Like clearing a forest to build a log cabin, the university has counted on nearby coal mines to stoke the boilers in the bowels of its sprawling campus.

But then came the Clean Air Act, and black-lung disease, and acid rain, and unemployment for many of the miners who dug up the ore that, in this part of the world, is particularly high in pollution-causing sulfur.

"We have tried to support the local industry, but this is even better," says Gene Mapes, an associate professor of environmental and plant biology and director of environmental studies. "I think this is a real leadership role, because we are modeling behavior." The university is trying to get area residents to acknowledge that the local economy must shift its emphasis from coal to tourism and small industry.

#### CREATING A LONG-TERM RELATIONSHIP

Construction is set to begin in June on the first phase of the contract with Vestar, in which the company will make changes in nine of the 200 or so buildings on campus.

"Our math building is a huge building, with lots and lots of lights that are inefficient," says Mr. Wilson. "Our library is the same way." In addition, showerheads and perhaps toilets will be changed in two residence halls to models that use less water. The power plant will get new controls, which will more closely match energy production to demand.

This is the beginning of a relationship that is expected to last for 20 years, says Mr. Wilson. The project will comprise five phases, with one starting every two years. Each phase will have a guarantee that the costs will be repaid by energy savings over the ensuing 10 years. Ohio can terminate the contract after any of the phases.

#### SAVING \$25-MILLION

If the university goes through with all of the phases, the contract guarantees that Ohio will save \$25-million, although Mr. Wilson and Vestar officials have analyzed only about half of the seven million square feet of building space on the campus.

Construction costs in the first phase are estimated at \$4.2-million. Ohio University is financing the project itself, probably with bond issues. Financing costs for the first phase are estimated at \$231,000. If the changes in the first phase save \$700,000 a year, as projected, the savings will have paid for the costs, including financing, in a little more than six years. Each succeeding phase will involve more-complex projects, with longer payback schedules. Plans are still being drawn up for those phases.

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Mr. Wilson says he has not calculated how much all of the work will eventually save the university. In the first phase alone, he says, the equipment being installed will continue to save Ohio \$700,000 annually for 20 years. The total savings after subtracting the cost of the equipment and financing would exceed \$9-million.

At Louisiana State, the annual energy bill before the performance contract was \$12.5-million. Now it is about \$8.5-million, even with 10 percent more students on the Baton Rouge campus, says Peter N. Davidson, director of energy services.

The contracts are structured to guarantee that the savings will cover not only the costs of construction, new equipment, and financing, but also, in some cases, a fee, generally ranging from 1 to 4 percent of the size of the contract, for a guarantee that the contractor will make up the difference if the college's projected savings fall short of expectations.

Usually, the savings guaranteed in the contract are about 80 percent of the company's estimated energy-cost reductions, says

Michael Besspiata III, director of facilities management at Georgetown College, in Kentucky.

Johnson Controls last year paid out about 1 percent of the total savings it guaranteed but could not meet in its \$1.6-billion worth of contracts, says Mr. Proffitt.

As performance contracts become more common, Mr. Besspiata says, any size institution can benefit. Georgetown College, for example, signed a \$750,000 performance contract last year with Enertech, a subsidiary of LG&E Energy Corporation.

Mr. Besspiata moved to Georgetown in May 1998, from the Southern Baptist Theological Seminary. Both institutions have fewer than 2,000 students. And each one now has modern energy-management systems, which tightly control energy use across the campus, paid for by the savings produced in performance contracts.

"I think a lot of colleges think they are too small to really get much benefit," says Mr. Besspiata. He projects savings in the current fiscal year of \$85,000 on a typical annual utility bill of \$1-million. "That's real money," he says. ■

For More Information contact:

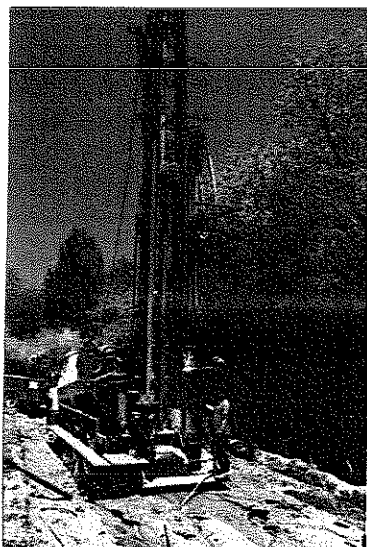
**Todd A. Zachwieja, PE, CEM**  
**Principal**  
**ZDS Design/Consulting Services**  
**91 Smiley Drive**  
**St. Albans, WV 25177**  
**Phone (304) 755-0075**  
**Fax (304) 755-0076**

July/August 1999

## First in Line in West Virginia

Webster County High School in Upperglade, W. Va., is the first school in West Virginia to "go Geo" and has - in just eight months - realized energy costs savings of more than \$34,000 and cut its electrical demand nearly in half. **Update - 2000 annual energy savings exceed \$74,500.**

In 1997 the Webster County Board of Education requested funds from the School Board Authority (SBA) of West Virginia to replace several rooftop heating units at Webster County High School. Upon inspection, SBA officials recognized that restoring the existing electrical HVAC system wasn't the best solution. They recommended a qualified mechanical engineering firm review the system and develop better options.



School officials were leaning towards a propane gas heating system when Allegheny Power, Greensburg, PA, and ZDS Design/Consulting Services, St. Albans, WV, introduced them to GeoExchange, which could provide greater energy efficiency, cost savings, temperature control, reliability and safety.

Webster's 500-ton system is the largest GeoExchange installation to date in West Virginia and the surrounding region. School officials estimate that the system will save about \$50,000 a year in heating and cooling costs. **Update - Energy savings increasing every year and now exceed \$74,500 annually.** In addition, it provides a healthier environment for Webster's 600 students, its faculty and staff by incorporating a cost-effective, outside air ventilation system.

**"We're very pleased with the system,"** said Harry Given, facilities manager for Webster County schools. **"We've seen energy savings, had zero maintenance problems, and we believe that the savings will be even greater over time."**

## Investing in the Future

"GeoExchange offers schools the best return on investment with the lowest environmental impact," said Gary Valli, an HVAC engineer with Allegheny Power. "In most cases, the life-cycle costs of a geothermal heat pump system are lower than any other system available today."

The Geothermal Heat Pump Consortium (GHPC) helped Webster County school officials by providing additional training to ZDS through its Design Assistance Program. "We were not sure how comfortable the school personnel would be with this type of system," said Todd Zachwieja, owner of ZDS. "A commercial geothermal system of this size had never been installed in our area, and the system cost was higher than HVAC systems customarily funded for schools."

*Drilling for the ground loop for Webster County High School's 500-ton GeoExchange system. It is the largest GeoExchange installation to date in West Virginia and the surrounding region.*

The Webster County project was funded as a pilot project through a \$3.25 million grant from the SBA, which is responsible for overseeing all school construction in the state. The SBA is giving strong consideration to the GeoExchange system's positive performance at the school, Zachwieja noted. Significant lifecycle cost savings could allow more schools to benefit from funding for GeoExchange projects in the future.

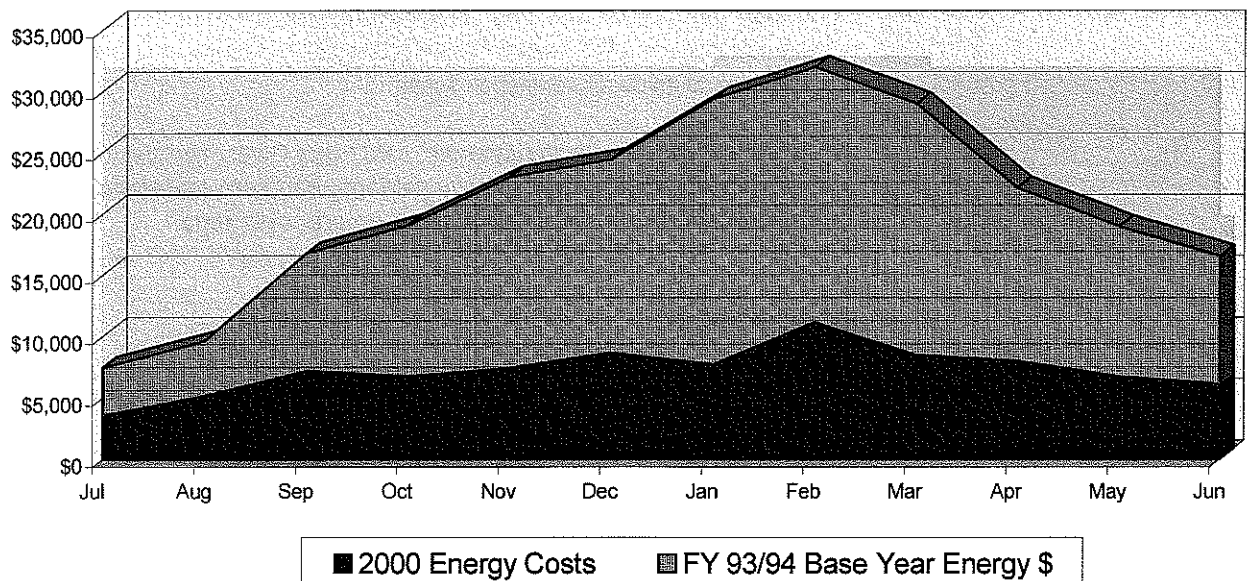
### Improved Comfort and Efficiency

The Webster County High School system includes 240 vertical loop heat exchangers inserted 304 feet into the ground. The new units that replaced the old multizone units incorporate exhaust air heat recovery for the incoming outdoor air. "That's another benefit of the system -bringing the outdoor air indoors," Given said. ***"We've improved our indoor air quality; everyone appreciates that."***

"Schools are definitely realizing the benefits of GeoExchange for comfort and energy-efficiency," Valli said. To help, Allegheny Power is producing a technically detailed video on the step-by-step GeoExchange installation at the Webster County High School.

"Many schools have HVAC systems that are reaching the end of their useful life," Valli said. "These schools will look at a lot of options. Our job is to educate the decision-makers that GeoExchange is a viable and cost effective solution."

### Webster County High School Geothermal Heat Pump Energy Savings



For More Information contact: Todd A. Zachwieja, PE, CEM, Principal  
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91 Smiley Drive, St. Albans, WV 25177  
Phone (304) 755-0075, Fax (304) 755-0076



RFQ No. 44R11047STATE OF WEST VIRGINIA  
Purchasing Division**PURCHASING AFFIDAVIT**

**West Virginia Code §5A-3-10a states:** No contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and the debt owed is an amount greater than one thousand dollars in the aggregate.

**DEFINITIONS:**

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

"Debtor" means any individual, corporation, partnership, association, limited liability company or any other form or business association owing a debt to the state or any of its political subdivisions. "Political subdivision" means any county commission; municipality; county board of education; any instrumentality established by a county or municipality; any separate corporation or instrumentality established by one or more counties or municipalities, as permitted by law; or any public body charged by law with the performance of a government function or whose jurisdiction is coextensive with one or more counties or municipalities. "Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceeds five percent of the total contract amount.

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

Under penalty of law for false swearing (*West Virginia Code §61-5-3*), it is hereby certified that the vendor affirms and acknowledges the information in this affidavit and is in compliance with the requirements as stated.

**WITNESS THE FOLLOWING SIGNATURE**Vendor's Name: ZDS Design/Consulting ServicesAuthorized Signature: *Deed D. Fanning* Date: October 20, 2010State of West VirginiaCounty of Putnam, to-wit:Taken, subscribed, and sworn to before me this 20 day of October, 2010.My Commission expires November 1, 2014.

AFFIX SEAL HERE

NOTARY PUBLIC

*Patricia Hart*