

WV Department of Administration
Coal Heritage Trail Authority
RFQ# CHA12017



Chapman
Technical
Group

Expression of Interest for A&E Services
July 12, 2012



ARCHITECTURE

SCHOOLS AND CLASSROOMS • GOVERNMENT FACILITIES • RECREATION FACILITIES
INDUSTRIAL BUILDINGS • AIRPORT TERMINALS AND SUPPORT FACILITIES • OFFICE BUILDINGS
HISTORIC RENOVATION AND RESTORATION • COMPUTER MODEL BUILDING AND RENDERING



July 12, 2012

RECEIVED

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WV PURCHASING
DIVISION

Ms. Connie Hill
Department of Administration
Purchasing Division
2019 Washington Street, East
Charleston, West Virginia 25305

**Re: RFQ CHA12017
Coal Heritage Trail Authority
Building Restoration**

Dear Ms. Hill:

Chapman Technical Group is most interested in providing architectural and engineering services to the Coal Heritage Trail Authority for the restoration of the historic building in downtown Mt. Hope, West Virginia.

Chapman Technical Group is very experienced in renovation and restoration projects involving buildings on the National Register. Currently underway is the reconstruction of the Marlinton Train Depot, which started out as a restoration project but when the depot burned to the ground, it became a reconstruction project. Because we had thoroughly documented the original structure, we were able to develop plans that will faithfully restore the depot to its historic appearance.

Our office in St. Albans is also a National Register project. The former post office was developed as an adaptive reuse project and was designed in conformance with the Department of Interior standards. We have also designed renovation and restoration projects at the Upshur County Courthouse, which is eligible for the National Register and our restoration work was designed according to Department of Interior standards.

We would use ZDS Design/Consulting Services for mechanical and electrical engineering. ZDS is nationally recognized for its energy management engineering and offers LEED compliance, energy audits, utility monitoring and forecasting, as well as excellent mechanical and electrical systems design.

Chapman Technical Group recently designed two projects directly related to West Virginia's Coal Heritage. Working as part of a team for the National Park Service, we provided landscape architectural services for the Nuttallburg Mine Complex preservation project at the New River National River. We also designed the Upper Big Branch Miners Memorial in Whitesville, which besides memorializing those who lost their lives in the UBB disaster, will include a graphic history of coal mining in West Virginia.

200 Sixth Avenue
St. Albans, WV 25177
304.727.5501
FAX 304.727.5580

Buckhannon, WV
Martinsburg, WV

www.chaptech.com



Ms. Connie Hill
July 12, 2012
Page Two

Our team of architects, engineers, and interior designers can help develop your building program and put together a cost-effective plan of action. If short-listed for the project, we will be prepared to talk in more detail about your project. Meanwhile, if you have any questions or need additional information, please contact me.

Sincerely,

CHAPMAN TECHNICAL GROUP

Joseph E. Bird, ASLA
Vice President



1

**Overview of
Chapman Technical Group**

2

**Overview of
ZDS Design/Consulting Services**

3

Relevant Project Experience

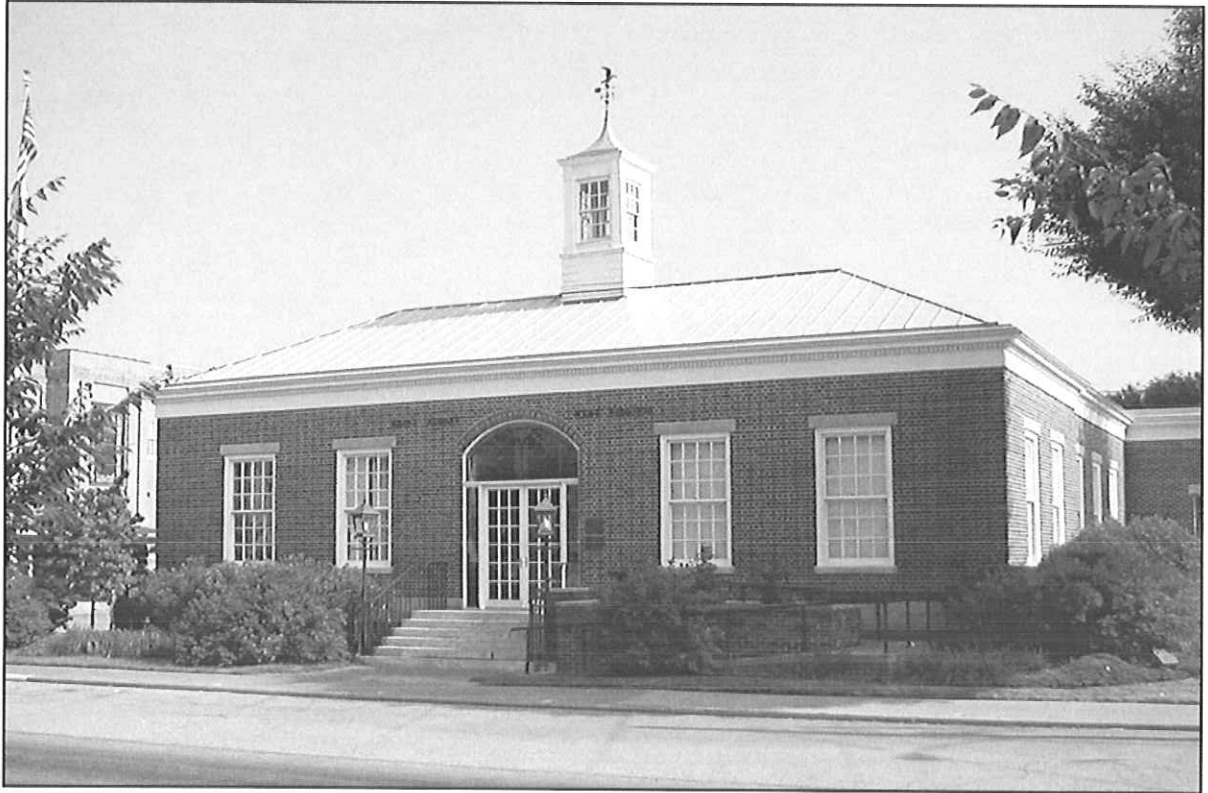
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Project Team Resumes

5

References

Company Overview



Chapman Technical Group's St. Albans Office

Chapman Technical Group is a full-service consulting firm with offices in St. Albans, Buckhannon, and Martinsburg, West Virginia offering an extensive range of professional architectural, engineering, interior design and landscape architectural services. Established in 1984, Chapman Technical Group has steadily grown to a diverse firm of professionals, many of whom were educated in West Virginia colleges and universities. We have achieved an outstanding reputation for providing high-quality design projects, while meeting client schedules and budgets and have received numerous awards for our work.

Our facilities are both state-of-the-art and architecturally significant. Our St. Albans office is a former post office and is now on the National Register of Historic Places.

Chapman Technical Group offers a broad range of professional services.

- Airport Design
- Architecture
- Civil Engineering
- Fire Pumping & Protection
- Interior Design
- Landscape Architecture
- Recreational Facilities
- Roads, Highways, & Bridges
- Site Development
- Space Planning
- Surveying
- Water & Wastewater Systems

Awards



WINNER - "COMMISSIONER'S ENGINEERING ACHIEVEMENT AWARD", WVDOT - DIVISION OF HIGHWAYS - 2011: Large Roadway Category for WV10 North Davy Branch to Rum Creek; 2000: Large Bridge Category for WV10 Buffalo Creek Bridge, Logan County, West Virginia.

AMERICAN INSTITUTE OF ARCHITECTS - MERIT AWARD FOR EXCELLENCE IN ARCHITECTURE, 2009 - Interstate 79 Rest Areas.

AMERICAN SOCIETY OF CIVIL ENGINEERS - NATIONAL - SUPERIOR EMPLOYER AWARD, 2009, Support of Young Professionals in the Private Sector.

AMERICAN COUNCIL OF ENGINEERING COMPANIES-WV - ENGINEERING EXCELLENCE AWARD, 2009, Gold Award - Special Projects Category for the Mercer County Airport Runway Safety Area Project.

AMERICAN INSTITUTE OF ARCHITECTS - HONOR AWARD FOR EXCELLENCE IN ARCHITECTURE, 2008 - Upshur County Courthouse Restoration and Renovations.

AMERICAN COUNCIL OF ENGINEERING COMPANIES-WV - ENGINEERING EXCELLENCE AWARD, 2008, Bronze Award - Wastewater Category for the Spring Run State Fish Hatchery Improvements.

AMERICAN COUNCIL OF ENGINEERING COMPANIES-WV - ENGINEERING EXCELLENCE AWARD, 2007, Silver Award - Structures Category for the Mercer County Airport Runway Safety Area Project.

GARY KING COMMUNITY SERVICE AWARD, 2006. GOOD SCOUT RECIPIENT, 2005.

AMERICAN COUNCIL OF ENGINEERING COMPANIES-WV - ENGINEERING EXCELLENCE AWARD, 2003, Gold Award - Water Treatment Category for the City of Fairmont Water Treatment Plant Project.

AMERICAN COUNCIL OF ENGINEERING COMPANIES-WV - ENGINEERING EXCELLENCE AWARD, 2002, Gold Award - Transportation Category for the Raleigh County Memorial Airport Runway Rehabilitation Project.

FINALIST - "COMMISSIONER'S ENGINEERING ACHIEVEMENT AWARD", WVDOT - DIVISION OF HIGHWAYS - 1999: Large Roadway Category for WV10 Buffalo Creek - Taplin Project; 2000: WV10 Buffalo Creek - Huff Junction Project, both in Logan County, West

AMERICAN COUNCIL OF ENGINEERING COMPANIES-WV - ENGINEERING EXCELLENCE AWARD, 1999, Silver Award - Water and Wastewater Category, for the City of Beckley Piney Creek Wastewater Treatment Plant Project.

ENTREPRENEUR OF THE YEAR AWARD - FINALIST, 1999 and 2000, Sharon L. Chapman, President, was named one of twenty finalists in the West Virginia Area Entrepreneur of the Year Award. Sharon was recognized for leading Chapman Technical Group to become one of the most highly regarded engineering firms in the state after the death of her husband and company founder, Harvey R. Chapman.

"EXPECT THE BEST FROM WEST VIRGINIA AWARD", 1998, Charleston Regional Chamber of Commerce. The Expect the Best program was created to recognize West Virginia businesses and organizations that promote quality of life at home, work, and in the community so that individuals and organizations will implement quality principles and practices leading to unprecedented pride and economic growth in West Virginia.

HONOR AWARD, West Virginia Chapter of the American Society of Landscape Architects, 1994, Shrewsbury Street Area Redevelopment Plan, for excellence in planning and design projects. Joseph E. Bird, ASLA, Project Manager.

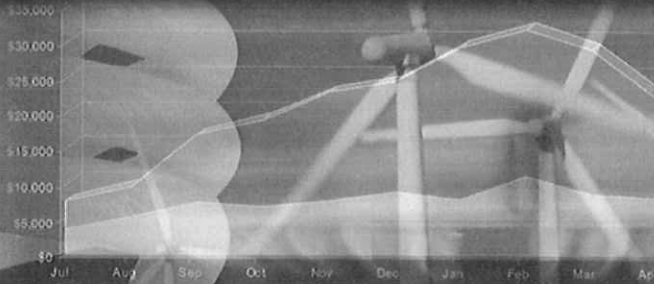
"GOVERNOR'S AWARD FOR ENGINEERING EXCELLENCE", 1990, The West Virginia Chapter of the American Public Works Association, in recognition of outstanding Public Works Engineering and Design of Projects within West Virginia.

DUNDEE CEMENT COMPANY ANNUAL DESIGN AWARD, 1988, Yeager Airport Taxiway Overlay Project. Harvey R. Chapman, P.E., Project Manager.

AUSTIN C. PALMER "OUTSTANDING FACILITY DESIGN AWARD", 1988, City of Bridgeport Swimming Pool Complex. Harvey R. Chapman, P.E., Project Manager.

"GEORGE WARREN FULLER AWARD", Harvey R. Chapman, P.E., 1984, Robert G. Belcher, P.E., 2001, and Sharon L. Chapman, 2005, Jeffery D. Ekstrom, P.E., 2010, American Water Works Association, for distinguished service in the water supply field in the State of West Virginia.

NATIONALLY RECOGNIZED FOR ENGINEERING EXCELLENCE

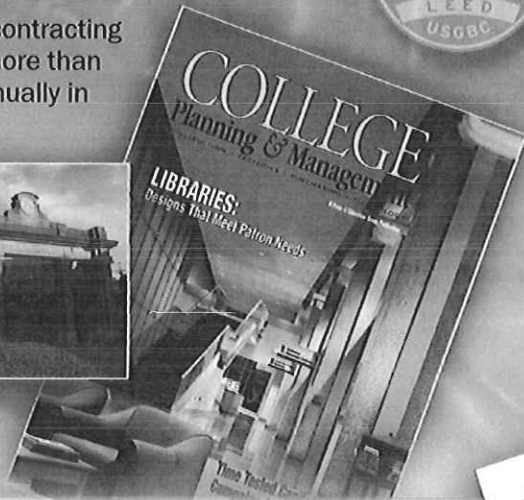


Energy Management Engineering



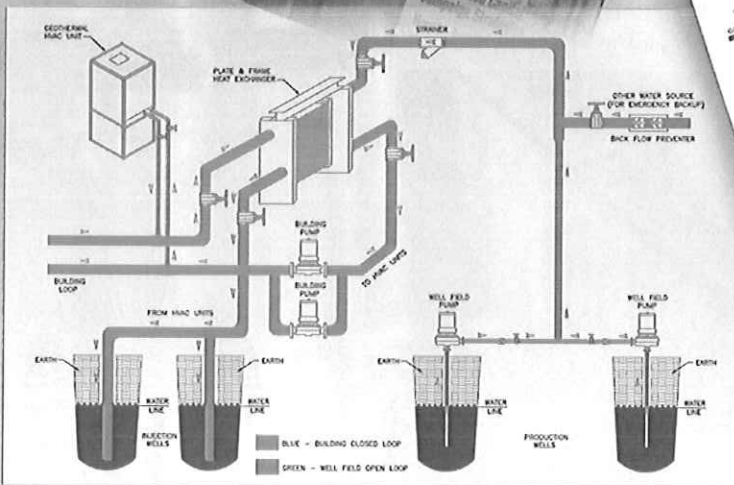
Ohio University—Athens

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

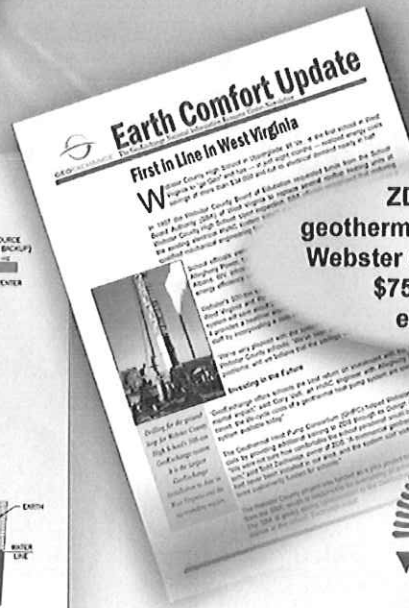


ZDS offers these and other energy management services:

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



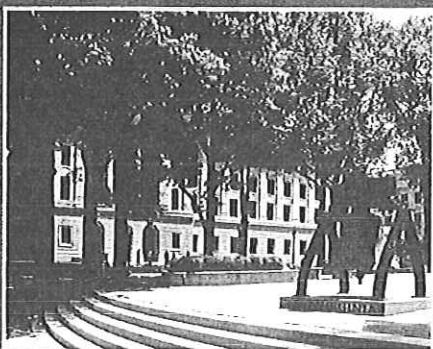
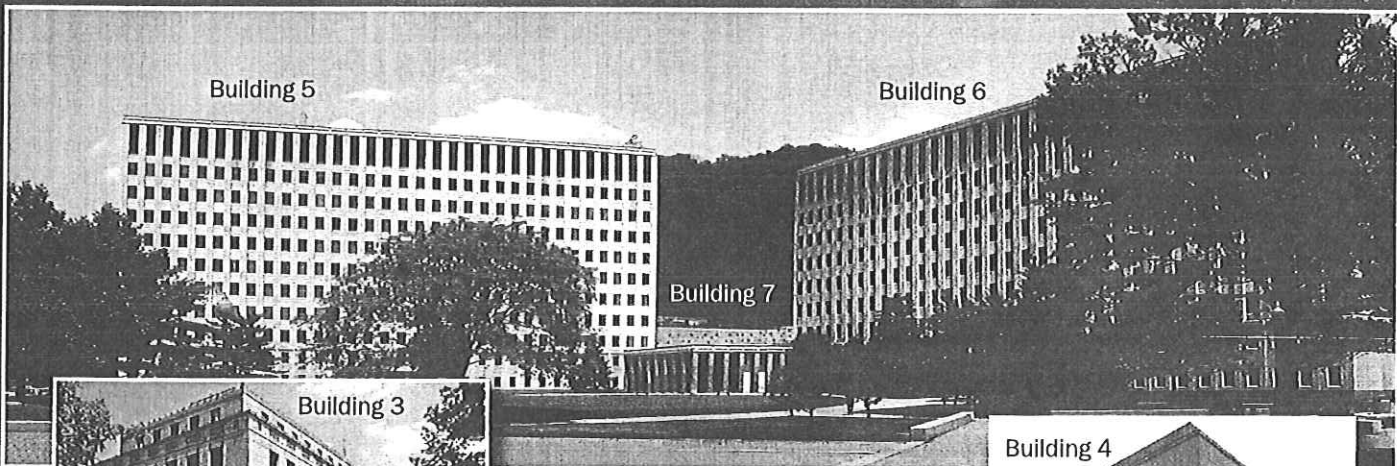
Geothermal Open Loop System Designed by ZDS



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

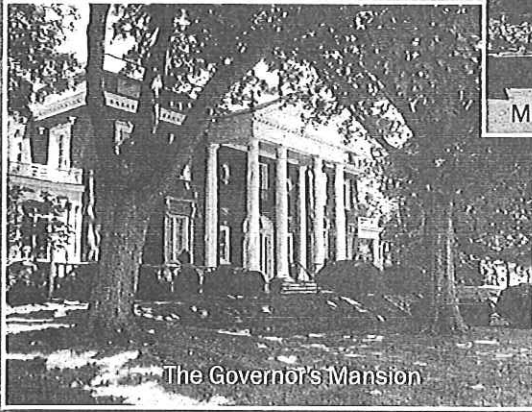
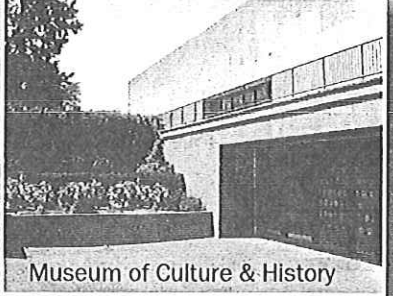


Design/Consulting Services



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

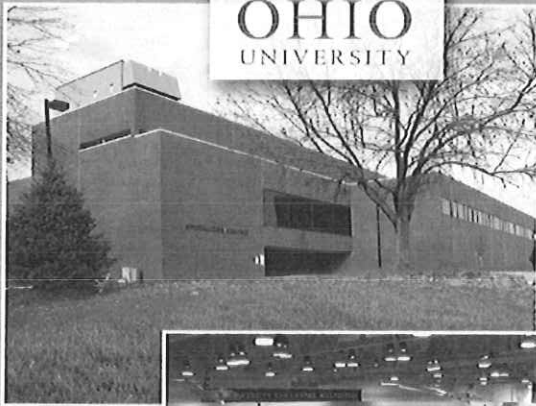
ZDS Geothermal Energy Engineering Savings



*"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.



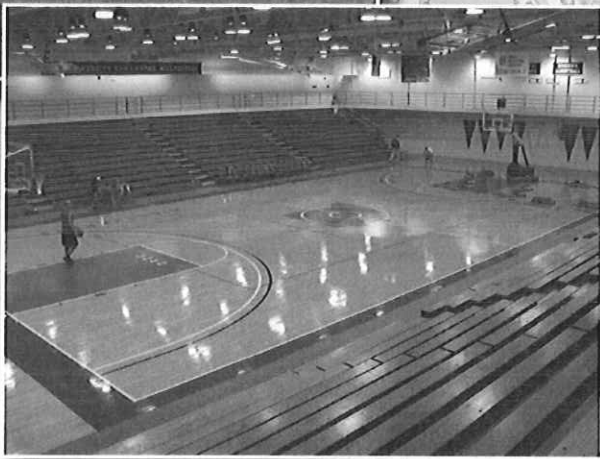
Shoemaker Center and Gymnasium



Stevenson Center Library



Bennett Hall



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.



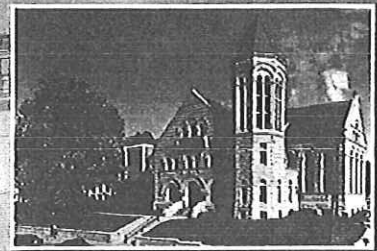
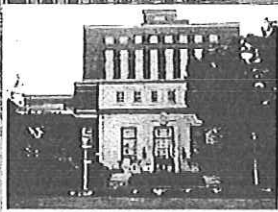
WVU Mountainlair



Chemistry Research Annex



White Hall

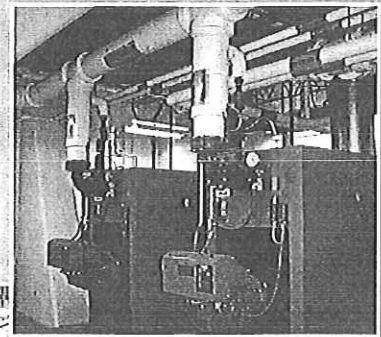


Stewart Hall

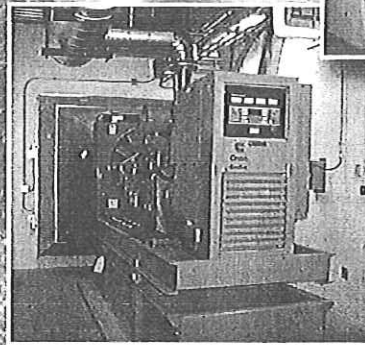


West Virginia Center for Culture and History

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



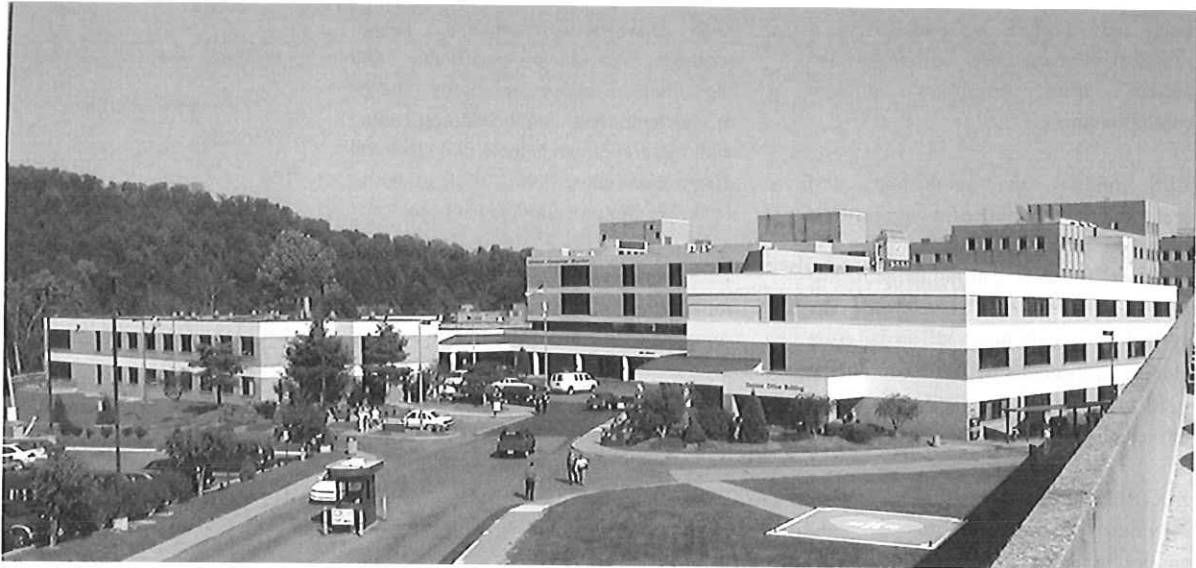
HVAC Boiler System



Emergency Generator



Design/Consulting Services



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.

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

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

SERVICES

MECHANICAL
INDOOR AIR QUALITY
ENERGY

ELECTRICAL
COMMISSIONING

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

ZDS assigns the production staff according to the nature of the project and the work force necessary to meet the schedule. The Principal in charge of that project determines if consultants are needed and coordinates all areas. After bidding, a Principal of ZDS coordinates visits to the job site regularly, all the way through the post-warranty inspection.

ZDS believes in the team approach when providing engineering design and consulting services. We start with our client as the number one member on our team. We listen to the needs and concerns of our client and that becomes the basis for our design. Our design expertise includes:

MECHANICAL DESIGN

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

ELECTRICAL DESIGN

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

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

ZDS works with all levels of the client's staff: the building owner, 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.

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

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

COMPANY LEGAL NAME

ZDS 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

OFFICES

St. Albans, WV

Morgantown, WV

NUMBER OF EMPLOYEES

ZDS currently employs 11 design professionals.

INDOOR AIR QUALITY SERVICES

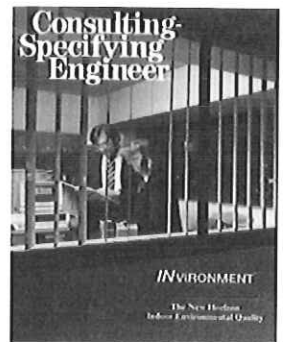
ZDS provides consulting engineering services for the indoor air quality (IAQ) environment. These services include: strategic planning for renovation and new construction projects; technical research and writing; specialized applications software development; corporate and professional training programs; 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 INvironment™ Handbook of Building Management and Indoor Air Quality, by Chelsea Group and published for Powers Educational Services.
- Technical Review Panel for the Quarterly publication of the INvironment™ Newsletter, by Chelsea Group for Powers Educational Services.
- Ventilation for a Quality Dining Experience: a Technical Bulletin for Restaurant Owners and Managers, released in January 1993.
- The New Horizon: Indoor Environmental Quality, published as a supplement to 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 INvironment™ Professional.
- Editorial Advisory Board member of POWER PRESCRIPTIONS™ Indoor Air Quality Publication by Electric Power Research Institute.

- 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.

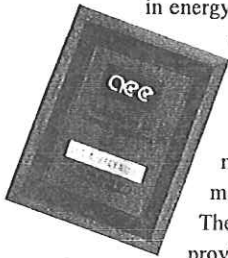


SUMMARY

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.
- Implementing energy management improvements.
- Determining, quantifying and assisting in securing available Utility and Government grants.
- Evaluating and documenting utility savings.

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



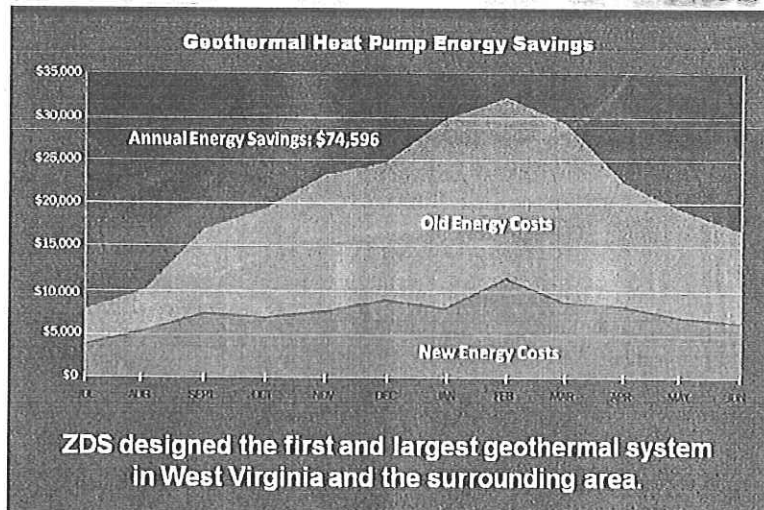
Recent projects include:

- Interconnecting boilers and chiller plant systems.
- Designing Geothermal HVAC systems.
- Optimizing HVAC equipment and operating sequences.
- Installing Direct Digital Control (DDC) Energy Management Systems.
- Replacing inefficient lighting equipment with energy efficient 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.

Webster County Schools





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 expired. The mechanical and electrical systems have continued to become more complex with sophisticated control systems and equipment, and a mountainous amount of changing technology. If not properly addressed, building owners could face numerous operational problems from "Sick Building Syndrome," excessive energy costs, and uncomfortable indoor environments. Commissioning is the missing link between design and implementation.

Subsequent to joining ZDS, Todd Zachwieja established commissioning services for one of the nation's largest energy service companies. He is also a LEED'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.
- Early identification and resolution of system discrepancies while designers and contractors are still under contract and on the job.
- Verification of system performance while meeting financial restraints.
- Commission new and renovated facilities to minimize or eliminate IAQ issues before they become problems.

ZDS and its consultants offer commissioning services for their commercial and institutional clients, including meeting LEED'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.

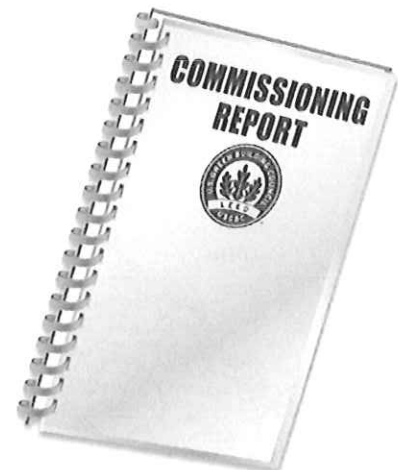
NATIONAL RECOGNITION

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

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

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

The ZDS staff has the expertise with codes and standards. We have extensive experience in conducting engineering code surveys of existing facilities. Our staff has excellent working relationships with the West Virginia Fire Marshal's Office and the West Virginia Department of Health and Human Resources.

In addition to comprehensive Engineering services from an experienced design team, another major consideration in the selection of your engineer and design staff should be their track record. ZDS' organization has an unbeatable, long running, and well-known track record for meeting our clients' needs, on time and within budget, with outstanding quality.

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

CLIENTS

- Greenbrier West High School
- Woodrow Wilson High School
- James Monroe High School
- Winfield High School
- East Hardy High School
- Raleigh County Schools
- Elkins Middle School
- Ritchie County Middle School
- McDowell County Southside K-8
- Smithville Elementary
- Webster Springs Elementary

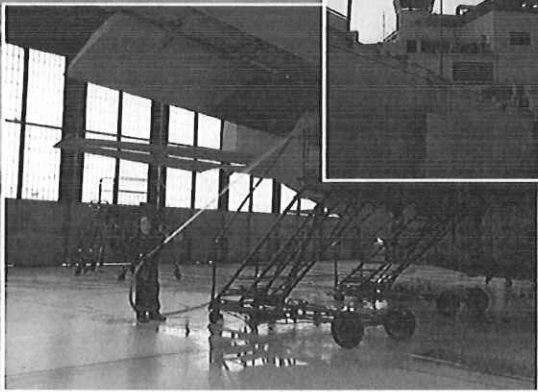


ZDS LEED Project Experience



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

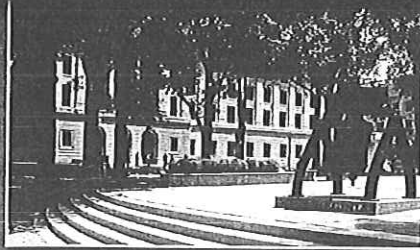


Design/Consulting Services

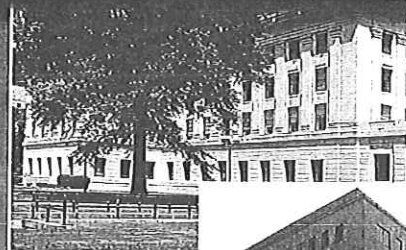
ZDS LEED Project Experience



Buildings 5, 6 and 7



East Wing



West Wing



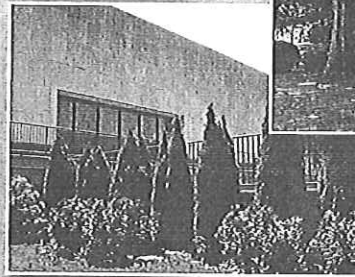
Building 4



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



UBB Miners Memorial



Upper Big Branch Miners Memorial

Whitesville, West Virginia

Construction is nearing completion on the Upper Big Branch Miners Memorial in Whitesville, West Virginia. The memorial was designed by Chapman Technical Group as a way to honor the memory of 29 miners who died in the April 5, 2010 disaster.

The centerpiece of the memorial is a 48-foot long, 8-foot high, granite monument cut to reflect the mountains of West Virginia and etched with silhouettes to represent the lost miners. The back of the monument will be etched with the history of mining in West Virginia. Other smaller tributes and memorials will be located within the memorial park. The memorial was designed to be very visible from the highway and yet also provides intimate spaces for quiet contemplation and opportunities for learning about West Virginia's coal heritage.



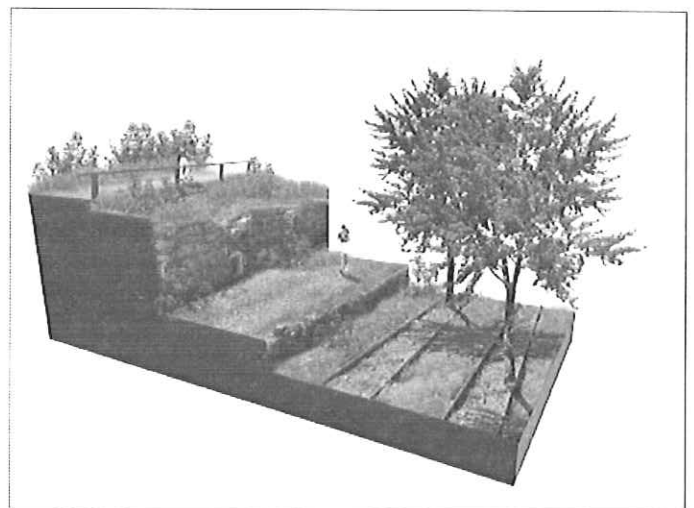
Construction photo prior to installation of granite monument and landscaping.



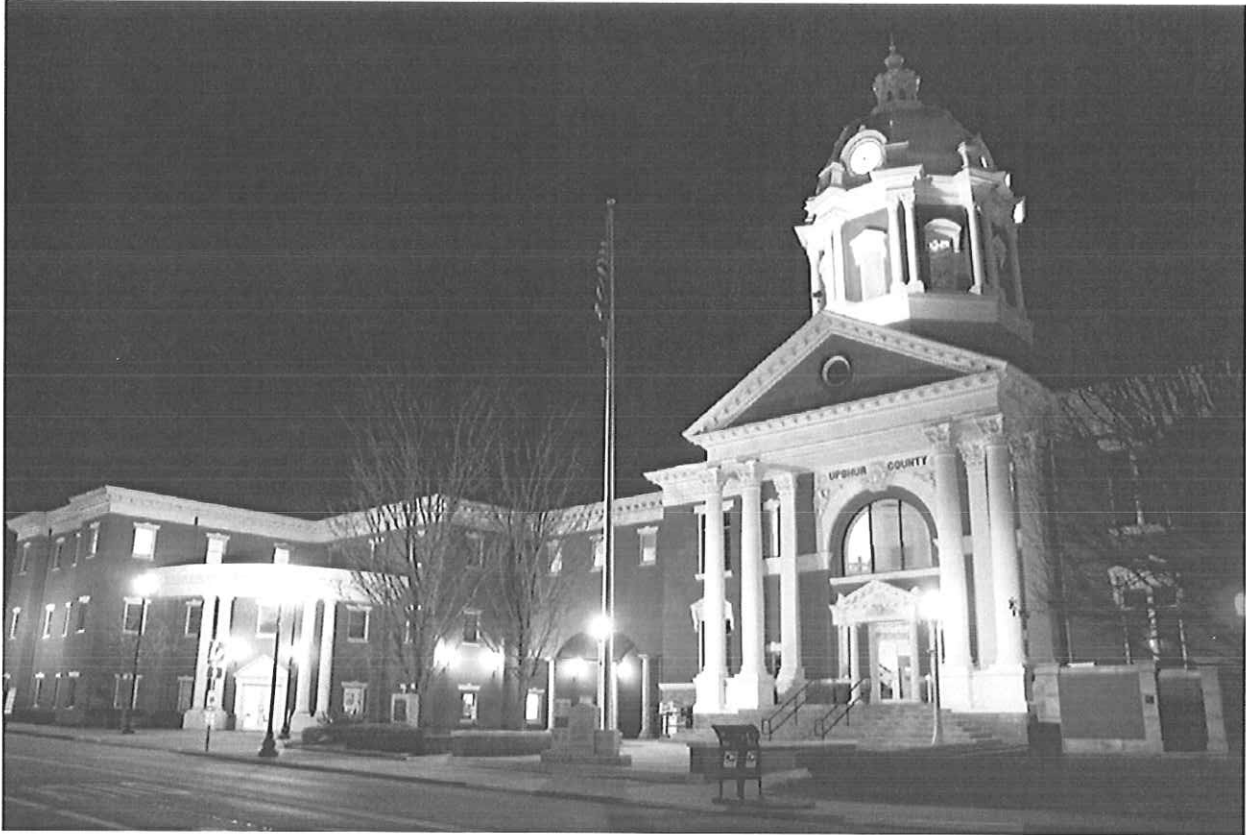
Nuttallburg Mine Complex

New River Gorge, West Virginia

Nuttallburg was the site of an old coal town built around a mining complex in the New River Gorge National Park. As a National Park Service project, the area was rehabilitated to allow visitors to explore the ruins of the town and mine operation. Although accommodations were developed for the visitors, care was taken to maintain as much of the site in the same condition as it might have been when the mine was still functioning. On-site materials were used as much as possible and new materials were selected that would "age" quickly to reflect the historic nature of the site. Chapman Technical Group provided landscape architectural and site design services.



Concept sketch at coke oven trail.



Upshur County Courthouse Complex

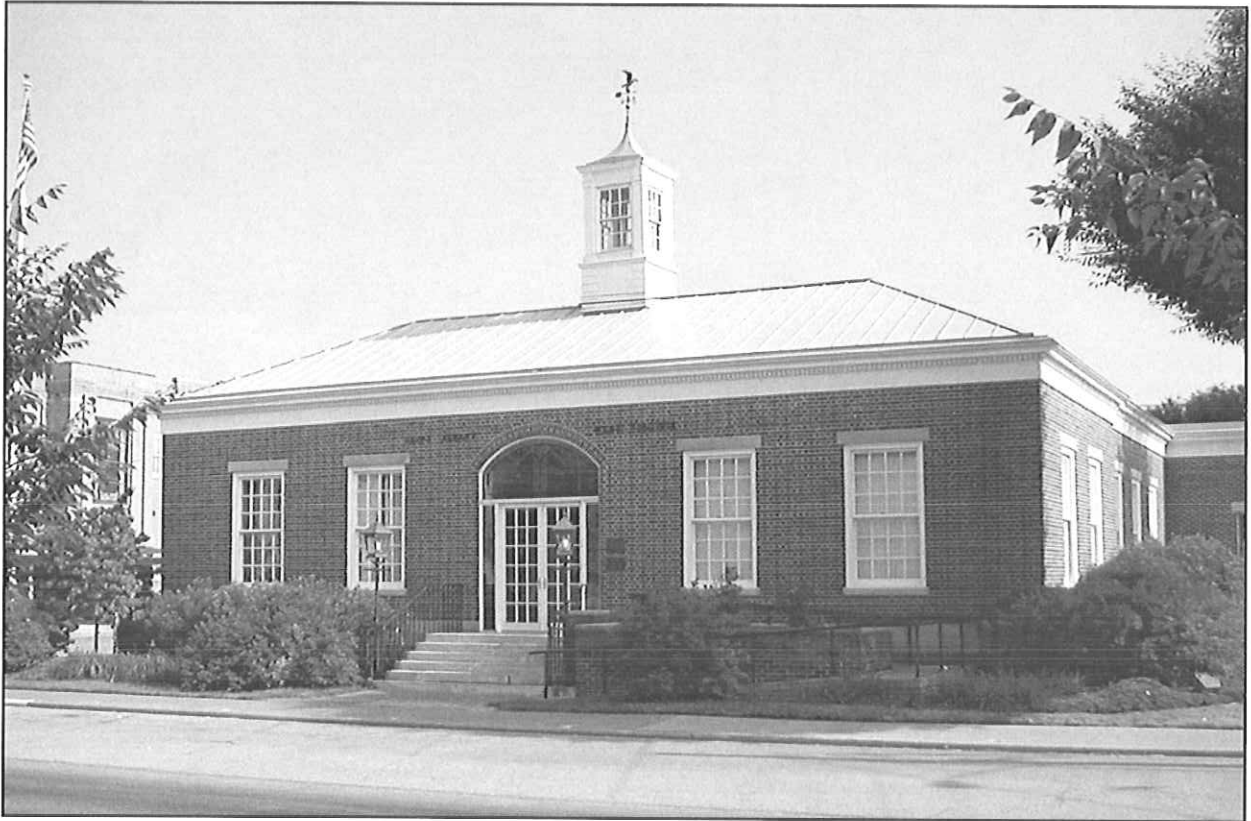
AIA Honor Award 2008

Upshur County Commission
38 West Main Street
Buckhannon, West Virginia 26201

Since the design and construction of the courthouse annex in 1995, Chapman Technical Group has been involved in several improvement and restoration projects at the Courthouse in Buckhannon. In 2005, a lift was installed and the plaza renovated to make the original courthouse accessible. In 2006, the Courthouse dome and clock tower were completely restored. In 2007, the Courthouse portico stonework was restored, and in 2008 the work was honored by the AIA/WV for Excellence in Architecture.



Dome Restoration Detail



Chapman Technical Group

Post Office Box 1355
St. Albans, West Virginia 25177

Complete design of the renovation of an existing 7,000 square-foot building and an 8,000 square-foot addition. The former building served as the St. Albans Post Office and is on the National Register of Historic Places. The new building now serves as the Engineering/Architectural Offices of Chapman Technical Group. In addition to its beauty, the building is a very functional E/A office facility. The electrical and communications conduits were upgraded to allow for a fully integrated computer local area network.

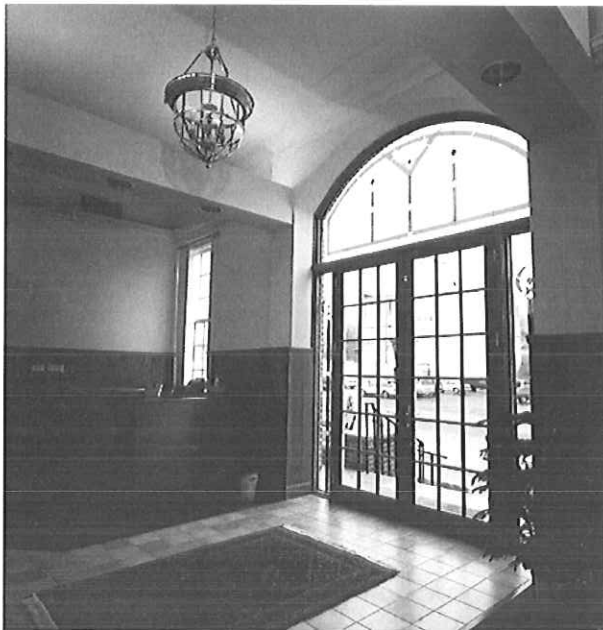
The building has 16 computer aided design workstations that were tailored to meet the needs of our employees. In keeping with our desire to have healthy productive people, a fitness facility was added in the basement of the new wing. The facility also includes two conference rooms, offices, reproduction room, dark room, art room, and file room. Chapman Technical Group provided all structural, mechanical and electrical work.

Interior Design



Chapman Technical Group Office

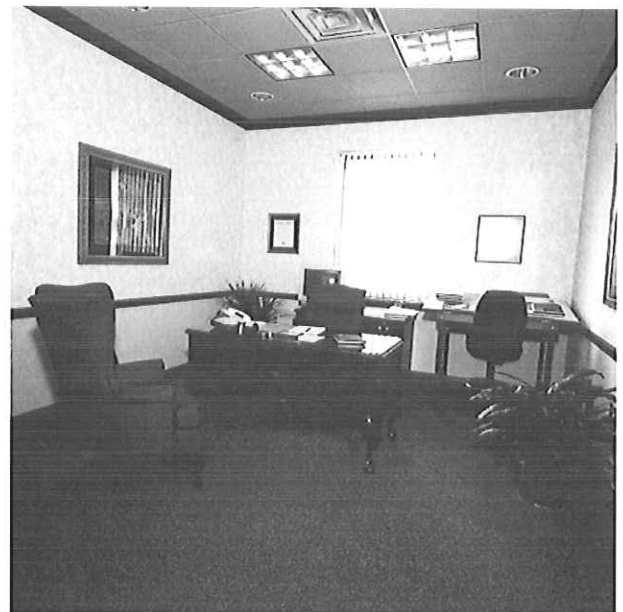
93037



Chapman Technical Group

Post Office Box 1355
St. Albans, West Virginia 25177

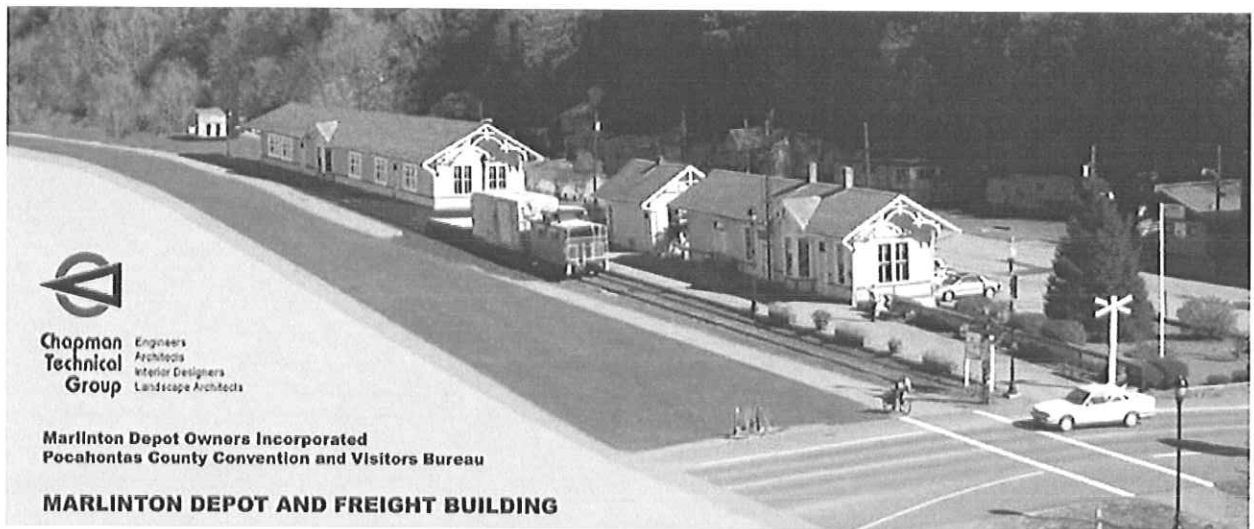
On the National Record of Historic Places, the Saint Albans office of Chapman Technical Group is a very successful example of a modernization of an historic structure. An 8,000 SF addition helped to turn this former post office into a state of the art Engineering/Architectural office. Original materials were refurbished and new materials were carefully selected to accentuate the building's historic nature while adding a dramatic flair.





Marlinton Depot Project

07068



Marlinton Depot Project

Marlinton, West Virginia

The project scope was originally and interior and exterior renovation, but a fire consumed the entire depot and the owner then engaged Chapman Technical Group to design a "new" depot. The depot will replicate the original structure as much as possible. The project also includes a new "freight building" that will be used as a railroad museum.

The rendering above shows the original depot in the foreground, the smaller rest room building in the middle, and the proposed "freight building" museum at the far end. The freight building shown is an architectural rendering.



Original depot building.



Visions Day Spa

00044



Visions Day Spa

338 Capitol Street
Charleston, West Virginia 25301

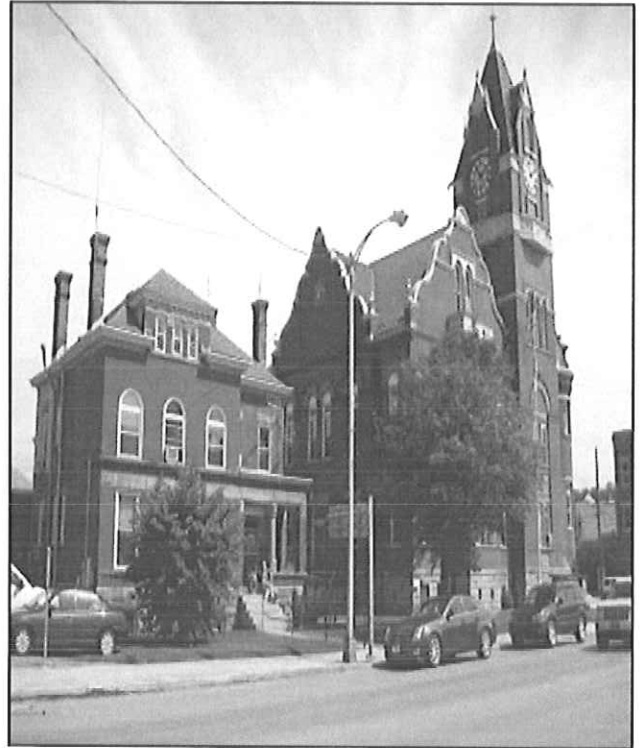
The owners of Visions Day Spa had outgrown their shop on Summers Street in Charleston, West Virginia and needed to expand. They found space in a 1920's storefront on historic Capitol Street that would give them room to grow and at the same time afford the opportunity to update the image of the spa through the architecture. The first floor of the building was completely gutted except for existing stairs and existing load-bearing masonry walls. The existing sloping floor was demolished and rebuilt to provide better access and create a space for the Reception/Waiting Area at the same elevation as the main floor. A new transparent glass block wall at the entry allows for a transition from the accessible ramp to the main level. New half-walls partially enclose an intimate waiting area. Following the concept of the hair stylist as an artist, the open floor plan of the artist's loft/studio contains hair stylists' easels with mirrors,

shampoo stations and hair dryer stations. At the back of the studio is the pedicure station with foot massage bath and two manicurists' tables. To give the ambiance of the artist's loft/studio, the ceiling, exposed mechanical ductwork, and track lighting were painted black and the walls were painted a neutral pearl gray. To add color, artwork is exhibited on the walls and beauty merchandise is displayed in the Reception/Waiting Area. An art hanging system consisting of a wall-mounted track and stainless steel wire was also used.



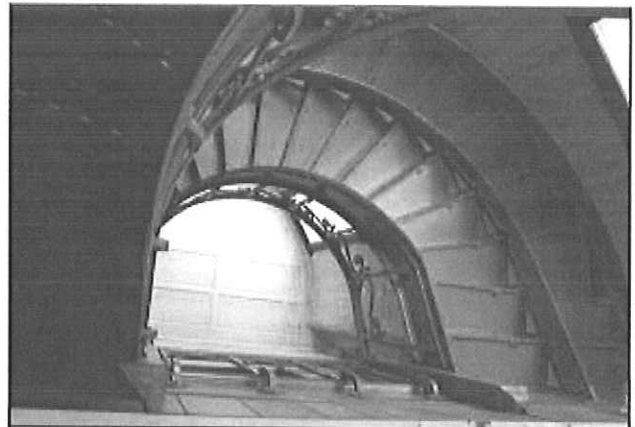
Tucker County Courthouse & Jailer's Residence - Restoration

10032



Chapman Technical Group and their consultants, CAS Structural Engineering, Inc., and ZDS Design Consulting Services were hired by the Tucker County Commission to provide a conditions report for the stabilization and restoration of the Tucker County Courthouse and Jailer's Residence. After evaluating and assessing the condition of the existing structure; Chapman Technical Group submitted a detailed plan for the stabilization of the structure, and recommendations on how to restore and renovate the structure for future use. A prioritized budget was compiled identifying the most critical and immediate repairs, repairs and refurbishing that should be scheduled as soon as funds became available, and restoration, upgrades, and ongoing maintenance that could be delayed to future dates. Phase 1 of this plan was affected 2011 to refurbish, repoint, and stabilize the chimneys of the Courthouse and the Jailer's Residence (Commission Offices).

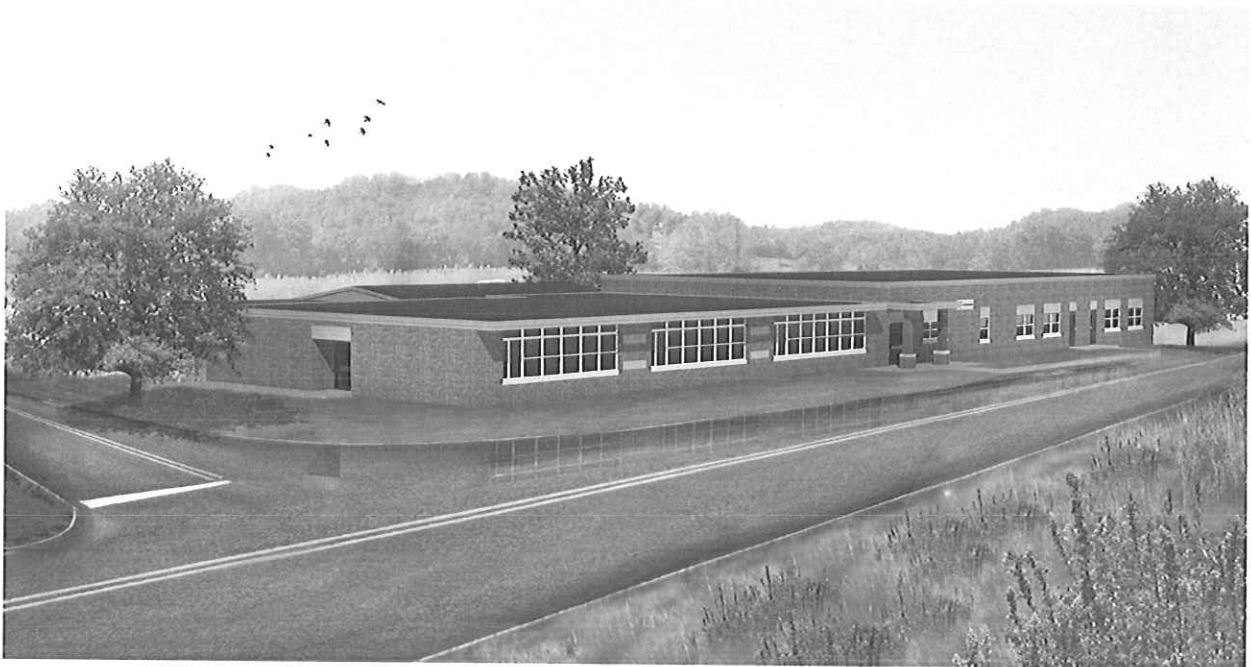
Tucker County Commission
213 First Street
Parsons, West Virginia 26287





Smithville Elementary Renovation/Addition

08058



Ritchie County Schools

134 South Penn Avenue
Harrisville, WV 26362

The Smithville Elementary School project included the demolition of two buildings in the existing four building complex and the design of a new classroom wing and a new kitchen addition adjacent to the remaining buildings. The new additions were designed to join with the existing classroom wing and multipurpose building to create a single facility under one roof.

The new school will provide access control and better security, new HVAC systems and better indoor air quality, compliance with ADA/ABA requirements and modern technology and amenities.

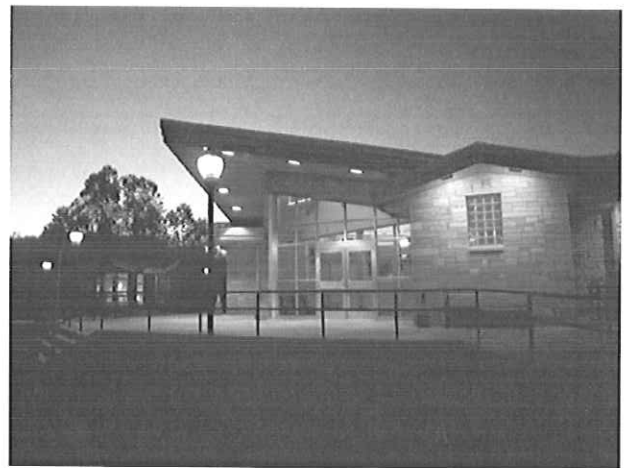




Burnsville Rest Areas

I-79, Mile Marker 86
West Virginia

The Burnsville Rest Areas are the first of the Standard Rest Areas to be built for the State of West Virginia. With dual sided men's and women's facilities, the structures are intended to meet the anticipated traffic load for twenty years from the date of design. They utilize materials native to the state, including smooth cut and rough stone, and a tern coated stainless steel roof system. A warm, but high-tech, Appalachian imagery greets the weary traveler, encouraging a more safe and rested trip. Low maintenance, but highly durable materials were used, including stone, stainless steel, glass, aluminum, wood, polished ground faced CMU, and epoxy terrazzo. Separate maintenance and vending buildings complement the main structures on the Northbound and Southbound sides.





Beckley Water Company Office Renovations

95008



Before Renovations



After Renovations

Beckley Water Company

Post Office Drawer U
Beckley, West Virginia 25801

Design and construction observation services for renovations to the existing Water Company offices and an expansion of those offices into an adjacent building. The interior spaces were restored to the original 1930's configuration with high ceilings and an open mezzanine. An original pressed tin ceiling which was badly damaged during previous renovations was replaced with a new ceiling of the same style. Facade renovations included traditional store-

front design elements along with the introduction of stained glass transoms windows. The lobby area included the introduction of a new open office system. Mechanical and electrical systems for the entire building were replaced along with the installation of new sprinkler and fire alarm systems. The renovations were phased so that all operations of the Water Company were maintained during the construction process.



**Canaan Valley Resort State Park
WV DNR Parks and Recreation
Canaan Valley, West Virginia**

Chapman Technical Group is leading a team of specialists in developing a wide range of improvements at the ski area of Canaan Valley Resort State Park.

The upgrades include new facilities that will have a major impact on the resort's operations; others will be little-noticed but important improvements to the resort's infrastructure.

A new tubing park will be developed and will feature a 12-lane tube run in excess of 800 feet long with a vertical drop of 90 feet. A new boardwalk conveyor will carry tubers back up the hill. A tubing lodge will feature a wood-burning fireplace, restrooms, and a concession stand for hot drinks, and an outdoor patio will include a wood-burning fire pit. A storage building will house tubes and snow grooming equipment. In the same area, a wobble clay shooting range will be developed as a seasonal activity.

Another major improvement will be a new beginners slope and ski school area. This new slope will be easily accessible by beginning skiers and will include new snow guns and lighting for night skiing. A boardwalk conveyor

will carry skiers back to the head of the slope, enabling them to ski at their skill level as long as they want.

The main ski lodge, the Bear Paw Lodge, is relatively new, but the older buildings at the base of the ski slopes will get a much-needed face lift. New wall and floor finishes, new furnishings, new lighting and upgrades to the heating and ventilation systems, will make the lodge buildings much more comfortable. The pub will likewise be upgraded with an expanded bar area. Outside, a new plaza with a fire pit will provide more options for outdoor seating.

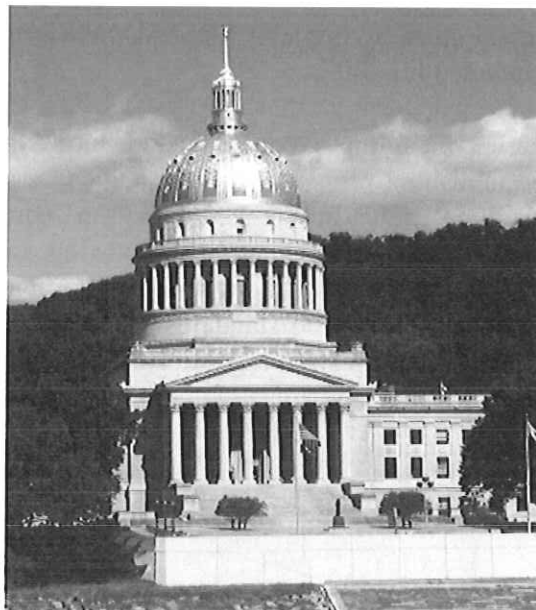
Important infrastructure improvements will include upgrades and major maintenance to the existing ski lifts; snow-making waterline repairs and upgrades; new snow guns; and major storm drainage improvements. A new waterline from the Canaan Valley golf course ponds will provide expanded snow-making capabilities.

ZDS Design/Consulting Services

Project Name: *State of WV Capitol Complex Performance Contracting
Located in Charleston, WV*

Client Contact: *Mr. Russ Labarbra*
Johnson Controls, Inc.
4132 First Avenue
Nitro, WV 25143
(304) 759-2709
(304) 389-1254

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



Project Description

ZDS Design/Consulting Services and Johnson Controls Inc.

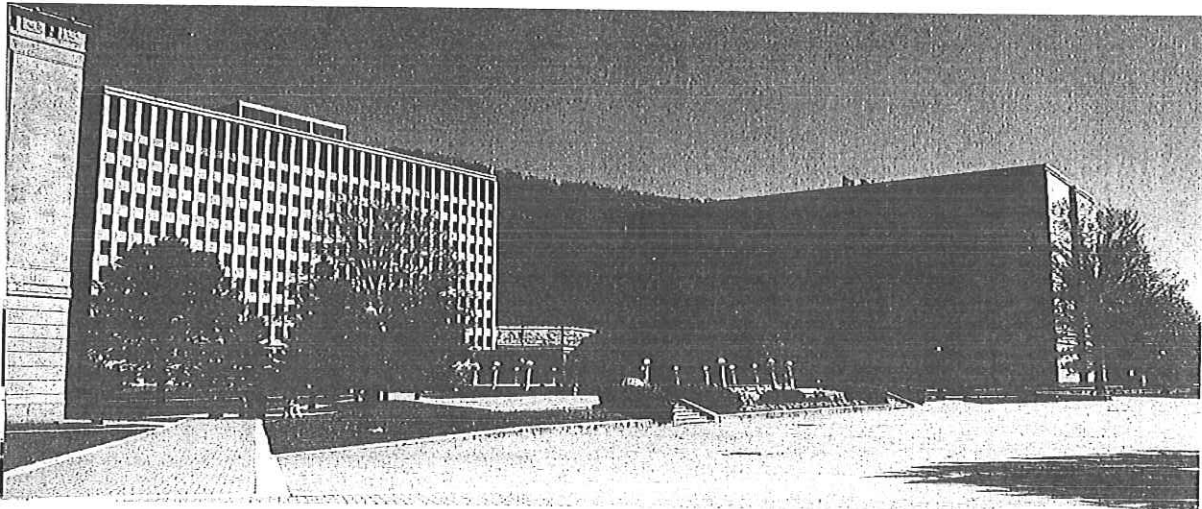
The State of West Virginia was aware that their facilities at the Capitol Complex were aging and in need of significant infrastructure upgrades but were having difficulty in appropriating the necessary funding to make such improvements. Many of the existing boilers and other primary heating equipment are past their expected service life and are in disrepair. The State of West Virginia passed a new bill in 2003 that permits Performance Contracting to be used as an avenue for implementing infrastructure upgrades in State facilities provided the upgrades self-fund within a 15 year time period. The State elected to solicit proposals from various ESCO's with the intention of crafting a major improvement project that would reduce operating costs to the State as well as pay for itself over the 15 year period. After an extensive review and selection process, the Team of Johnson Controls Inc. and ZDS Design/Consulting Services was selected. The scope of the proposal included various energy conservation measures to the Capitol Building as well as Buildings #3, 4, 5, 6, 7, 11, 13, 15, 16 and 17. Significant HVAC improvements were engineered for the Capitol Building, as well as Buildings #3, 4, 5, 6, 7, 8 (Governor's Mansion) and provisions for #10 (Holly Grove) plus additional future capacity.

A central heating plant anchored the Facility Improvement Measures. It yielded the elimination of 14 failing boilers with provisions for future expansion of up to 600,000 square-feet of office space. A centralized heating plant offers greater efficiency in overall system operation,

PROJECT EXPERIENCE

centralized control and maintenance of primary heating equipment, with the added benefit of supplemental capacity in the event of a boiler failure. The first phase of the program began in May 2005 with the evaluation of the existing heating plants, HVAC equipment, and their sub-systems to quantify deficiencies and potential opportunities to improve comfort, IAQ, extension of equipment life and an overall reduction in operating costs. Preliminary engineering studies reflected that millions of dollars could be saved annually in energy, operating cost and deferred capital costs by implementing this multi-million dollar program. Completion of the program is scheduled for 2007.

Some typical improvements include either the replacement or retrofit of major air handling units, reestablishing proper control strategies, reducing outdoor air intake quantities when allowable, installing new building automation equipment, general HVAC equipment repairs and replacement, documentation of existing and post construction conditions, and establishing a consistent overall operating strategy. Individual HVAC systems are also being enhanced to meet applicable codes and standards. Exhaustive hours were spent with the State in assisting them with the identification and prioritization of facility improvement measures. The time spent also identified potential construction issues with an emphasis on critical phasing requirements.



The program's work is projected to expand as the State realizes the value of the program and aids in helping them operate their facilities more efficiently and effectively. The WV Division of Protective Services is also incorporating some of the integrated campus wide security, fire alarm, intercom, emergency power, and communications infrastructure upgrades either in with the base program work with the remaining through a separate contract using ZDS to design and administer the construction activities for 2,137,400 square-feet involving 15 buildings at the campus.

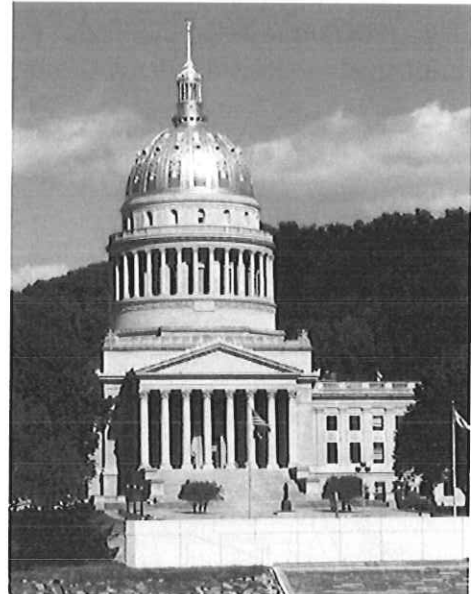
<i>Performance Contracting Program Costs:</i>	<i>Ranging from \$10,000 to \$20,000,000</i>
<i>Potential Savings:</i>	<i>Improvements self-fund within 15 years</i>
<i>Size:</i>	<i>1,929,155 FT²</i>
<i>Completion:</i>	<i>2007 for Construction</i>

ZDS Design/Consulting Services

State of WV Capitol Complex - Division of Protective Services, Charleston, WV

Client Mr. Matt Brown, Security Systems Manager
Contact: WV Division of Protective Services
Phone (304) 558-9911
WV Capitol Complex
Charleston, WV 25305

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



Main Capitol Building #1



Building #3

Project Description:

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



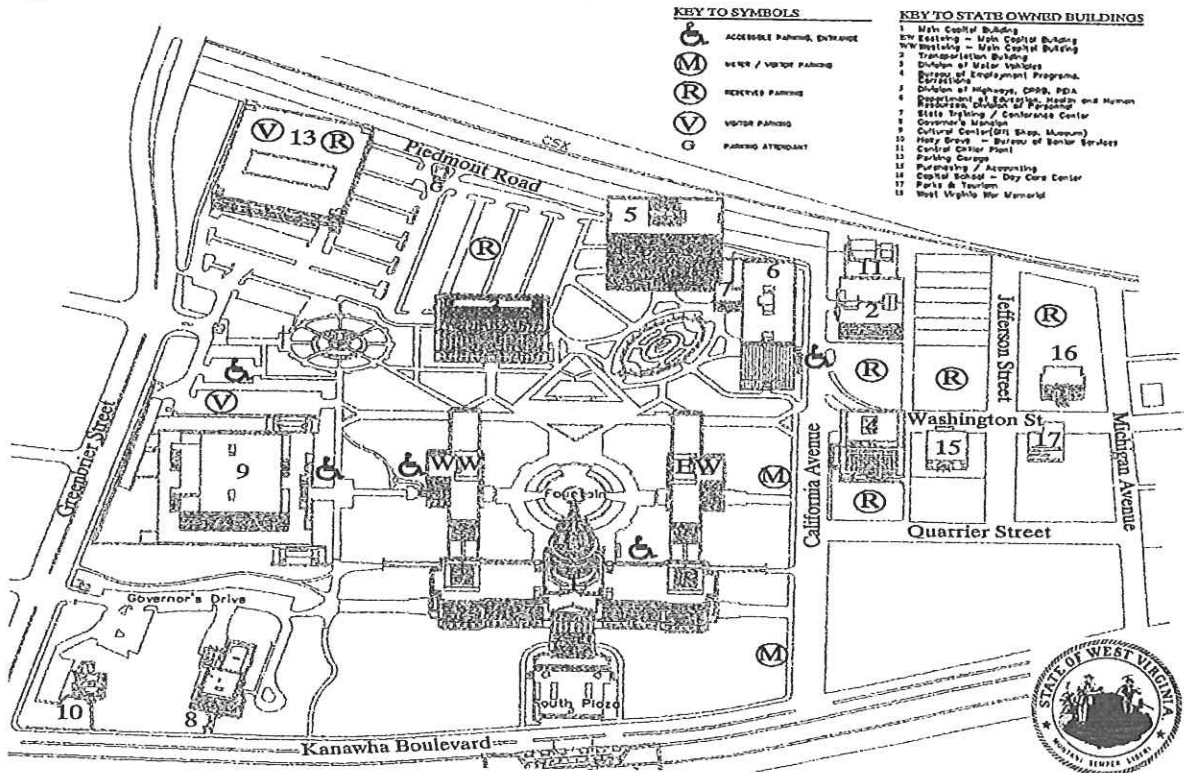
Building #4

The work includes master planning for an overall site mass notification and public information system and specific upgrades to Buildings on campus. ZDS assists the agency in meeting the long term plans on expanding the functionality of the Command Control to be a statewide technology hub and future dispatch center. The program includes preparing construction drawings and specifications for bidding renovations to the existing fire alarm,

PROJECT EXPERIENCE

intercom/communications, security, sprinklers, HVAC controls, emergency power, and related systems impacting security and communication life safety systems.

ZDS assists the Division of Protective Services in providing information for interdepartmental coordination within State agencies with the goal of achieving a cost effective integrated system. The program assists the State in incorporate the planning and design into other capitol infrastructure projects for consistency with the overall master plan.



ZDS also provided the WV Capitol Complex with master planning and design for the campus district heating system through a Performance Contracting program with construction completed in 2007. We also provided HVAC engineering planning and design services for the WV Division of Cultural and History, protecting the State's artifacts while conserving energy without sacrificing comfort or indoor air quality.

The WV Division of Protective Services program's work is projected to expand as the State realizes the value of integrating systems across interdepartmental boundaries which helps them operate their facilities more efficiently and effectively. The DPS is responsible for 2,137,400 square-feet involving over 15 buildings and the campus grounds covering over 54 acres.

Projected Program Costs:

\$15,000,000

Size:

WV Capitol Complex grounds & Facilities

Completion:

2016

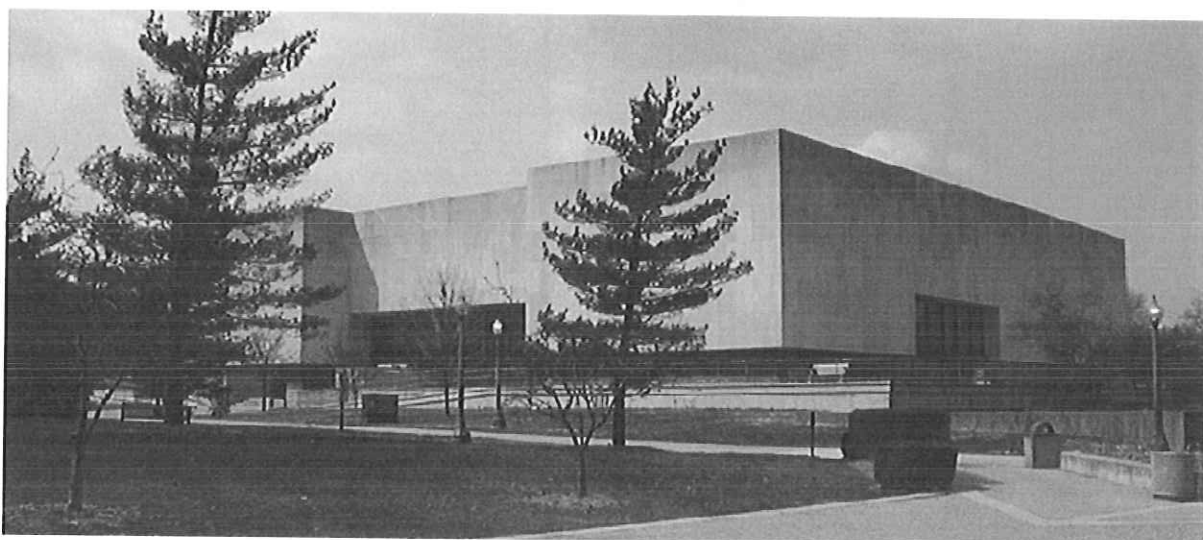
ZDS Design/Consulting Services

Project Name: *The Museum of Cultural & History - HVAC Renovations*

Client: *State of West Virginia Charleston, WV*

Client Contact: Mr. Mark Lynch, Director of
Facility Operation
Phone (304) 558-0220
The Cultural Center - Bldg 9
WV Capitol Complex
Charleston, WV 25305

Services: Engineering Master Planning, Indoor Air Quality evaluation, energy analysis, and Mechanical/Electrical/Fire Protection design, bidding and construction administration services for retrofitting the 228,500 ft² museum and protecting the artifacts.



Museum of Culture & History

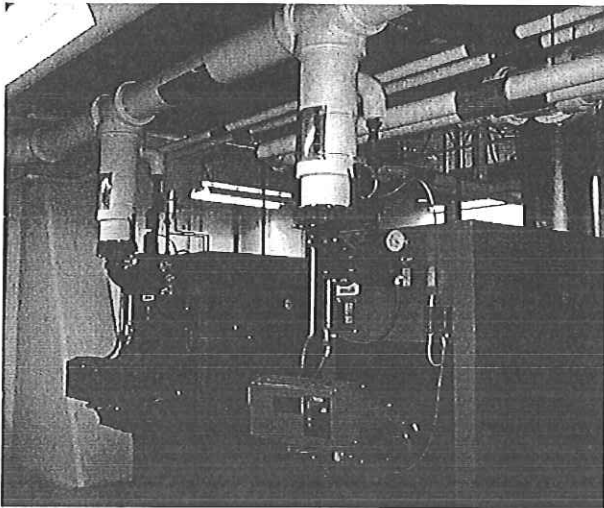
Project Description

ZDS principals and personnel have been involved in numerous design and recommissioning projects for WV State Capitol Complex while at *ZDS* and through other employment over their careers. These projects required the engineering planning, design, supervision, preparation of construction documents, specifications, construction administration, and commissioning of HVAC systems, sprinkler systems, plumbing systems, electrical power, lighting, fire alarm, security, technology and communications. *ZDS* completed the design for the WV Division of Culture and History correcting their long term HVAC and Indoor Air Quality problems in 2001 and were contracted again in 2008 for providing fire alarm and fire protection upgrades..

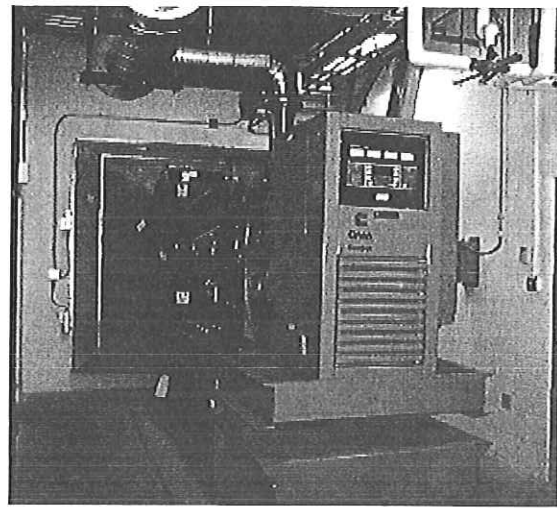
Lack of humidity control damaged many of the State's priceless artifacts. Books and other State collections were deteriorating rapidly due to lack of proper control of temperature, humidity, and filtration. The occupants had also experienced allergic reactions and discomfort from the long

PROJECT EXPERIENCE

term high humidity conditions. ZDS identified and designed the solutions. Conserving energy without sacrificing comfort or indoor air quality was a major consideration. The design included converting an all electric resistance heating system to natural gas, comprehensive DDC controls for central monitoring and control, converting AHU's from constant air volume to variable air volume while meeting stringent ASHRAE Indoor Air Quality requirements, provide variable water volume pumping and interfacing with the facility into the new District campus chilled water system to reduce long term operating cost. The design also included providing new boiler plant with redundancy heating and piping distribution system and an emergency generator to help protect the States priceless collections.



New Boiler Plant



New Emergency Generator

The mechanical and electrical renovations for the State of West Virginia Library Commission stacks and office spaces were also part of a \$4.5 million dollar HVAC and Electrical Renovations for the Division of Culture and History. The retrofits saved energy, improved indoor air quality, and comfort within the building. The Cultural Center renovations are estimated to save near \$153,000 annually over the costs of operating the old system.

ZDS is also involved with master planning and design for the District heating system through a Performance Contracting program for the WV Capitol Complex and was selected to provide engineering planning and design services directly through the WV Division of Protective Services for the WV Capitol Complex and all State of WV owned or operated facilities for security, intercom, emergency power, HVAC systems as they relate to security, fire alarm and related systems. This multiyear agreement could be in effect for 10 years.

Total Cultural Center Project Cost:	\$6,800,000
Size:	228,500 FT²
Completion	2001 for HVAC, 2009 for FA/Sprinklers
Estimated Energy Savings:	Reduce HVAC Operating Costs up to 50%.

PROJECT EXPERIENCE

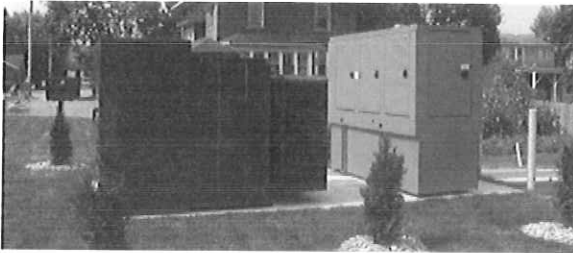
ZDS Design/Consulting Services

Project Name: *New Mercer County Courthouse Annex*
Client/Location: *Mercer County Commission, Princeton, WV*

Services: Engineering planning, design, bidding and construction administration services HVAC, Electrical, Plumbing, and Fire Protection working through a local Architect.



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



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

Approximate Project Cost: \$6,000,000
Project Size: 32,000 square-feet
Completion Date: Completion 2006

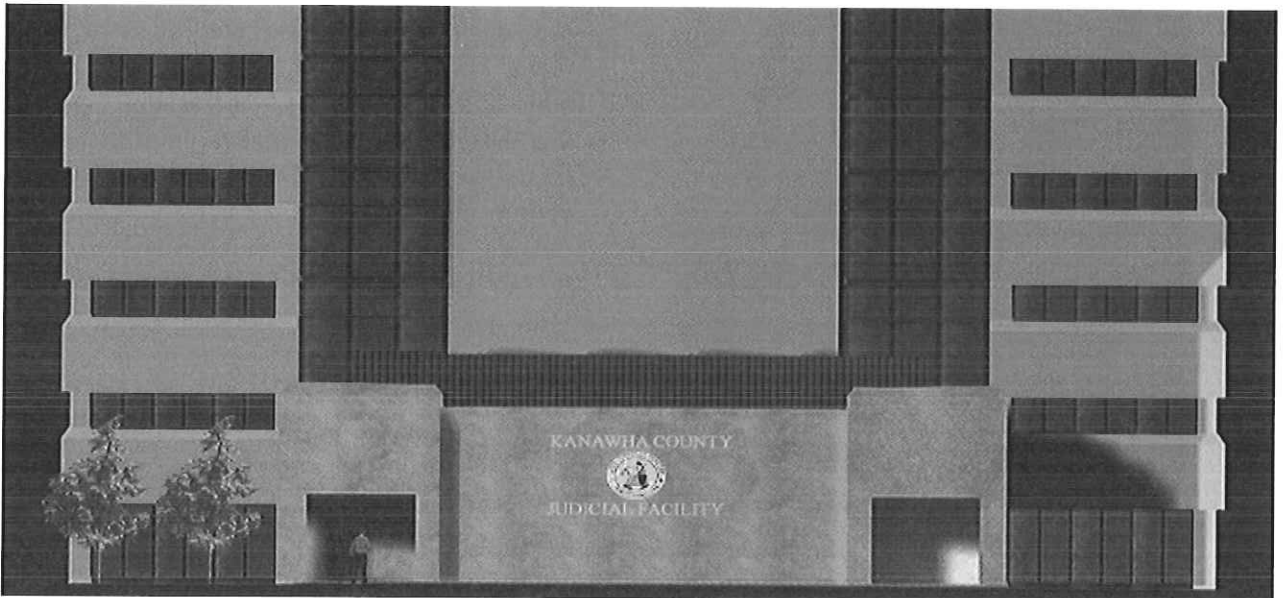
ZDS Design/Consulting Services

Project Name: Kanawha County Judicial Annex - HVAC Retrofits

Client/Location: Kanawha County Commission, Charleston, WV

Client Contact: Ms. Jerie Whitehead, Director,
PO Box 3627
Charleston, WV 25336
Phone (304)-357-0115

Services: Engineering planning, design, bidding and construction administration services comprehensive HVAC retrofits, DDC Controls, smoke control system, sprinklers and plumbing retrofits.



Project Description

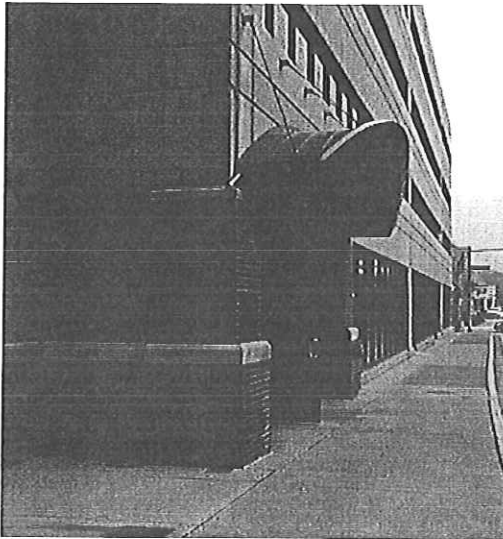
The Judicial Annex, located across the street from the Kanawha County Courthouse in Charleston, WV, was originally constructed in 1982. The original eight-story building is attached to a multilevel parking garage.

The Kanawha County Commission initially contracted ZDS in 1998 to evaluate the Judicial Annex's existing mechanical and electrical systems. ZDS prepared an extensive report which showed opinion of costs for many options. The report covered multiple HVAC approaches with advantages and disadvantages for each. Some of the HVAC equipment was in poor condition and while the Owner was deciding on when to proceed with the recommended work, the primary chiller failed. The weather was hot so ZDS was commissioned under emergency conditions to

PROJECT EXPERIENCE

find a solution as soon as possible to avoid closure of the facility. ZDS designed/project managed a replacement chiller within days of the equipment failure which prevented extended closure of the building.

The Kanawha County Commission then hired ZDS to provide engineering design/construction administration services for renovations for the facility and significant additions. The renovations included seven Circuit Court courtrooms; jury deliberation rooms; attorney conference rooms; witness rooms; Court Clerks offices, public research area; adult probation offices; Maintenance Shops, Prosecutors offices, Voter's Registration, Court Administration offices; and all public areas. The engineering for the additions included a new entrance, security checkpoint, and lobby to alleviate a very overcrowded situation and a building expansion for Juvenile Probation and a newly established Family Court.



ZDS designed a VAV air handling system with reheat HVAC system to address health, safety, and IAQ issues by increasing outdoor ventilation air rates, higher filtration, strict humidity control, DDC monitoring/control, carbon monoxide demand control ventilation, outside air measuring/monitoring and other design strategies. Multiple HVAC options with their associated opinion of costs for modifying, updating and replacing the existing equipment were reviewed with the Owner for their preferences to find the best fit with the existing maintenance staff. All HVAC equipment was designed for full DDC controls for remote monitoring, and energy efficiency.

Other support services and building infrastructures improvements installed concurrently include complete voice and data wiring systems, including wiring for LAN; new power distribution for clean and normal power; and new lighting systems that complement the computer environment. Building security improvements included a central security control room, staffed twenty-four hours a day; security vestibule with screening stations; closed circuit monitoring and card access admission systems; secured private judges suites connected to a private elevator; secured prisoner transfer from sally port to courtrooms; emergency call system from courtrooms, chambers and other public-interface points.

<i>Total Project Costs</i>	\$10,270,000
<i>Mechanical Project Cost:</i>	\$3,200,000
<i>Project Size:</i>	Renovations 93,000 ft ² plus 23,000 ft ² addition
<i>Completion Date:</i>	Completion 2008

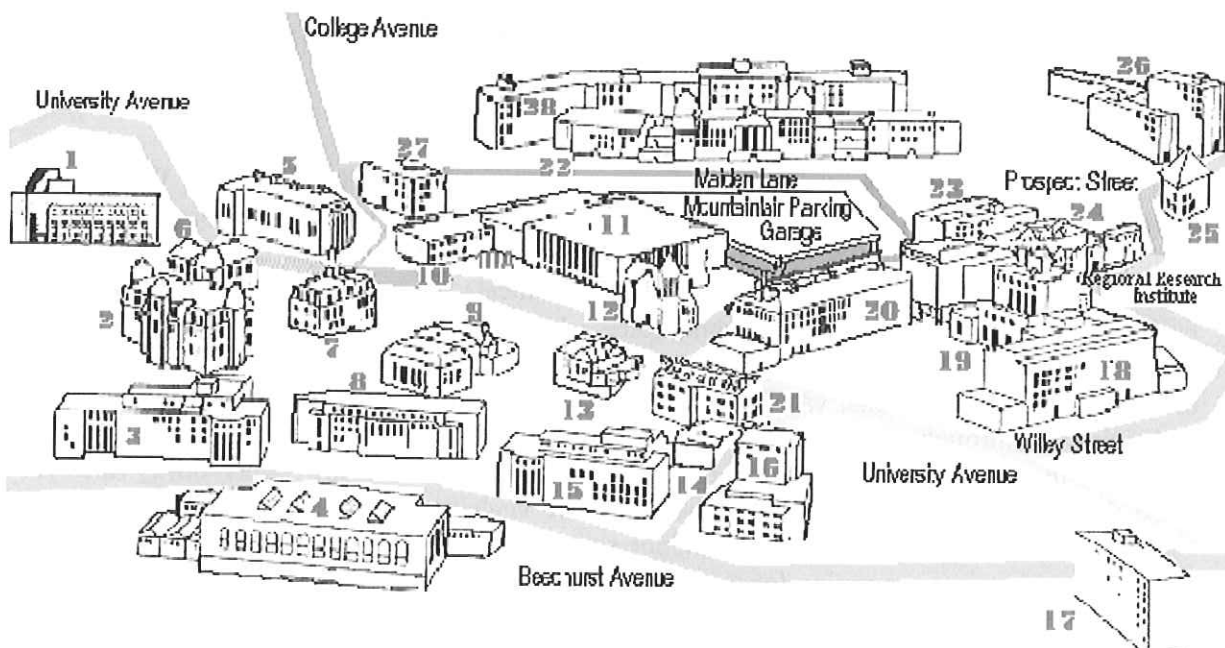
ZDS Design/Consulting Services

Project Names: *WVU Downtown Campus: Chiller Loop, White Hall Additions & Renovations and others as listed on next page*

Client: *West Virginia University, Morgantown, WV*

Client Contact: Mr. Gary Boyd Mr. Bradley Field
Mechanical Operation Mgr. Capital Projects Inspector
Phone (304) 293-8123 Phone (304) 293-2855

Services: Engineering planning, mechanical and electrical design, bidding and construction administration services for multiple projects involving 12 separate buildings at the Morgantown Campus and one at WV Tech Campus.

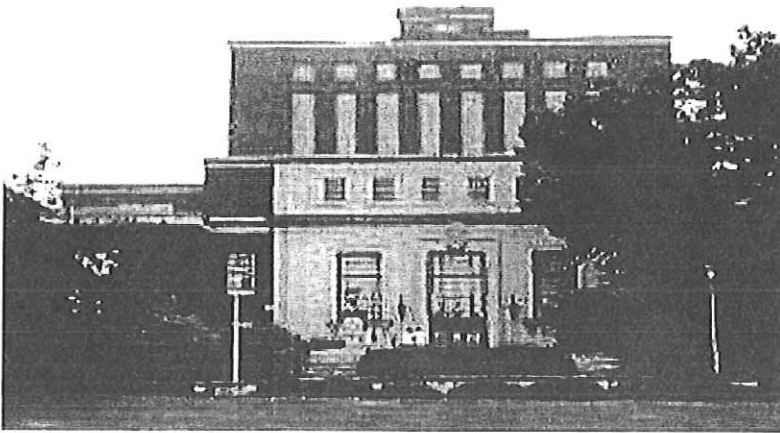


Project Description

ZDS Design/Consulting Services and its principals Ted and Todd Zachwieja prior to forming ZDS have been involved in numerous mechanical/electrical design projects for WVU. A project completed in 2000 involves the mechanical and electrical systems design for a three-story Computer Center located in the “west end high bay” of White Hall to serve WVU’s downtown campus. ZDS also designed a new chiller plant located at “east end high bay” of White Hall. The new White Hall chiller plant serves the newly renovated and expanded Wise Library and the new White Hall Computer Center. The piping and pumping was designed so any chilled water

PROJECT EXPERIENCE

not required for Wise Library and the White Hall Computer Center was diverted to serve the existing "chilled water loop" system. The chilled water loop system interconnects approximately 3,800 tons of distributed chiller plant systems in White Hall, Mountainlair, Clark Hall, Chemistry Annex, with provisions to serve Stewart Hall and Boreman Hall in the future. The chiller loop concept has proven to be successful in maximizing cooling capacity and reducing operating costs at WVU. Todd Zachwieja was also the design engineer for the original chiller loop.



The White Hall Chiller project includes providing a new 750-ton electric drive centrifugal chiller with provisions for a future 1000-ton electric centrifugal chiller.

The White Hall chiller project eliminates the requirement of a new chiller plant in Wise Library by providing the capacity in White Hall and allowing the chilled water to be shared with other buildings tied into the chiller loop piping system. When one chiller is down for planned or unplanned repair, the chilled water loop system still meets the cooling requirements for all the buildings on the loop under most conditions. Variable speed pumping ensures maximum available energy savings and diversity by only utilizing all the required pumping energy to meet the load. The chiller plants, variable speed pumping and tower free cooling are all automated and monitored through a direct digital facility management system. The system allows for WVU to operate the most efficient chillers the longest and allows for flexibility when utility rates vary since the chilled water loop includes both electric centrifugal chillers and steam absorption "Tower free cooling" system with an indoor sump tank was incorporated to save energy and provide a stable winter operation for the chilled water system.

Total MEP Project Cost for projects listed:

\$4,410,000

Estimated Annual Savings:

Between \$200,000 and \$300,000

White Hall Chiller Plant:

Completed in 2001

ZDS Design/Consulting Services

Project Name: *Harris Hall - HVAC and Electrical Retrofits*
Client/Location: *Marshall University, Huntington, WV*



Client Contact: Mr. Tony Crislip,
Project Manager,
Mechanical/ Electrical Trades
One John Marshall Drive
Huntington, WV 25755-2450
Phone (304)-696-6241

Services: Engineering planning, design, bidding and construction administration services HVAC, Plumbing & Electrical retrofits, DDC Controls, AHU's replacement, chiller replacement, VWV pumping, new electrical service, switchgear and fire alarm systems.



Project Description

Harris Hall, on Third Avenue, was originally constructed in 1976. The four-story building houses the departments of classical studies, geography, history, religious studies, philosophy, psychology, counseling and rehabilitation, adult and technical education, and administrative education. Marshall University recognized that the HVAC and electrical systems were at the end of their expected service life and were experiencing frequent equipment failures, power outages and numerous complaints on comfort and "stuffy air". The plumbing was also wasteful with an opportunity to incorporate water saving features into the existing plumbing systems.

PROJECT EXPERIENCE

Marshall University initially contracted ZDS to evaluate Harris Hall's existing mechanical/electrical/plumbing systems and prepare an extensive report. ZDS's cost estimates showed it would take \$3 million to meet their needs. The planning document covered multiple HVAC approaches with advantages and disadvantages for each to provide a comfortable environment while addressing Indoor Air Quality, energy efficiency, operating costs and meeting the Owner's goals. The report also covered related work including roof replacement, lighting upgrades, and energy/operating conservation measures.

We worked with the University on different approaches to fit the project within available funding while defining alternates that would permit the Owner to complete the HVAC/Electrical/Plumbing retrofits if more funding could be found or to phase the work as funding was found. With the aid of ZDS's planning, Marshall University was able to phase the project. The facility was vacated for less than 60 days in the summer of 2006 to allow the contractor to perform the major construction efforts without working around the occupants. The project was successful through careful planning and coordinating construction efforts between the University, the design and the installation.

The HVAC system had a direct impact on the health and safety of the college students and staff. Previously, occupant comfort was not being maintained and recommended levels of outside ventilation air were not being introduced to the classrooms. ZDS designed a VAV air handling system with reheat HVAC system to address health, safety, and IAQ issues by increasing outdoor ventilation air rates, higher filtration, strict humidity control, DDC monitoring/control, carbon monoxide demand control ventilation, outside air measuring/monitoring and other design strategies. Multiple HVAC options with their associated opinion of costs for modifying, updating and replacing the existing equipment were reviewed with the Owner for their preferences to find the best fit with the existing maintenance staff. A ground mounted air cooled chiller with antifreeze and variable water volume pumping was also designed. All HVAC equipment was designed for full DDC controls for remote monitoring, trouble shooting and energy efficiency. Plumbing fixtures were upgraded with water conserving low flow auto flushing devices to reduce water/sewer costs.

A new addressable fire alarm system, electrical service, electrical switchgear and additional panelboards were also included in the design. A section of the original aluminum bussed switchgear had previously "melted" which caused an extensive outage while a custom replacement part could be manufactured. The electrical retrofits addressed this & energy efficient lighting with motion detectors were also incorporated into the building.

Tony Crislip, Manager, Marshall University stated "*This building serves as a pilot for how all our buildings should be constructed. This building is the most comfortable one on campus!*"

MEP Project Cost:	\$2,856,000
Project Size:	56,680 square-feet
Completion Date:	Completion fall 2006

PROJECT EXPERIENCE

ZDS Design/Consulting Services

Project Name: *Nick J. Rahall II Technology Center*
Client/Location: *Concord University, located in Athens, WV*



Client Contact: Mr. John Ferguson,
Chief Procurement Officer
PO Box 1000
Athens, WV 24712-1000
Phone: (304)-384-5233

Services: Engineering planning & design for HVAC, Electrical, Plumbing, compliance with ADA, Fire Protection, Technology, DDC Controls, VAV AHU's, variable water volume pumping, UPS, Emergency Power, energy efficient lighting, & information technology.



Project Description

Concord University had an existing building, White Hall, that they wanted converted to a new state-of-the art technology center. Working through E. T. Boggess Architects, ZDS evaluated the potential mechanical, electrical, plumbing, fire protection and technology needs for significant infrastructure upgrades for an existing building that was not ideally suited for a technology center. After careful analysis, the design team and Owner decided it was best to demolish most of White Hall and construct a 50,000 ft² three-story building attached to the existing remaining structure. Congressman Nick J. Rahall II helped in obtaining the necessary funding to make the project possible and Concord University named the building after him in appreciation.

The quality of HVAC system was crucial to Concord University since they had just spent over a \$1 million correcting Indoor Air Quality (IAQ) problems in an existing relatively new building in which they believed the HVAC system contributed to the problem. ZDS designed around a centralized heating/cooling plant for greater efficiency in overall system operation and provided centralized control and maintenance of primary heating/cooling equipment, with the added

PROJECT EXPERIENCE

benefit of supplemental capacity in the event of a boiler failure. The planning and design services included providing a quality HVAC system and electrical equipment, and their sub-systems to provide a comfortable environment while addressing Indoor Air Quality, energy efficiency, operating costs and meeting the Owner's needs.

HVAC systems were enhanced to meet applicable codes and standards and improved indoor air quality through higher filtration, strict humidity control, ultraviolet light purification air flow measuring/monitoring and other design strategies. The business incubator area was equipped with flexible HVAC zoning and additional power to meet potential varying uses for the space.

The electrical systems included providing uninterruptible power supply, redundant HVAC and emergency power to the central computer center where all of the University's internet/intranet systems resided. Classrooms were equipped with the latest in technology including provisions for some of the future 3-D imaging instruction tools being developed.



The MEP design aids Concord University to operate their facilities efficiently and effectively and the state-of-the-art technology will greatly benefit the faculty and students for many years to come.

ZDS also designed, bid and provided construction administration services for completing the Campus Medium Voltage Loop involving every building on the campus which was completed in 2005 under budget and ahead of schedule. The \$375,000 electrical upgrades also provided the electrical service capability for the new technology center.

MEP Construction Cost:

\$3,675,000 out of a \$10,300,000 total costs

Size:

Approximately 50,000 square-feet

Completion Date:

Completed in 2008

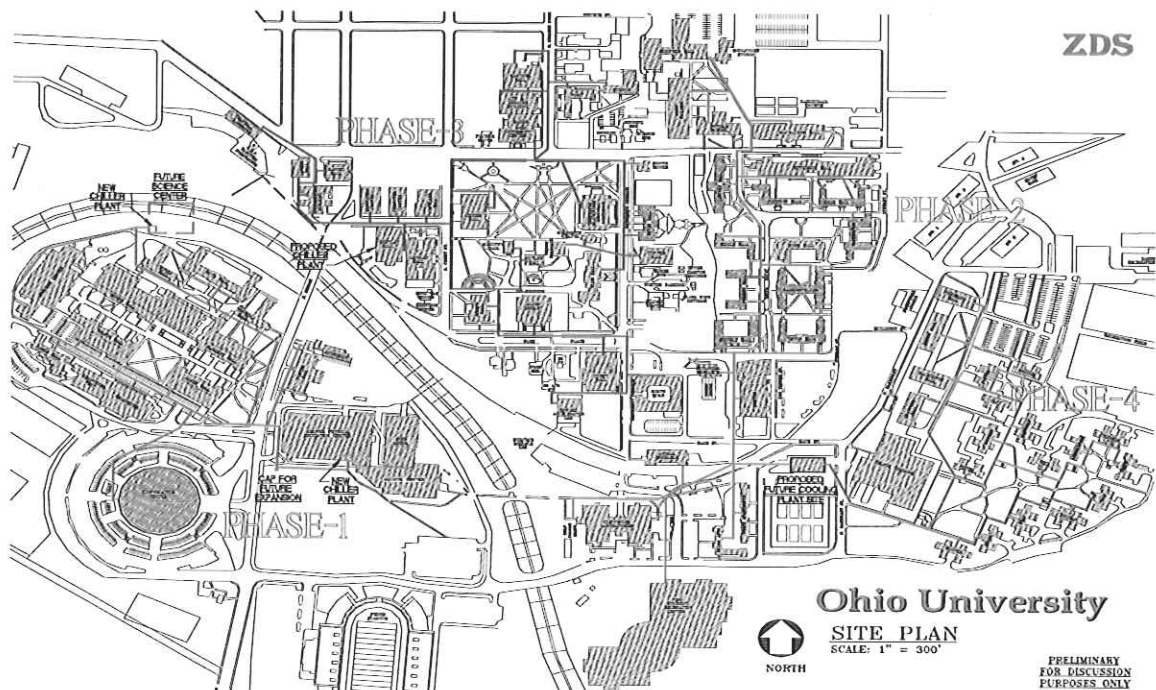
ZDS Design/Consulting Services

Project Names: *General & Auxiliary Services Performance Contracting and Campus District Cooling*

Client: *Ohio University, Athens, Ohio*

Client Contact: **Dr. Sherwood Wilson**, Phone: (540) 231-4416, Vice President for Administrative Services for Virginia Polytechnic Institute of Blacksburg, VA. Former Associate Vice President for Administration, Ohio University, Athens, Ohio

Services: Engineering planning, mechanical and electrical design, consulting for establishing comprehensive Performance Contracting program & Master Planning for District Cooling System covering entire campus.



Project Description

ZDS developed a hybrid comprehensive performance contracting program and capital upgrades projects for Ohio University's Athens's Campus. The Chilled Water Project upgrades and expands campus air-conditioning systems, creating a central cooling infrastructure (similar to the central heating system on campus). Ultimately, this project will allow all University facilities to

PROJECT EXPERIENCE

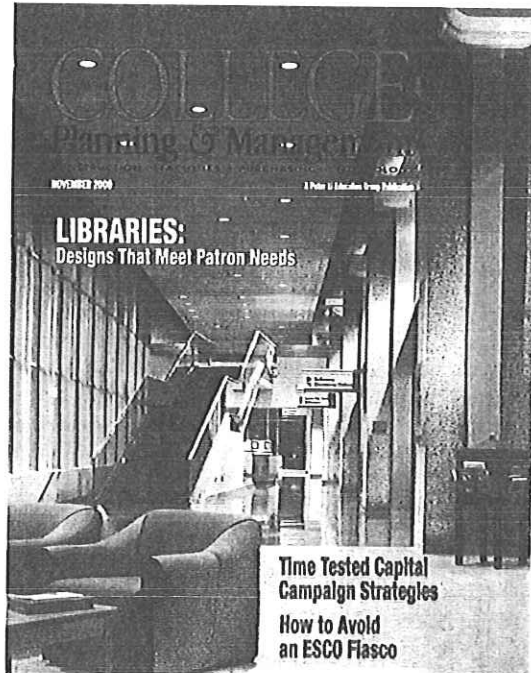
be air-conditioned from central locations. In addition, it will streamline operations, reduce costs, and improve the reliability of existing air conditioning systems.

The first phase of the Campus Chilled Water Systems covers the Western Campus is estimated to be near 6,000 tons of chiller plant and distribution system with variable water volume (VWV) pumping for energy and operation systems. Ice storage, absorption chillers, and electrical centrifugal chillers were all to be evaluated as part of O.U.'s overall chiller plant strategies. The chillers will be automated through a central DDC control system and lay the foundation for the remainder of the campus.

The Performance Contracting program involves Facilities Management Buildings and Residence and Auxiliary Services facilities. Equipment that is beyond their service life and operating very inefficiently will be replaced. The campuses coal fired boiler system that generates low cost steam (\$2.62 per MLbs) will be extended to replace the building boilers reducing energy and operating costs.



"ZDS is worth the monies the University paid for their services. It was important to have somebody guide us through the process. ZDS was not just an important part of the process; it was one of our most valuable assets," says Sherwood Wilson PhD, Associate VP for Administration.



Published in the "College of Planning & Management - November 2000"

Projected Performance Contracting Cost:	\$25,000,000 saving over \$2,500,000 annually
Total Projected Capital Project Cost:	\$33,500,000 for District Cooling
Project Size:	Multiple Projects covering entire campus
Project Completion:	2001 for ZDS's work

ZDS Design/Consulting Services

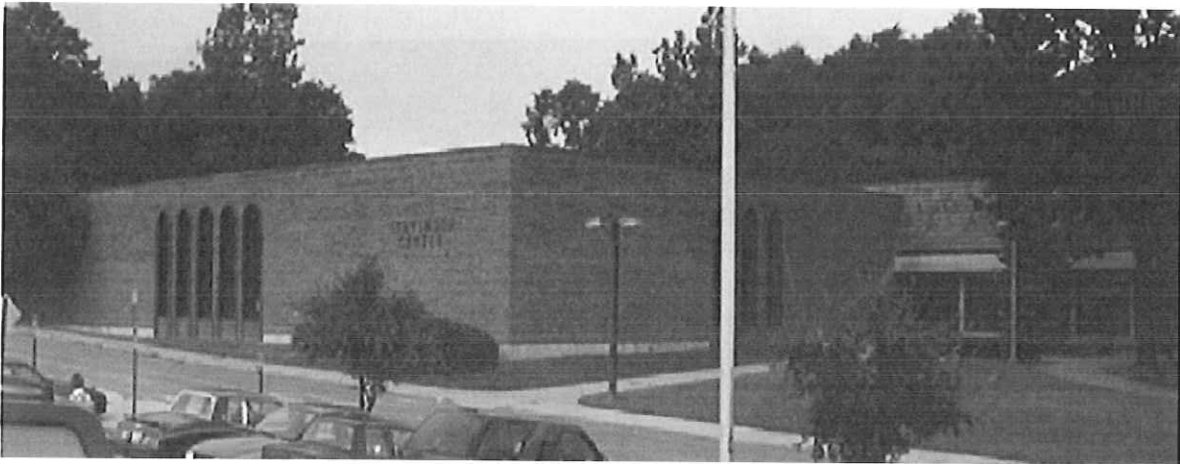
Project Names: *Stevenson Library and Bennett Hall ME Renovations*
Client: *Ohio University, Chillicothe Campus, Chillicothe, Ohio*

Client Contact: **Mr. David Scott,** **Ms. Pamela Callahan, AIA**
Director of Physical Plant Architect, Facility Planner
Phone: (740)-774-7243 Phone: (740)-593-2727
571 West Fifth Street Building 19, The Ridges
Chillicothe, Ohio 45601 Athens, Ohio 45701-2979

Services: Engineering planning, mechanical and electrical design, consulting for establishing comprehensive Performance Contracting program coordinated with HVAC and electrical renovations to Stevenson Library, Bennett Hall and proposed renovations to Shoemaker gym.

Project Description

ZDS Design/Consulting Services was originally hired to provide master planning for all HVAC, lighting, power and utilities on campus and provide a comprehensive audit of available remaining life of mechanical and electrical equipment and expected savings for implementing capitol upgrades while reducing operating costs. A hybrid comprehensive performance contracting program and capital upgrades projects for OU's Chillicothe Campus evolved from that process. The planned upgrades were phased to allow for funding to be in place as the upgrades needed to occur over the 5 to 10 year plan.



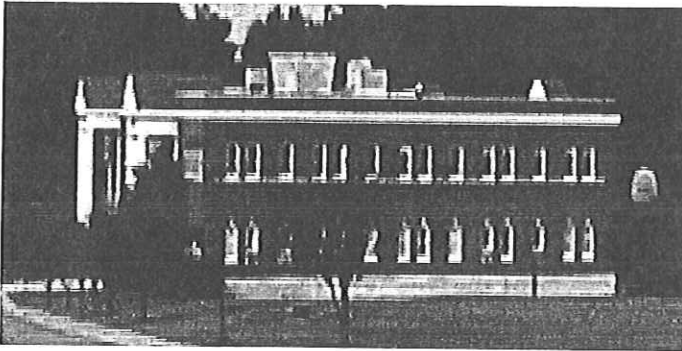
Stevenson Library – Renovations

The initial phase addressed indoor air quality concerns in the Stevenson Library. Mold and lack of humidity control caused concern by the faculty and students. The HVAC and electrical renovations addressed the Indoor Air Quality concerns, reduced operating costs while improving

PROJECT EXPERIENCE

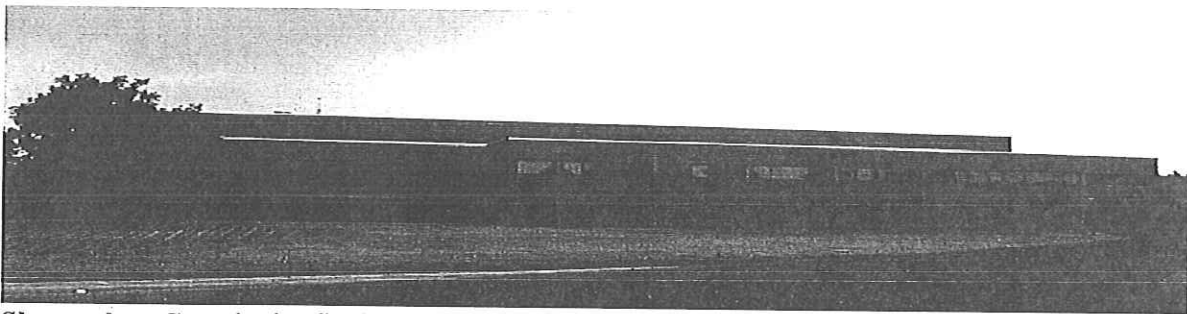
comfort. HVAC equipment was retrofitted or replaced to extend the life of the equipment for at least another 20 years.

The next phase involved upgrading the chiller plant and cooling tower that served most of the campus and the installation of variable water volume pumping and DDC controls. The chiller plant upgrades were in Bennett Hall.



Bennett Hall
100,000 square-foot classroom
facility with science labs

The Bennett Hall renovations included comprehensive HVAC renovations which include a new boiler plant to serve both Bennett Hall and Stevenson Library and incorporating of the chilled water plant upgrades. The capital upgrades for this phase came in under budget and were completed in 2003. Asbestos abatement was also part of the needs for this project. The building also had to remain in use during construction.



Shoemaker Gym is the final phase of the program and is expected to be addressed in the near future. Comprehensive DDC controls and lighting upgrades along with the HVAC upgrades produced significant operating savings and addressed many of the Universities IAQ concerns.

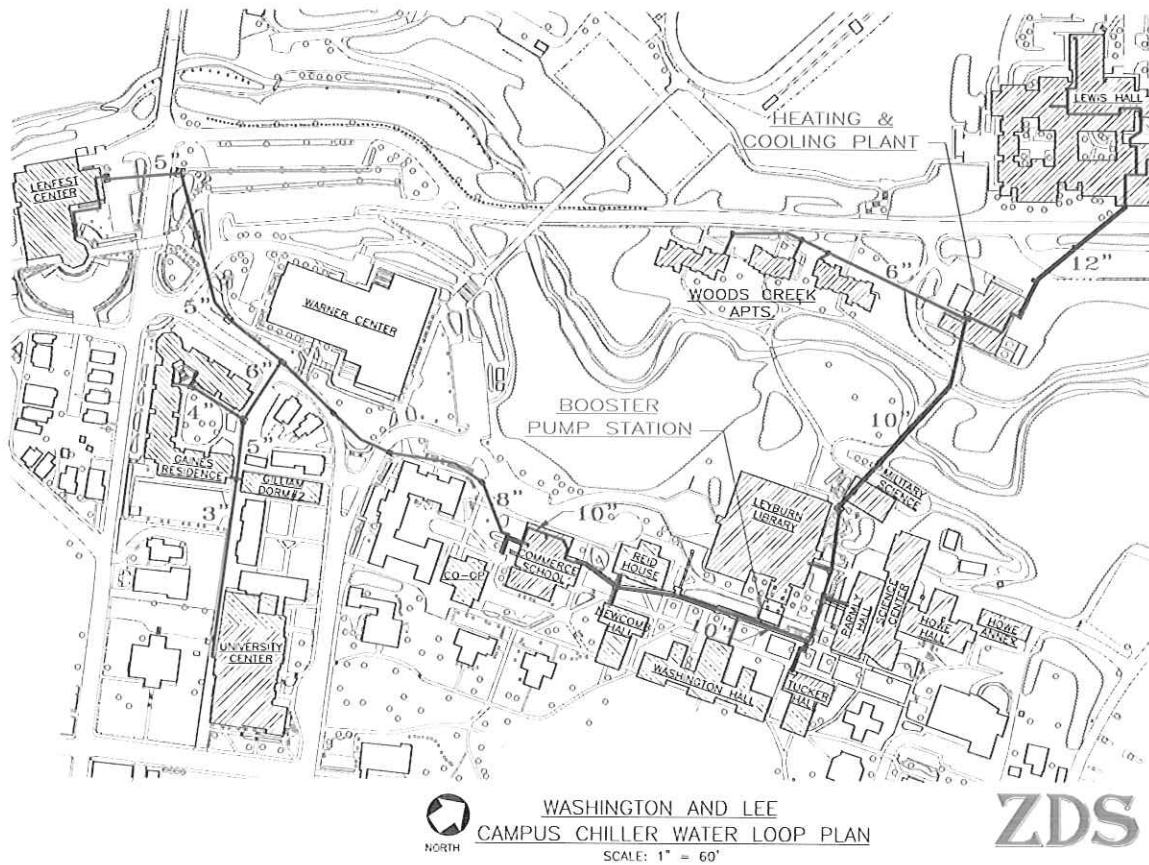
<i>Project Size:</i>	Approximately 127,000 FT ² thru 2004
<i>Total Capital Project Cost thru 2003:</i>	\$4,400,000
<i>Estimated Annual Savings:</i>	Between \$200,000 and \$300,000
<i>Project Completion:</i>	2004

ZDS Design/Consulting Services

Project Names: *District Cooling/Chiller Plant Renovations*
Client: *Washington & Lee University, Lexington, Va.*

Client Contact: Scott Beebe
Dir. of Building & Grounds
Phone (540) 463-8491
Washington & Lee University
Lexington, VA 24450

Services: Engineering planning, design, commissioning and construction administration for District Cooling Renovations and other HVAC and Electrical systems.



Project Description

ZDS Design/Consulting Services has been involved in numerous mechanical/electrical designs, Indoor Air Quality and recommissioning projects for Washington & Lee University. The project shown involved the master planning for the Campus Chilled Water Systems and the design, supervision, preparation of construction documents, specifications, construction administration,

PROJECT EXPERIENCE

and commissioning of a 3,100 ton chiller plant and distribution system with variable water volume (VWV) pumping for energy and operation systems. Ice storage, absorption chillers, direct gas fired chillers, and electrical centrifugal chillers were evaluated as part of W&L overall chiller plant strategies. The concepts implemented saved on construction costs by taking advantage of the diversity of the air conditioning requirements of the campus buildings enabling the distribution piping and pumping systems to be sized for 75% of their peak requirements.



The Washington & Lee University District Cooling project was fast tracked. ZDS design and served as the construction manager, managing over 14 separate bid packages to complete the project under budget and on time.

Life cycle cost analysis was performed in evaluating different chiller types (e.g. absorption, electric centrifugal, ice storage) to determine the best system to fit W&L needs. A utility grant was also secured as a result of ZDS's analysis to help pay for the improvements.

The hybrid chiller plant consists of a two-stage absorption chiller and electric centrifugal chillers which are staged to take advantage of time of day rates and demand load shedding. The chillers are automated through a central DDC control system. The new electric centrifugal chillers are also interfaced with the building automation system through BACNET interface panels.

The chiller project has received national recognition for pioneering series VWV pumping and for using a combination mixer-air separator in the main chiller plant piping system. Other projects include Commerce School mechanical system analysis for Indoor Air Quality and the Natatorium mechanical system analysis for Indoor Air Quality.

<i>Project Size:</i>	Entire Campus for District Cooling
<i>Total District Cooling Project Cost:</i>	\$2,100,000
<i>Estimated Annual Energy Savings:</i>	\$283,000
<i>Completion Date of last project:</i>	2001

ZDS Design/Consulting Services

Project Name: *Williamson Campus - HVAC Retrofits*

Client: *Southern WV Community & Technical College, Williamson, WV*

Client Contact: Ms. Rita Roberson
Campus Manager
1601 Armory Drive
Williamson, WV 25661
Phone (304)-235-6046 x. 311

Services: Engineering planning & design for HVAC and Electrical retrofits, DDC Controls, AHU's replacement, chiller replacement, Boiler replacement, and roofing retrofits.



Project Description

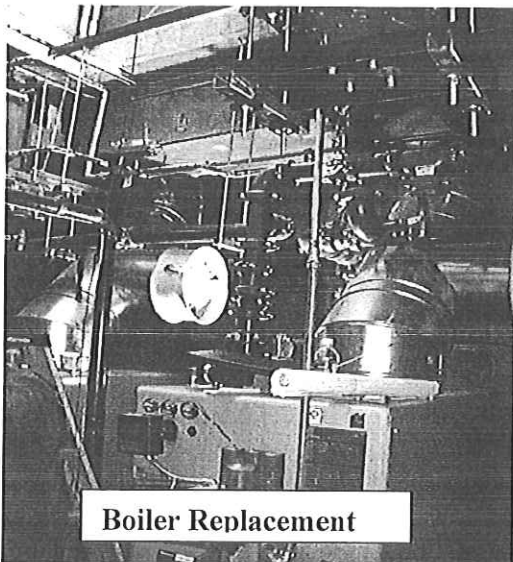
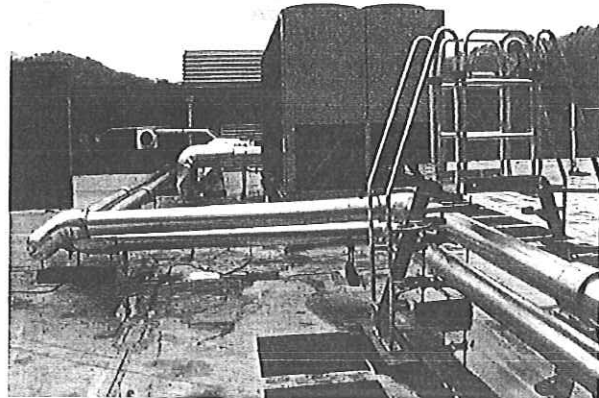
Southern WV Community & Technical College's first permanent building was dedicated in Williamson in 1971 and in need of significant retrofits due to age and obsolescence. The College had many needs but little funding and needed guidance on how to define the problems and phase in completing the work over a multi-year period as funding was found. ZDS was selected in 2003 and contracted under a master agreement for the planning, design, bidding and construction administration services for projects with this college. This contract continues today with the completion of HVAC renovation to the Williamson Campus.

PROJECT EXPERIENCE

The HVAC system had a direct impact on the health and safety of the college students and staff. The existing HVAC systems at the Williamson Campus were not functioning as they should. Occupant comfort was not being maintained and recommended levels of outside ventilation air were not being introduced to the classroom. ZDS reviewed the existing HVAC system to address health, safety, and IAQ issues while developing 15 separate options with their associated opinion of costs for modifying, updating and replacing the existing equipment. We also assisted in prioritizing the options while developing a phasing plan to implement the recommendations.

ZDS's planning and design services included providing HVAC system and associated electrical retrofits and their sub-systems to provide a comfortable environment while addressing Indoor Air Quality, energy efficiency, operating costs and meeting the Owner's needs while the building remained in use. HVAC systems were enhanced to meet applicable codes and standards and improved indoor air quality by increasing outdoor ventilation air rates, higher filtration, strict humidity control, DDC monitoring/control and other design strategies.

Chiller Replacement



One of the challenges for the design was finding a way to fit the new HVAC equipment within existing spaces while still providing proper space for servicing the equipment. Equipment rooms were already too small for proper clearances so selection of type of HVAC equipment used that minimized floor space while also meeting current codes was successfully addressed.

The MEP design aids the College to operate their facilities efficiently and effectively and the improvement will greatly benefit the faculty and students for many years to come. ZDS also provided design services for roof replacement projects at the Williamson and Logan campus facilities.

MEP Project Cost:

\$1,040,000

Project Size:

67,750 FT²

Completion Date:

Construction Substantially Complete 2005

ZDS Design/Consulting Services

Client: *McDowell County Schools, West Virginia*

Project: *New "War" Southside K-8 School*

Project Location: McDowell County Schools
Southside K-8 School, 1 Owl's Nest Drive, War, WV 24892



Project Description

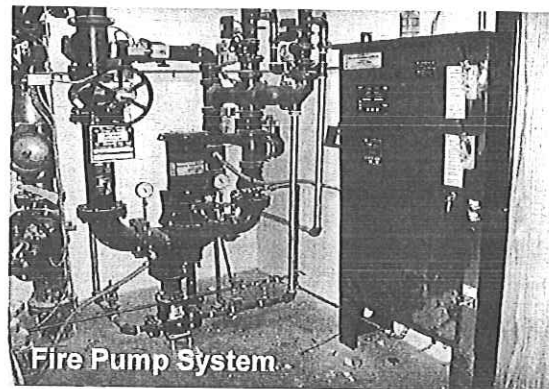
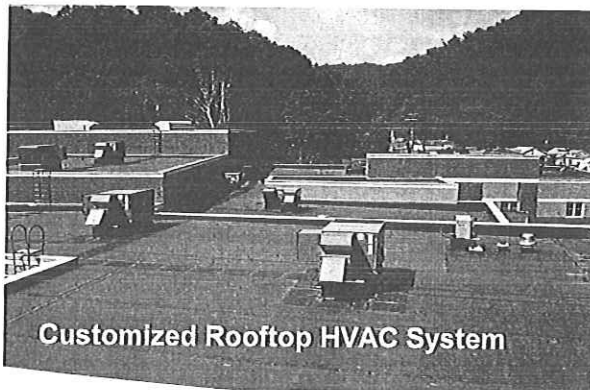
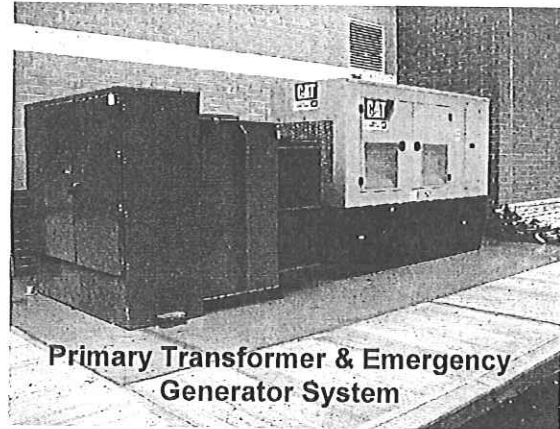
Superintendent Suzette Cook, Governor Joe Manchin and Dr. Mark Manchin, SBA Executive Director/previous McDowell County Schools superintendent shown above attended the ribbon cutting dedication ceremony celebrating the grand opening of the school which symbolized a new era for McDowell County Schools. This was the first new school built in the county in decades.

ZDS provided the HVAC, plumbing, fire protection and electrical engineering design for the new Southside K-8 School that was completed in 2008. The school was funded from a combination of grants from the Corp of Engineers and School Building Authority as part of an overall program to replace repeatedly flooded antiquated schools. The new school is located across from the old Big Creek High School site in downtown War, West Virginia.

McDowell County Schools included the Maintenance staff in a key role as part of the design team. The facility was designed around equipment that McDowell County schools could obtain service and support locally. The energy efficient design included Direct Digital Controls for remote monitoring and control of the facility's HVAC systems. Energy efficient lighting, motors and equipment were also incorporated into the facility's systems. McDowell County Schools elected to be proactive in addressing Indoor Air Quality (IAQ) by incorporating many of the

PROJECT EXPERIENCE

recommended practices even before they were required by codes. Improving filtration, fully ducting the return air systems, addressing the condensate drainage system and providing adequate outside ventilation air were included in the HVAC systems.



The new school was designed to meet the requirements of both an elementary school and middle school. The new media center pictured shows energy efficient lighting and the inviting atmosphere. The HVAC used was primarily customized rooftop units with individual classroom comfort control. Electrical power is not reliable in the area so an emergency generator was included which also eliminated the need for battery packs throughout the building. Primary power metering was also selected to reduce the cost of electricity on the all electric facility. Natural gas was not available. A fire pump was installed due to unusually low municipal water pressure and to meet the State Fire Marshal requirements for the fully sprinklered school.

The project was completed on schedule and within budget.

Total Project Cost: \$9,306,443 of which \$3,750,000 were MEP costs
SBA & Corp of Engineering Funding \$9,306,443
School Size: 73,050 Square-Feet

ZDS Design/Consulting Services

Project Name: *Webster County High School HVAC Renovations*

Client: *Webster County Schools, West Virginia*

Client Contact: Mr. Harry Given,
Retired Dir. of Maintenance.
Home Phone (304) 226-5288
Webster County Schools
Webster Springs, WV 26288

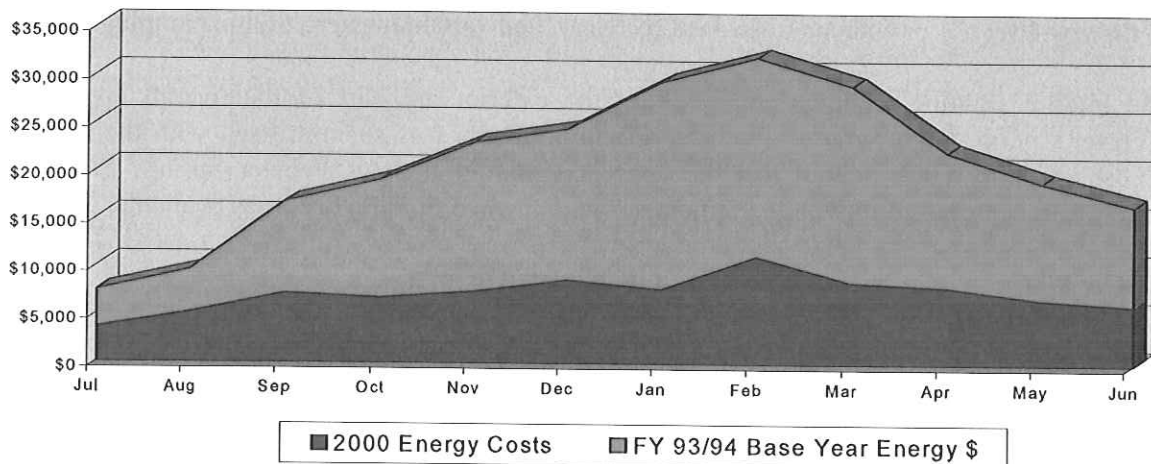
Services: Engineering planning and design
for HVAC Renovations, Exterior
Renovations, Lighting and
Electrical Renovations

Project Description

Initially Webster County Schools solicited bids from several Performance Contracting firms to make upgrades at the high school and pay for the improvements. Performance contracting approach could only partially pay for the improvements and a pure performance contracting approach was dropped. Webster County Schools then hired **ZDS Design/Consulting Services** to evaluate their options, design their recommended solutions for Webster County High School, and establish an approach to address the county HVAC needs with low operating costs.

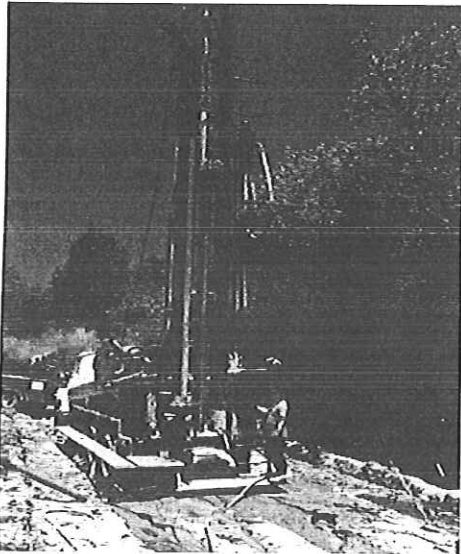
Multiple Heating Ventilating and Air Conditioning (HVAC) systems were evaluated and a geothermal heat pump system proved to have the lowest life cycle cost. This system was projected to reduce their HVAC electric cost by nearly 50% over usage of the existing system. **ZDS** assisted Webster County Schools in obtaining funding for the project from the State's School Building Authority and receive additional grants from the Geothermal Heat Pump Consortium and Allegheny Power for the project which was the first major geothermal heat pump system in the State of West Virginia.

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



PROJECT EXPERIENCE

Webster County High School used a 500 ton geothermal heat pump loop consisting of 240 wells; 307 foot deep, with over 28 miles of underground piping spread in an adjacent practice football field. A 20% propylene glycol/water solution is pumped through the closed loop with a variable water volume (VWV) pumping system for energy and operation systems. The HVAC system is fully automated through a central Direct Digital Control (DDC) system. Indoor air quality issues are addressed in the new design through increased ventilation, improved filtration, customizing the design of the AHU's to address current Indoor Air Quality (IAQ) practices, and cleaning/coating existing ductwork. Operating costs for the increased ventilation were minimized through incorporating air-to-air energy recovery systems into the new rooftop air handling equipment. The combining of the air-to-air heat recovery together with the primary air handling equipment is receiving national attention and may be the first of its kind for geothermal applications.



*Drilling for the ground
loop for Webster County
High School's 500-ton
Geothermal system.*

*It is the largest
GeoExchange installation to date in
West Virginia
and the surrounding region.*

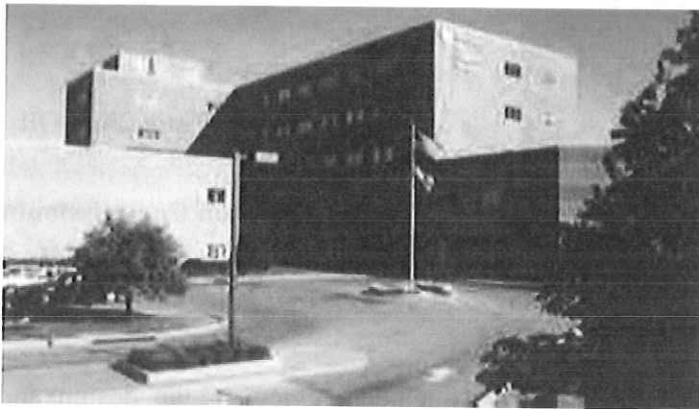
Systems for Control of Energy Use: Geothermal Heat Pump system, DDC controls, customized rooftop AHU's with air-to-air heat recovery, and variable water volume pumping.

The interior lighting, ceilings and bricking the exterior are part of the overall upgrades to Webster County High School. Webster County Schools was so impressed with the results at Webster County High School that the approach was applied to Webster Springs Elementary School and is proposed for Glade Elementary School when funding becomes available.

Project Size:	110,000 ft²
Total Project Cost:	\$5,083,000
SBA Funds:	\$5,083,000
Potential Annual Energy Savings:	50% Reduction HVAC & Lighting Operating Costs.

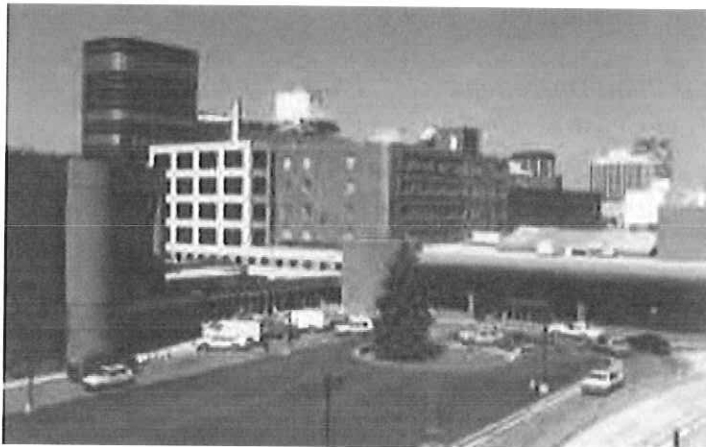
Client: *Charleston Area Medical Center, Charleston, WV*

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**



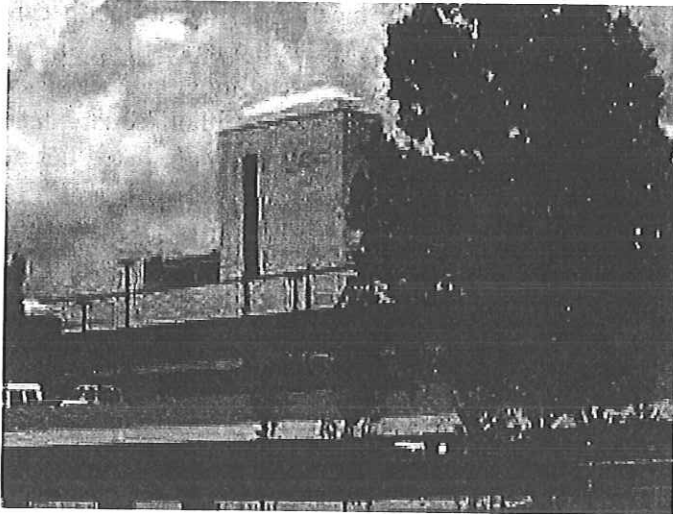
CAMC General Division

- **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

PROJECT EXPERIENCE

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*



JOSEPH E. BIRD, ASLA
Senior Vice President
Project Manager

EDUCATION

West Virginia University, BSLA, 1978

REGISTRATION

Landscape Architect, West Virginia, 1981

**PROFESSIONAL
HISTORY**

August 1985 to Present: Chapman Technical Group
Senior Vice President and Project Manager.

May 1978 to August 1985: Kelley, Gidley, Blair & Wolfe, Inc.
Landscape Architect and Project Manager.

Mr. Bird is a project manager and registered landscape architect. His experience ranges from large site development projects to the management of multi-discipline and architectural projects.

34 years professional experience.

**PROJECT
EXPERIENCE**

Site Development: Site planning and project management for numerous projects throughout West Virginia ranging from small campus sites to large sites for commercial, government, industrial, and institutional development. Projects include military complexes, campuses, public housing developments and other public facilities.

Parks and Recreation: Projects include swimming pools, bathhouses, cabins and support facilities for the West Virginia Division of Natural Resources and similar facilities for county and municipal park systems. Also involved in the design of facilities such as softball fields, fishing access facilities, recreation facilities for prisons, as well as passive recreation areas for public and private clients.

Miscellaneous: Other project experience includes the urban planning and development, streetscape design, roadway and storm drainage projects, as well as the project management of numerous major architectural projects throughout West Virginia.

AFFILIATIONS

West Virginia Chapter of the American Society of Landscape Architects

AWARDS

Honor Award for Shrewsbury St. Redevelopment Plan
West Virginia Chapter of American Society of Landscape Architects



SHARON L. CHAPMAN

President

Interior Designer

EDUCATION

University of Charleston, Carleton Varney Department of Art and Interior Design, BA, Interior Design, 1993

REGISTRATION

Allied Member, ASID

PROFESSIONAL HISTORY

July 1996 to Present: Chapman Technical Group
President and Interior Designer.

January 1991 to July 1996: Chapman Technical Group
Executive Vice President and Interior Designer.

21 years professional experience.

PROJECT EXPERIENCE

Space planning, interior design, material selections and furniture layouts for new and renovation projects including a courthouse annex, city hall renovations and other public buildings, private offices, commercial facilities, recreation facilities, industrial buildings, and residential properties. Also involved in building renovation feasibility studies and use analyses, and building facade renovation projects.

AWARDS

University of Charleston, Academic Achievement Award for Art and Design
Finalist, Entrepreneur of the Year Award 1999
Finalist, Entrepreneur of the Year Award 2000
St. Albans Renaissance Group, Business Person of the Year 2002
Junior Achievement Chairman's Award, 2002-2003
St. Albans Renaissance Group, Appreciation Award 2005
George Warren Fuller Award 2005
Thomas Memorial Foundation Quiet Hero Award 2009
University of Charleston, Alumni Achievement Award 2012

AFFILIATIONS

Allied Member, American Society of Interior Designers
Rotary, St. Albans, West Virginia - Past President 2002-2003
Member, West Virginia Chamber of Commerce
Member, Charleston Area Alliance - Honorary Board Director
Member, Putnam County Chamber of Commerce
Member, St. Albans Chamber of Commerce
Member, Contractor's Association of West Virginia
Board of Directors, Thomas Memorial Hospital Foundation
AWWA West Virginia Section
Member, STARDA Board - St. Albans
BB&T Advisory Board
Board of Directors - Gabriel Project of West Virginia



DALE E. WITHROW, AIT
Project Coordinator, Department Manager
Architecture

EDUCATION

West Virginia Institute of Technology, AS, Drafting and Design, 1975.

PROFESSIONAL HISTORY

November 2000 to Present: Chapman Technical Group
Project Coordinator/Department Manager.

March 1993 to August 2000: The HDMR Group, Inc.
Project Coordinator.

February 1990 to March 1993: AFAB Services
Owner - Designer/Drafter.

Prior to 1990 Mr. Withrow worked with several architectural and engineering firms as an employee and independent consultant.

From 1978 to 1987 he was a Facilities Planner for the Kanawha County Board of Education.

Mr. Withrow is a Project Coordinator involved in all aspects of a wide variety of architectural projects. He is also Manager of the Architecture Group.

37 years professional experience.

PROJECT EXPERIENCE

Project Design and Management: Experience ranges from drafting, detailing and design through construction observation and project management of numerous building projects in West Virginia, Kentucky and North Carolina including:

- Residential/Housing
- Governmental Facilities
- Hospital/Healthcare Facilities
- Public School Facilities
- College Athletic Facilities
- Hotel/Hospitality Facilities
- Airport Support Facilities
- Historic Preservation
- Military Support Facilities/Armories
- Grocery and Drug Chain Stores
- Industrial Plant/Laboratory Facilities
- Office Buildings
- Banking Facilities
- Americans with Disabilities Act Assessment and Implementation
- Public Safety Facilities

AFFILIATIONS

Certified Architect-in-Training, State of Arizona
Associate Member WVAIA
Secretary, St. Albans Business and Community Development Group
Vice Chair, Friends of the Alban Theatre
Board Member - St. Albans Chamber of Commerce
Chairman, St. Albans Blueprint Communities



W. THOMAS CLOER, III, AIA, NCARB
Project Architect

EDUCATION

University of Tennessee, BArch, 2001

REGISTRATION

NCARB Registered Architect, 2009
IDP Program completed.

PROFESSIONAL HISTORY

October 2006 to Present: Chapman Technical Group
Project Architect and Architectural Designer

2001-2006: NVisions Architects
Architect Intern and Architectural Designer

11 years professional experience.

PROJECT EXPERIENCE

Experience ranges from drafting, detailing and design through project management and construction administration of building projects throughout West Virginia including the following project types:

- Public School Facilities
- Government Facilities
- Office Buildings
- Medical Office Facilities
- Single Family Housing
- Multi-family Housing
- Recreational Facilities
- ADA Assessments
- Site Planning

AFFILIATIONS

American Institute of Architects
City of St. Albans Property and Maintenance Board, Member
City of St. Albans Historic District Committee, Member
Boy Scouts of America Troop 250 Committee Member



PHILLIP A. WARNOCK, NCARB, AIA
Project Architect

EDUCATION

The University of Tennessee, BArch, 1995

REGISTRATION

Architect, West Virginia, 2003
Architect, Tennessee, 2002

PROFESSIONAL HISTORY

September 2003 to Present: Chapman Technical Group
Project Architect.

June 2002 to July 2003: ZMM
Architect.

June 1995 to May 2002: Lockwood Greene
Intern Architect.

August 1991 to July 1993: Omni Associates
Architectural Draftsman.

21 years professional experience with additional experience in construction, interior design and developing.

PROJECT EXPERIENCE

Project Participation and Design: Experience ranges from design, detailing and drafting through project management and construction administration of building projects in various states, including West Virginia, Tennessee, Kentucky and South Carolina. Project experience includes:

- Public School Facilities
- Community Centers
- Recreational Facilities
- Aviation Facilities
- Health Care/Hospice Facilities
- Medical and Psychiatric Clinics
- Pharmaceutical Facilities
- Research and Development Labs
- Office Buildings
- Rest Areas and Welcome Centers
- Historic Preservation
- Historic Renovation/Additions
- Adaptive Reuse
- Governmental Facilities
- Military Support Facilities/Armories
- Multi-Family Housing
- ADA Assessments
- HUD 811, 202 and ECHO Facilities
- Small Cities Block Grants
- Public Safety Facilities

AFFILIATIONS

National Council of Architectural Registration Boards (NCARB)
American Institute of Architects (AIA), Executive Committee 2010-2012

AWARDS

2008 AIA West Virginia Honor Award for Excellence in Architecture
For the historic preservation of the Upshur County Courthouse.

2010 AIA-West Virginia Merit Award for Achievement in Architecture
For the I-79 Rest Areas in Burnsville



DAVID C. HOY, P.E.
Civil/Structural Engineer

EDUCATION

West Virginia University, BSCE, 2006

REGISTRATION

P.E., West Virginia, 2011

**PROFESSIONAL
HISTORY**

January 2007 to Present: Chapman Technical Group
Civil Engineer

Summer 2005: Advantage Home and Environment

Assisted structural engineer with home inspections, and report preparation.

5 years professional experience.

**PROJECT
EXPERIENCE**

Structural: Investigation, analysis, and design of various building structural systems, including foundation design. Review shop drawings and performs periodic site visits.

Civil: Design of highways, bridges, and airport improvements projects throughout West Virginia.

AFFILIATIONS

Chi Epsilon, National Civil Engineering Honor Society

ASCE, Member

WV Section YMF, Treasurer



STEPHEN M. JOHNSON, PE
Group Manager
Civil/Environmental Engineering

EDUCATION

West Virginia Institute of Technology, BSCE, 2004

REGISTRATION

Civil Engineering, West Virginia, 2009
Civil Engineering, North Carolina, 2008
Civil Engineering, Virginia, 2011

EXPERIENCE

January 2009 to Present: Chapman Technical Group
Civil Engineer

October 2006 to January 2009: McKim and Creed
Civil Engineer

May 2004 to October 2006: Chapman Technical Group
Civil Engineer

June 2001 to May 2004: Allegheny Power
Gas Support Technician/Intern

8 years professional experience.

**PROJECT
EXPERIENCE**

Water Systems: Overall experience includes planning, design, bidding, and construction administration/management of various public and private water system projects throughout West Virginia, Virginia, and North Carolina. Specific project experience includes distribution systems, river crossings, horizontal directional drills, wells, raw water intakes, transmission lines, booster stations, treatment plants, ground and elevated water storage tank design, painting, and rehab, SCADA systems computer modeling, treatment process evaluation, and problem troubleshooting in existing systems.

Wastewater Systems: Overall experience includes comprehensive system master plans, design, bidding, construction administration/management of various public and private wastewater system projects throughout West Virginia, Virginia, and North Carolina. Specific project experience includes gravity and low-pressure collection systems, pump stations and force main transmission systems, treatment plant process evaluation and design, trenchless pipeline rehabilitation, bypass pump system design, odor and corrosion control, effluent infiltration ponds, decentralized and alternative on-site disposal systems, and SCADA systems.

Stormwater Systems: Overall experience includes comprehensive system master plans, design, bidding, construction administration/management of various public and private stormwater system projects throughout West Virginia, Virginia, and North Carolina. Specific project experience includes drainage basin hydraulic analysis, stormwater collection, detention and BMP system design, construction stormwater management plan preparation, and MS4 permit guidance.



ROBERT D. DINSMORE
Project Designer

EDUCATION

West Virginia University, BSLA, 2010

**PROFESSIONAL
HISTORY**

June 2010 to Present: Chapman Technical Group
Project Designer.

Fall 2008 to Fall 2009: West Virginia University
Teaching Assistant, Intro to Landscape Architecture Graphics

Fall 2009 to Spring 2010: West Virginia University
Teaching Assistant, History of Landscape Architecture

Summer 2008: Austin Outdoor Landscape Professionals
Landscape Architecture Intern,

2006 to 2007: Austin Outdoor Landscape Professionals
Project Manager

2 year of professional experience. Mr. Dinsmore is responsible for the design and development of urban design projects, parks and recreation projects, and landscape design.

**PROJECT
EXPERIENCE**

Urban Design: Designed and developed a master plan as part of his senior thesis for the Boston waterfront development.

Recreation Design: Developed master plans and designs for various facilities as part of scholastic studies.

Landscape Design: Designed and installed numerous landscape plans for high end residential and resort projects constructed in Florida.

AFFILIATIONS

American Society of Landscape Architects WV Chapter (Chapter Director)
Sigma Lambda Alpha Landscape Architecture Honorary (WVU President)
G.E.R.M.A.N. Club of Virginia Tech
Sunnyside Up Campus Neighborhoods Revitalization Corporation (Volunteer)

AWARDS

ASLA Student Honor Award Winner 2010
ASLA Student Merit Award Nominee 2010

Todd (Ted) A. Zachwieja
PE, C.E.M., LEED AP

Chief Executive Officer
Principal-in-Charge M/E/P Design

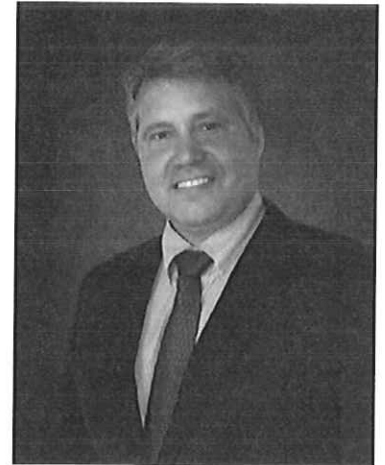
Todd has more than 30 years of experience in the design, construction management, and specifications for mechanical engineering, heating, ventilating, air conditioning, plumbing, electrical, and lighting, as well as indoor air quality analysis and building system commissioning for educational, commercial, 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 covering southeastern United States. He also developed computer programs for building energy analysis and monitoring and presented technical papers at regional and national conferences. Some of Todd's project experience includes:

GOVERNMENT AND COMMERCIAL

- Bank One – WV
- Bayer Material Science
- Calvert County Aquatic Center, MD
- Culture Center HVAC renovations
- General Motors Corporation of North America Re-commissioning Program
- Kanawha County Commission – 120,000 sf additions/renovations for the Judicial Annex/Kanawha County Courthouse – Charleston
- Kohl's
- Laidley Towers – Charleston
- Mercer County Courthouse Annex – Princeton
- Olin Corporation
- Phillip Morris USA
- Rhone-Poulenc
- Santa Anna Federal Building, CA
- State of WV Capitol Complex Central Heating Plant and Renovations
- Sears
- Saint Patrick Church Renovations
- Sacred Heart Pavilion
- Toyota Motor Manufacturer, WV Inc.
- Union Carbide/DOW
- United Center – Charleston
- Walker Machinery
- West Virginia Air National Guard
- West Virginia Army National Guard
- West Virginia Department of Transportation/DOH
- West Virginia Division of Protective Services
- West Virginia Higher Education Authority
- West Virginia General Services Division
- West Virginia Parkways Authority
- West Virginia Public Service Commission Headquarters
- West Virginia State Capitol Complex renovations
- Yeager Airport

Todd 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.



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

Ted T. Zachwieja**Principal-in-Charge
Construction Administration**

Ted has over 52 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.

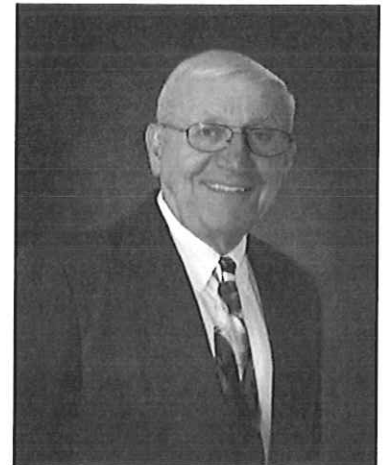
Ted's experience includes work for U.S. Steel, Union Carbide, Rhone-Poulenc, Bluefield Regional Medical Center, Charleston Area Medical Center, United Hospital Center, Kanawha County Schools, Marshall University, West Virginia Capitol Complex, West Virginia Institute of Technology, West Virginia University, 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 Division of Culture and History 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 the eastern United States.

Ted's most recent health care experience includes lighting projects and various studies for seven hospitals for the West Virginia Department of Health and Human Resources – Jackie Withrow Hospital, Beckley; Hopemont State Hospital, Terra Alta; John Manchin, Sr. Health Care Center, Fairmont; Lakin State Hospital, West Columbia; Mildred Mitchell-Bateman Hospital, Huntington; Welch Community Hospital, Welch; and William R. Sharpe, Jr. Hospital, Weston. Other health care experience includes millions in renovation and new construction design for Charleston Area Medical Center's (CAMC) Special Care Facility, Bluefield Regional Medical Center, 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 AFFILIATIONS**

Construction Specifications Institute
(Charter Member)

American Society of Mechanical
Engineers

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

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 A. Zachwieja III**Systems Administrator
M/E/P Designer**

Ted has over four years of experience and has completed extensive Building Information Modeling studies through Autodesk. He also had special courses in Advanced Computational Techniques, Control Systems, Design Project Management, Design Optimization, Measurement Instruments and Controls, and Sound Attenuation. Ted also has extensive studies in several of the leading engineering programs: Autodesk Revit software, AutoCAD, Pro-Engineering software, ANSYS, Lab View, MATLAB, and complete training in Microsoft Office Software. He also has experience in IT systems and administration. The experience encompasses development and deployment of a central server to networked computer systems, strategic development for a truly mobile employee, and research and development of new project management tools.

Ted's project experience includes the commissioning and design for heating, ventilating, air conditioning, plumbing, electrical and lighting systems for educational, health care, industrial and commercial facilities. He also maintains an active membership to the ASHRAE professional society. He maintains an active continuing education towards today's standards and codes.

Some of Ted's project experiences include the following:

COMMERCIAL and INDUSTRIAL

- West Virginia Air National Guard Maintenance Hangar, Charleston, WV
- West Virginia Air National Guard Fuel Cell Hangar, Charleston, WV
- Bayer Material Science
- I-70 Welcome Center, WV
- West Virginia State Capital Complex Central Heating Plant

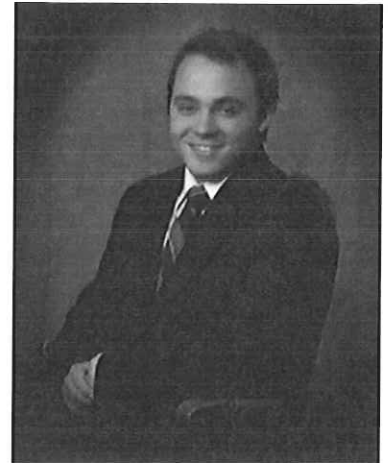
HEALTH CARE

- West Virginia Department of Health and Human Resources Hospitals:
 - Jackie Withrow Hospital, Beckley
 - Hopemont State Hospital, Terra Alta
 - John Manchin, Sr. Health Care Center, Fairmont
 - Lakin State Hospital, West Columbia
 - Mildred Mitchell-Bateman Hospital, Huntington
 - Welch Community Hospital, Welch
 - William R. Sharpe, Jr. Hospital, Weston

EDUCATIONAL**Schools**

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

- Greenbrier West High School Additions/Renovations, WV
- Davis-Thomas Elementary/Middle School Renovations, WV
- South Charleston High School Renovations, WV
- Glade Elementary/Middle School Renovations, WV
- Elkins Middle School Renovations, WV
- Jaeger/Panther Elementary School, WV

**EDUCATION**

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

PROFESSIONAL AFFILIATIONS

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

James E. Watters**Project Manager
Production Manager**

Jim has over 35 years experience in design and implementation of HVAC, plumbing and electrical systems including nine years in the construction industry. He has a comprehensive knowledge of construction documents, contracts, and development of cost estimates, budgets and schedules. Jim's strengths reside in his ability to manage projects and people in an organized and cost-effective manner. Jim has been involved with the design and production of mechanical and electrical drawings including HVAC, plumbing, fire protection, lighting, electrical power and specialized systems. He has worked with and managed engineers in projects for health care, educational and commercial buildings in the states of West Virginia, Ohio, Kentucky, Virginia, Georgia, New York, Arizona, Illinois and Massachusetts. 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. Some of Jim's HVAC, plumbing, fire protection and electrical project experience includes the following:

**GOVERNMENT AND
COMMERCIAL**

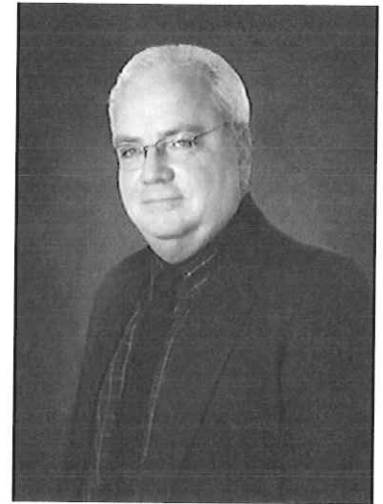
- Boyd County, Kentucky Judicial Center
- Fenway Park in Boston - Lightning protection and grounding study
- Kanawha County Commission Judicial Annex Renovations
- Tucker County Board Office Boiler Retrofit
- VA Hospital, Huntington
- West Virginia Department of Military Affairs and Public Safety Maintenance Facility in Eleanor
- West Virginia Department of Transportation Burnsville Rest Area and domestic water pumping station
- West Virginia Division of Culture and History Fire Alarm/Sprinkler upgrades

EDUCATIONAL

- Elkins Middle School HVAC and electrical renovations
- Marshall University Smith Hall Renovations
- Marshall University Student Housing in Huntington
- New Jaeger/Panther Elementary School
- Paul Blazer High School in Ashland
- Pleasant Hill Elementary School renovations in Calhoun County
- Ritchie County Middle/High School

HEALTH CARE

- Charleston Area Medical Center Memorial Division in Charleston
- Charleston Area Medical Center General Division in Charleston
- Charleston Area Medical Center Women's and Children's Hospital in Charleston
- Kings Daughters Medical Center in Ashland
- St. Mary's Medical Center in Huntington
- West Virginia Department of Health and Human Resources:
 - Jackie Withrow Hospital, Beckley
 - Hopedont State Hospital, Terra Alta
 - John Manchin, Sr. Health Care Center, Fairmont
 - Lakin State Hospital, West Columbia
 - Mildred Mitchell-Bateman Hospital, Huntington
 - Welch Community Hospital, Welch
 - William R. Sharpe, Jr. Hospital, Weston

**PROFESSIONAL AND
COMMUNITY AFFILIATIONS**

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)

Jennings L. Davis II, P.E., CIE**Mechanical Engineer**

Jennings has more than 20 years of experience in the design, project management and construction of heating, ventilating and air conditioning (HVAC), plumbing, electrical and specialized systems for healthcare, institutional and commercial facilities. His professional experience includes 11 years as an Owner's Representative at West Virginia University (WVU) in the positions of Staff Engineer and Construction Project Manager, 5.5 years as Mechanical Engineer for the West Virginia Department of Education (WVDE), and six years as a Project Engineer with a design and consulting engineering firm.

During his employment with WVU, Jennings was responsible for management of major repair and capital construction projects designed by outside Architectural and Engineering firms with budgets ranging from \$50,000 to \$37,000,000, as well as the design of smaller in-house projects ranging from \$10,000 to \$500,000. While working for the WVDE, he was responsible for quality control of design documents for various construction projects; troubleshooting maintenance for HVAC controls and for Indoor Air Quality (IAQ); recommissioning of HVAC systems to original design parameters; recommendations for HVAC operational and energy savings procedures; and training of maintenance personnel. He investigated facilities concentrating primarily on HVAC operation and occupant safety. Tasks included IAQ measurements such as temperature, humidity and carbon dioxide; HVAC equipment visual inspection; life safety assessment; and building component checks.

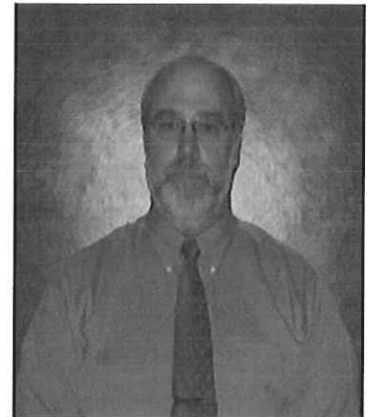
As a Project Engineer, Jennings specializes in developing scope, budget and design parameters; establishing program requirements through interaction with Owners and other Team members; design reviews; budget analysis and control; schedule control; complete design oversight and task assignment; and project closeout. Some of the projects he has been involved with include numerous renovation projects at several VA Medical Centers including multiple radiology room/suite installations and renovations, MRI's, X-ray and CT Scanners, Emergency Department renovations, numerous hospital out-patient treatment areas and specialty clinic renovations, a new \$4.4 million Hospice facility at the VA Medical Center in Coatesville, Pennsylvania, and a new \$5 million Medical Office Building for Somerset Hospital in Somerset, Pennsylvania.

Other projects include a \$37 million addition and renovation to WVU's Wise Library, a \$2.1 million chiller replacement for WVU's Engineering Sciences Building, a new primary 23kV power feed to the existing sub-station for the WVU Coliseum, engineering design for a hydrogenation reactor laboratory for WVU's Engineering Research Building, an \$8 million HVAC and sprinkler renovation for WVU's Armstrong Hall and HVAC design for transmitter station for the West Virginia Public Broadcasting Station.

A more complete list of Jennings' clients includes the following:

SCHOOLS AND UNIVERSITIES

- West Virginia University (WVU)
 - Wise Library addition and renovation
 - Engineering Sciences Building chiller replacement
 - Coliseum's new primary 23kV power feed to existing sub-station
 - Engineering Research Building hydrogenation reactor laboratory
 - Armstrong Hall HVAC and sprinkler renovation
- Shepherd University Ikenberry Hall HVAC Renovation

**EDUCATION**

BS in Mechanical Engineering from West Virginia University

REGISTRATIONS

Professional Engineer West Virginia No. 15060

Professional Engineer Pennsylvania No. PE062186

Professional Engineer Virginia No. 040028

PROFESSIONAL AFFILIATIONS

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

James W. Lowry, P.E.

HVAC, Fire Protection, Plumbing and Commissioning Engineer

James has seven years of experience and has completed extensive HVAC design training at Carrier Training Center, Syracuse, New York, and hydronic design/applications at the B&G Training Center, Chicago, Illinois. 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, industrial and commercial facilities. He specializes in HVAC, fire protection and 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.

Some of James' project experience includes the following:

EDUCATIONAL

- Concord University Technology Center
- Davis Thomas Elementary/Middle School
- Eastern Greenbrier Middle School addition
- Elkins Middle School HVAC/electrical renovations
- Glade Elementary/Middle School renovations
- Greenbrier West High School additions/renovations
- Harvard University
- Jaeger/Panther Elementary School
- Independence Middle School
- James Monroe High School HVAC renovations
- Man/Central Elementary addition
- Marshall University
- New McDowell County Southside K-8 School
- Park Middle School HVAC renovations
- Pleasant Hill Elementary renovations
- Ritchie County Middle/High School HVAC/plumbing renovations
- Shady Spring Elementary School
- Smithville Elementary School additions/renovations
- South Charleston High School
- Tucker County High/Career Center HVAC renovations
- West Virginia University Institute of Technology – Engineering Building Evaluation
- Woodrow Wilson High School HVAC/electrical renovations

INDUSTRIAL

- Bayer Material Science
- West Virginia Higher Education Policy Commission (WVHEPC) South Charleston Tech Center – Campus Comprehensive Infrastructure Evaluation



EDUCATION

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

REGISTRATIONS

West Virginia State Board of Registration for Professional Engineers

Professional Engineer West Virginia No. 18948

PROFESSIONAL AFFILIATIONS

American Society of Mechanical Engineers (ASME)

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

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 Marshall's project experience includes the following:

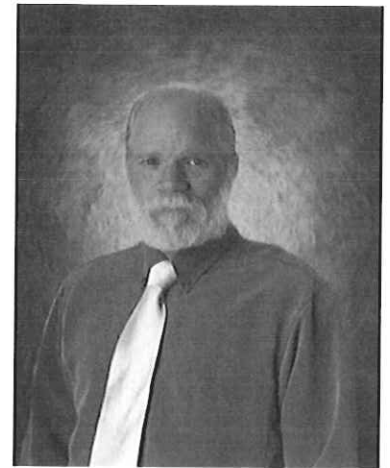
HEALTH CARE

- Charleston Area Medical Center (CAMC)
- CAMC Wound Care Center
- Montgomery General Hospital
- Outpatient Surgery Facility of Pennsylvania
- St. Joseph's Hospital
- United Hospital Center
- VA Hospital, Huntington
- Webster Memorial Hospital
- West Virginia Department of Health and Human Resources:
 - Jackie Withrow Hospital, Beckley
 - Hopemont State Hospital, Terra Alta
 - John Manchin, Sr. Health Care Center, Fairmont
 - Lakin State Hospital, West Columbia
 - Mildred Mitchell-Bateman Hospital, Huntington
 - Welch Community Hospital, Welch
 - William R. Sharpe, Jr. Hospital, Weston

EDUCATIONAL

- 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
- Mechanical, electrical and plumbing renovations for schools in the following counties in West Virginia:

Calhoun	Mingo
Clay	Monroe
Grant	Raleigh
Greenbrier	Randolph
Hardy	Ritchie
Harrison	Putnam
Jackson	Pocahontas
Kanawha	Summers
Lewis	Taylor
Logan	Tucker
Marion	Upshur
McDowell	Wayne
Mercer	Webster
	Wyoming



EDUCATION

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

Has completed various courses at Parkersburg Community College, Parkersburg, West Virginia and Arch Moore Vo-Tech, Frozen Camp, West Virginia

GOVERNMENT AND COMMERCIAL

- Kanawha County Judicial Annex HVAC renovations
- Morgantown Welcome Center
- I-70 Welcome Center
- DOT Welcome/Rest Area Prototypes
- DOT Boiler and Chiller replacement
- West Virginia Culture Center HVAC renov.
- Cass Scenic Railroad Clubhouse renov.
- 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

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.

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.

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

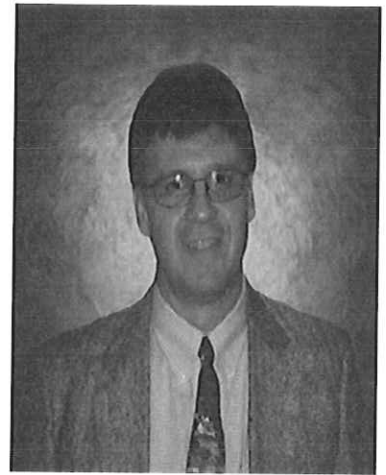
David G. Dial, P.E.**Senior MEP Engineer**

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 electrical 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, West Virginia University, 1978

Masters of Science Environmental Engineering, West Virginia University, 1980

REGISTRATION

Professional Engineer, West Virginia, No. 11692

References



1. Honorable Dick Callaway
City of St. Albans
Post Office Box 1488
St. Albans, WV 25177
(304) 727-2971
2. Mr. Bradley S. Leslie, P.E.
Assistant Chief
WV Division of Natural Resources
Parks & Recreation Section
324 4th Avenue
South Charleston, WV 25303
(304) 558-2764
3. Mr. William "Willie" Parker
County Administrator
Upshur County Commission
38 Main Street, Room 302
Buckhannon, WV 26201
(304) 472-0535
4. Mr. Dave Weekley
Director of Services
Ritchie County Schools
134 South Penn Avenue
Harrisville, WV 26362
(304) 643- 2991 ext. 223

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: CHA12017

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

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

Addendum Numbers Received:

(Check the box next to each addendum received)

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

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

Chapman Technical Group

Company


 Vice President

Authorized Signature

7/12/2012

Date

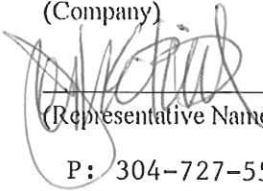
NOTE: This addendum acknowledgment should be submitted with the bid to expedite document processing.

CERTIFICATION AND SIGNATURE PAGE
CHA12017

By signing below, I certify that I have reviewed this Solicitation in its entirety; understand the requirements, terms and conditions, and other information contained herein; that I am submitting this bid or proposal for review and consideration; that I am authorized by the bidder to execute this bid or any documents related thereto on bidder's behalf; that I am authorized to bind the bidder in a contractual relationship; and that to the best of my knowledge, the bidder has properly registered with any State agency that may require registration.

Chapman Technical Group

(Company)

 Vice President
(Representative Name, Title)

P: 304-727-5501 F: 304-727-5580

(Contact Phone/Fax Number)

7/12/2012

(Date)

STATE 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: Chapman Technical Group

Authorized Signature: [Signature] Date: 7/12/2012

State of West Virginia

County of Kanawha, to-wit:

Taken, subscribed, and sworn to before me this 12th day of July, 2012.

My Commission expires September 20, 2020.

AFFIX SEAL HERE

NOTARY PUBLIC [Signature]

