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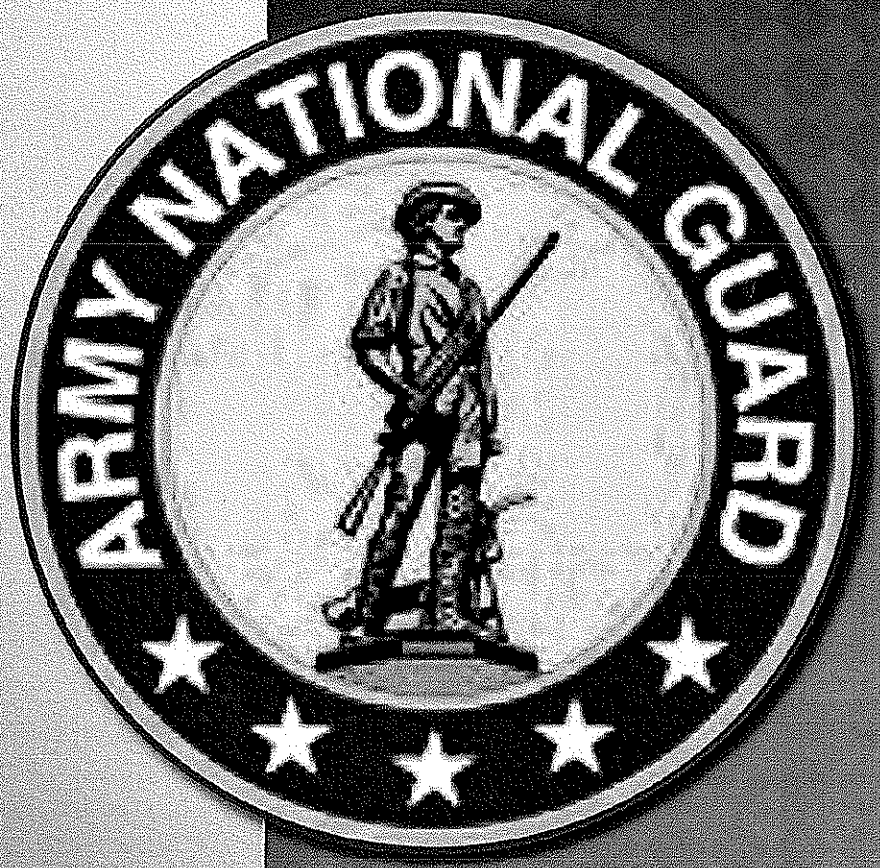
EXPRESSION OF INTEREST

WYK Associates, Inc.



Architectural/ Engineering Services

for the

West Virginia Army National Guard – Addition & Renovations to St. Albans Armory

Requested by:

Buyer:
 # 32 - John Abbott
Req#.: DEFK9018

Opening:
March 31, 2009
at 1:30 P.M.

WYK Associates, Inc.
P.O. Box 1484
205 Washington Avenue
Clarksburg, WV 26301
304-624-6326
wyk@wykarchitects.com

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WV Army National Guard – St. Albans, WV

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GAI Consultants

ii. STRUCTURAL ENGINEERING
Allegheny Design Services

iii. HVAC / ELECTRICAL / PLUMBING
ZDS Design / Consulting Services

VIII. REFERENCES

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Purchasing Affidavit

WYK Associates, Inc.

RFQ No. DEFK9018

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

VENDOR OWING A DEBT TO THE STATE:
West Virginia Code §5A-3-10a provides that: 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.

PUBLIC IMPROVEMENT CONTRACTS & DRUG-FREE WORKPLACE ACT:
If this is a solicitation for a public improvement construction contract, the vendor, by its signature below, affirms that it has a written plan for a drug-free workplace policy in compliance with Article 1D, Chapter 21 of the *West Virginia Code*. The vendor must make said affirmation with its bid submission. Further, public improvement construction contract may not be awarded to a vendor who does not have a written plan for a drug-free workplace policy in compliance with Article 1D, Chapter 21 of the *West Virginia Code* and who has not submitted that plan to the appropriate contracting authority in timely fashion. For a vendor who is a subcontractor, compliance with Section 5, Article 1D, Chapter 21 of the *West Virginia Code* may take place before their work on the public improvement is begun.

ANTITRUST:
In submitting a bid to any agency for the state of West Virginia, the bidder offers and agrees that if the bid is accepted the bidder will convey, sell, assign or transfer to the state of West Virginia all rights, title and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the state of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the state of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to the bidder.

I certify that this bid is made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership or person or entity submitting a bid for the same materials, supplies, equipment or services and is in all respects fair and without collusion or fraud. I further certify that I am authorized to sign the certification on behalf of the bidder or this bid.

LICENSING:
Vendors must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, West Virginia Insurance Commission, or any other state agencies or political subdivision. Furthermore, the vendor must provide all necessary releases to obtain information to enable the Director or spending unit to verify that the vendor is licensed and in good standing with the above entities.

CONFIDENTIALITY:
The vendor agrees that he or she will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the agency's policies, procedures and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in http://www.state.wv.us/admin/purchase/privacy/noticeConfidentiality.pdf.

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.

Vendor's Name: WYK Associates Inc.

Authorized Signature: [signature] Date: 3/30/09

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Company Overview

WYK Associates, Inc.

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William E. Yoke, Jr., AIA – President
James B. Swiger, AIA – Vice President

Who We Are:

- WYK Associates, Inc. is a six-person architectural and planning firm serving a wide variety of commercial, religious, educational, civic and industrial clientele. Carleton Wood, Jr. was a third generation architect. His grandfather's firm had roots in North Central West Virginia dating back to the early twentieth century. William Yoke, Jr. and Howard Kelley partnered with Mr. Wood in 1974 to form WYK Associates, Inc. Our archives are filled with a century's worth of historic work.
- Mr. William Yoke, president of the firm, assumed that role in 1996 upon Mr. Wood's retirement. Mr. Kelley had previously retired in the early 1990's.
- Mr. James Swiger, joined the firm in 2005 and became a principal and vice president in 2008.

Our Project Philosophy:

- Through collaboration with engineering consultants we address the needs and schedule requirements of each client.
- We provide thorough planning in all areas of each project to fit the individual requirements for a positive impact on both the natural and built environments. Energy conservation and product safety are very important concerns.
- Our client's requirements for quality, service and value are the driving force behind each decision. Open communication and teamwork are our guide words for each project.

Project Management:

- We carefully evaluate the client's program, design concerns, budget, funding sources, and other available data to assure a clear understanding of each project.
- We incorporate input from our client and consultants to establish the budget and schedule. These facets are updated during each stage of project development to insure our client's parameters are met.
- WYK's principals engage and manage the entire project team, from concept through occupancy. WYK Associates, Inc. has an outstanding reputation for providing construction administration services along with maintaining an excellent rapport with contractors.

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Project Team

WV Army National Guard – St. Albans, WV

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Project Team

WV Army National Guard – St. Albans, WV

ARCHITECTURE

WYK Associates, Inc.
205 Washington Avenue
P.O. Box 1484
Clarksburg, WV 26301
(304) 624-6326
(304) 623-9858 fax
bill@wykarchitects.com

CIVIL ENGINEER / LANDSCAPE ARCHITECTURE

GAI Consultants
Charleston Office
500 Summers Street, 3rd Floor
Charleston, WV 25301
(304) 926-8100
(304) 926-8180 fax
j.hemme@gaiconsultants.com

STRUCTURAL ENGINEER

Allegheny Design Services, Inc.
102 Leeway Street
Morgantown, WV 26505
(304) 599-0771
(304) 599-0772 fax
dave@alleghenydesign.com

HVAC / ELECTRICAL / PLUMBING ENGINEER

ZDS Design / Consulting Services
91 Smiley Drive
St. Albans, WV 25177
(304) 755-0075
(304) 755-0076 fax
ZDSDesign@aol.com

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Team Organization Chart

WV Army National Guard – St. Albans, WV

West Virginia Army National Guard

Principal In-Charge
William E. Yoke, Jr., AIA

Architecture

Project Architect
Design / Construction Administration
James B. Swiger, AIA

Construction Documents
Stephen M. Kelley, Associate AIA
William R. Righter

Construction Period Services
Staff as Required

Consultants

Civil Engineer / Landscape Architecture
James Hemme, P.E.
David Gilmore, ASLA
GAI Consultants

Structural Engineer
David R. Simpson, P.E.
Allegheny Design Services

HVAC / Electrical / Plumbing Engineer
Todd A. Zachwieja, P.E.
ZDS Design / Consulting Services

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WYK's Design Approach to Your Project

WV Army National Guard – St. Albans, WV

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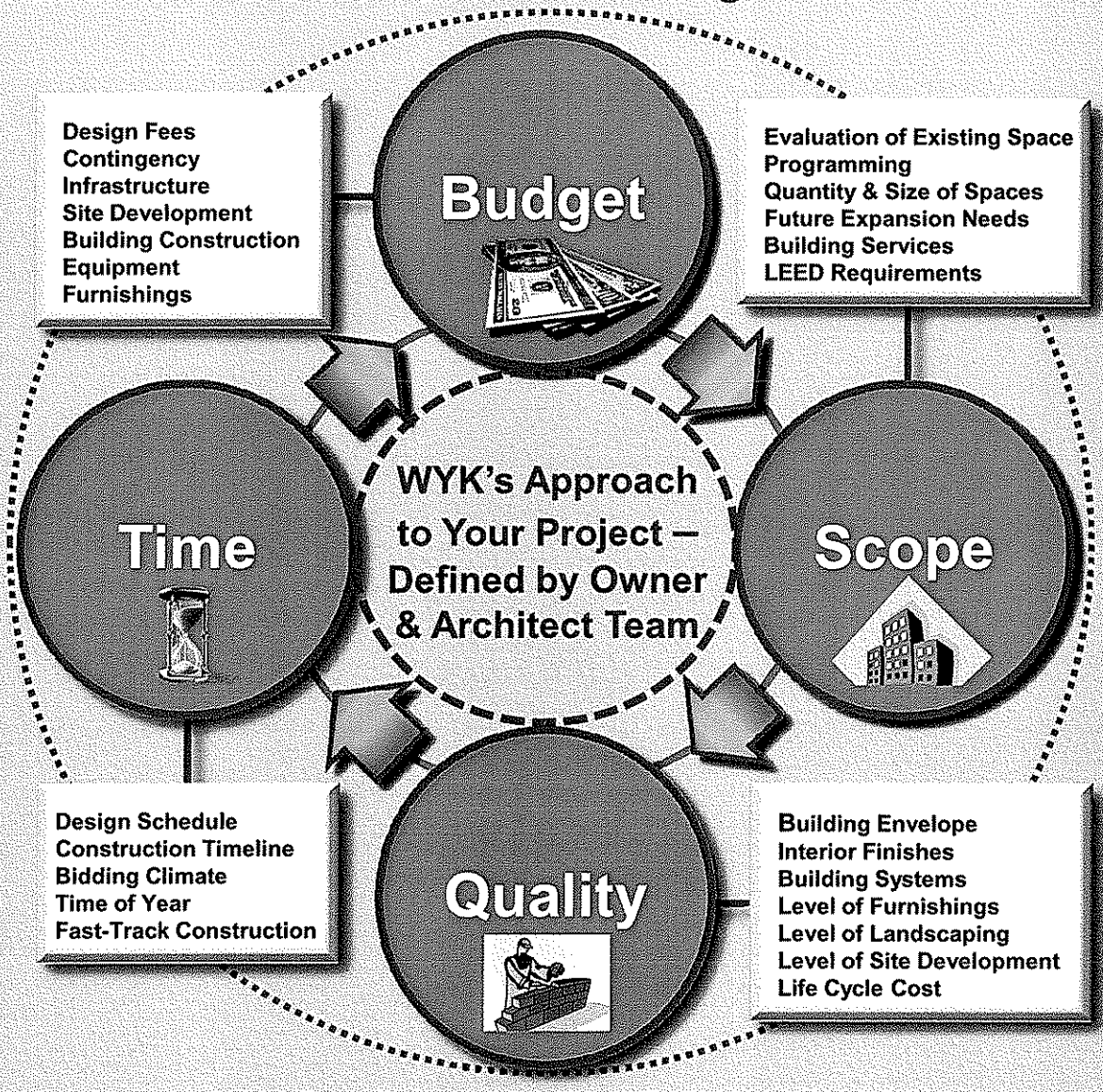
WYK's Approach to Your Project

WV Army National Guard – St. Albans, WV

Architecture is a Balancing Act.....



.....A Change In One Affects the Others

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Projects

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West Virginia Army National Guard
Fixed Wing Training Site

North Central WV Airport, Bridgeport, West Virginia

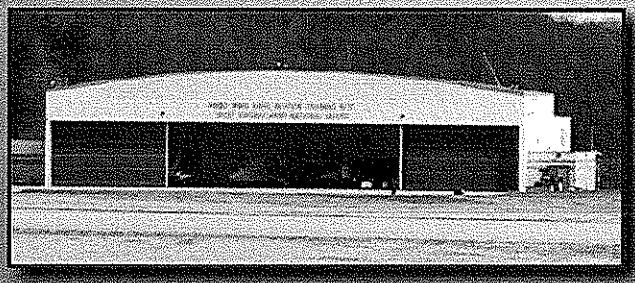
West Virginia National Guard Armory Board

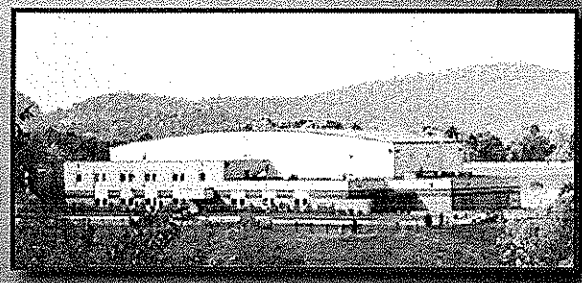
Size: 37,000 S.F.

With Sponsorship from Senator Robert C. Byrd, the West Virginia National Guard established the state of the art personnel training facility totaling $6.4 million in construction costs in 1996. Here students and instructor pilots from the fifty states and Guam train and certify on three different types of transport aircraft.

A wide hangar and an innovative hangar door system allow quick access to any one of five airplanes without disturbing other aircraft. Each aircraft has a dedicated manufacturer's support and maintenance team with their own work space. The two story masonry annex accommodates administration staff, instructor pilots, and instruction/simulator rooms.

The hanger proper is a steel frame structure with a clear span of the entire 210 foot hangar width. A prefinished insulated metal wall system with translucent thermal panels provides glare-free natural light with little or no maintenance. This was a part of the project's energy cost containment plan.





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West Virginia Air Center

North Central WV Airport - Bridgeport, West Virginia

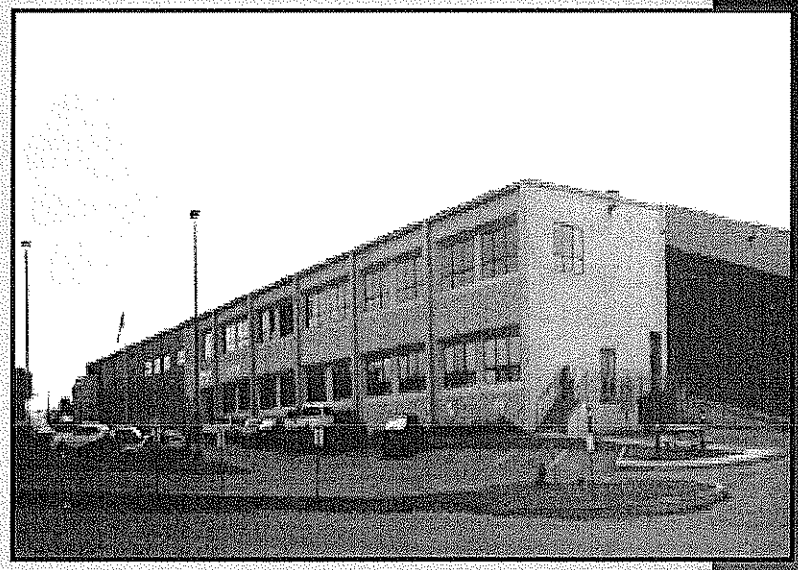
West Virginia Air Center

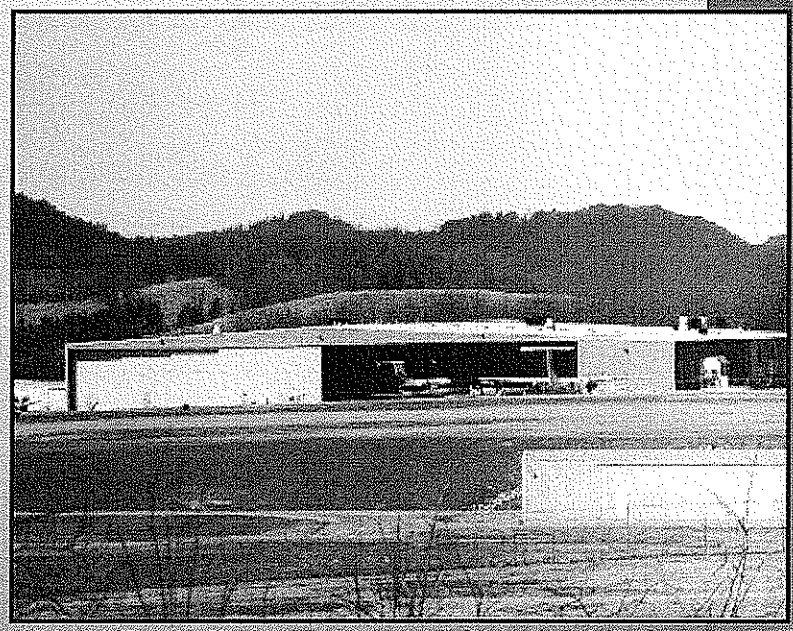
Size: 146,000 S.F.

The building designed for the West Virginia Air Center is now occupied by Bombardier Services America Corp. The facility houses a complete aircraft maintenance facility which services mid-sized airplanes for both private airlines and the military. The building features four large aircraft maintenance bays which can accommodate up to a dozen aircraft for all types of maintenance and retrofit services.

The center has shops to support all phases of aircraft maintenance including interior finishes, composite materials, avionics and electronics and machine tooling. One bay is specifically designed for the removal and application of paint, and the building has state of the art fire protection and hazardous material collection systems. The modern office and support facilities offer unique views of the maintenance bays, and afford all employees an opportunity to observe the extensive and detailed work as the airplanes are torn down and rebuilt.

The project was completed in just over 14 months using a fast track construction management approach. The construction manager, all contractors, the owners representatives and the design team worked very closely to assure that all project milestones were met, and that the facility met all the detailed criteria for certification as an aircraft maintenance facility.





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Broaddus Hospital
Philippi, West Virginia

Broaddus Hospital

Size: 45,000 S.F.

In 1999 this "new" Broaddus Hospital replaced a large outdated 1950's era facility, located on the Alderson-Broaddus College Campus. The facility was relocated to a more accessible and functional site off campus, providing a more visible profile, ample parking and more direct access from highways for emergency services.

The new hospital is a model for rural primary care facilities, providing a multi-function building compliant with current standards and is designed to address the modern needs of the smaller community.

The scale, massing and materials are considerate of the rural setting of the building and they enhance the residential nature of the long term care facility component, where providing familiar imagery is a key conceptual element.

The Services provided include:

Rural Health Clinic

Specialty Clinic

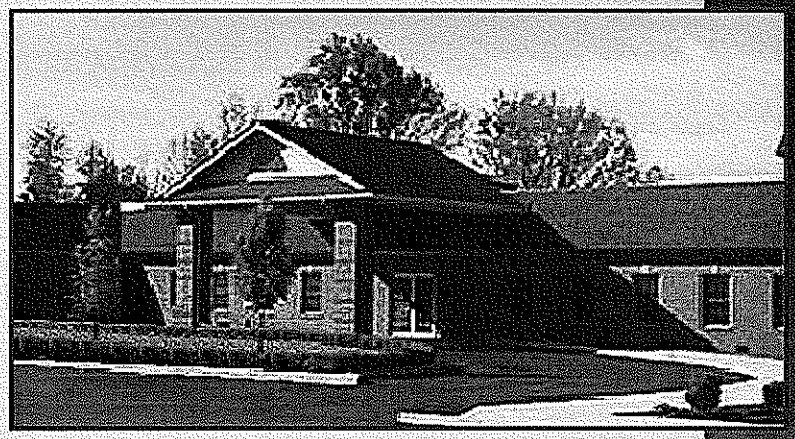
Emergency Room

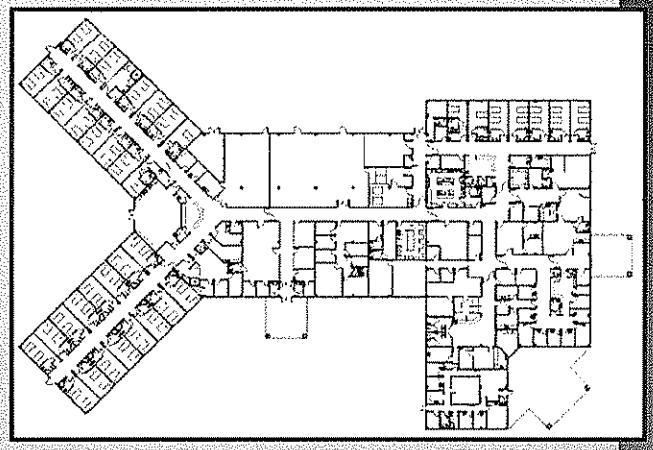
12 Acute Care Beds

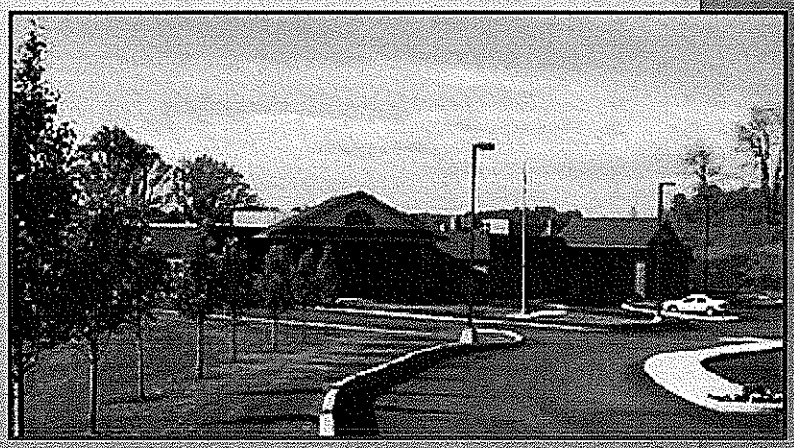
60 Long Term Care Beds

Laboratory

Pharmacy







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Davis Memorial Hospital – Cancer Center

Elkins, West Virginia

Davis Memorial Hospital
Cancer Center

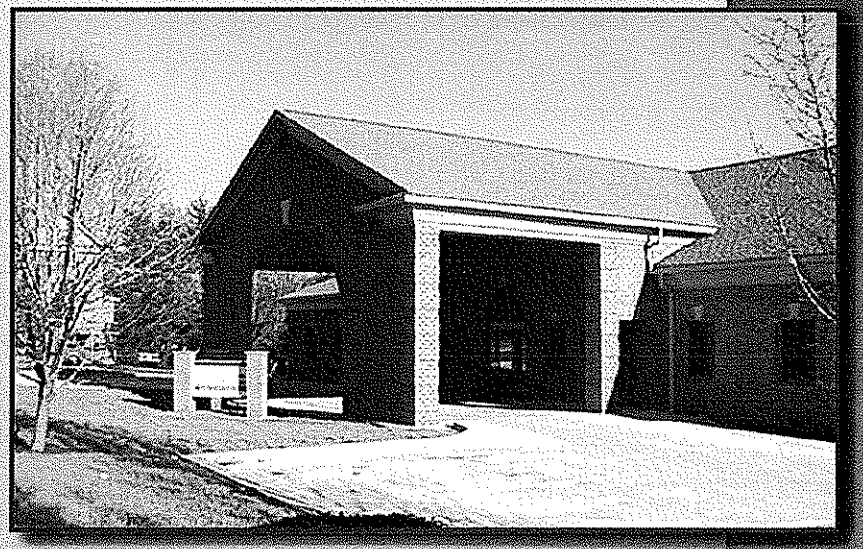
Size: 4,200 S.F.

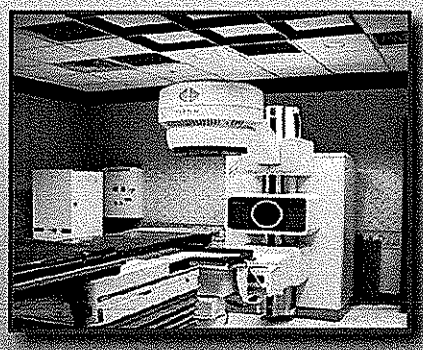
CONSULTANT:
Andrew G. Bukovitz
Radiological Physics Service, Inc.

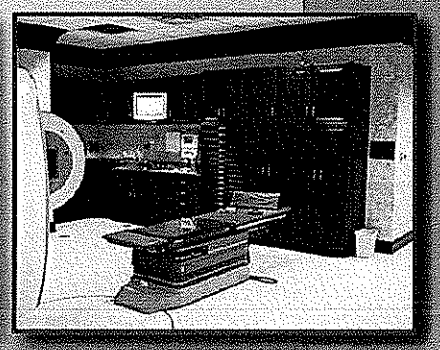
Designed as an integral part of an existing hospital campus, this Cancer Treatment Center uses materials and massing similar to surrounding buildings. Masonry quoins add interest to the building's simple footprint.

The client's goal was to combine nuclear and experimental medicine with an intimate, residential atmosphere to promote maximum healing. Interior finishes and furnishings soften the medical setting.

Access is paramount for both the patient and their caregivers, who await them during treatment. The porte-cochere features a stilted round arch with contrasting keystone, which is repeated in a reduced scale for the entry. The flat arches of the windows also use the contrasting keystone. The buildings' masonry back wall, which is visible from other hospital campus facilities, exhibits the same stilted arch with contrast detail as a detail in the masonry.







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West Union Bank – Newpointe

Clarksburg, West Virginia

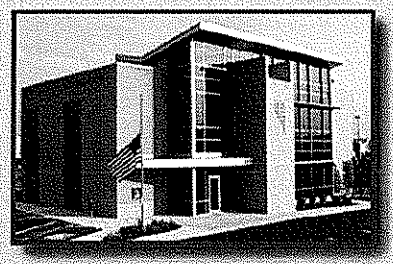
West Union Bank - Newpointe

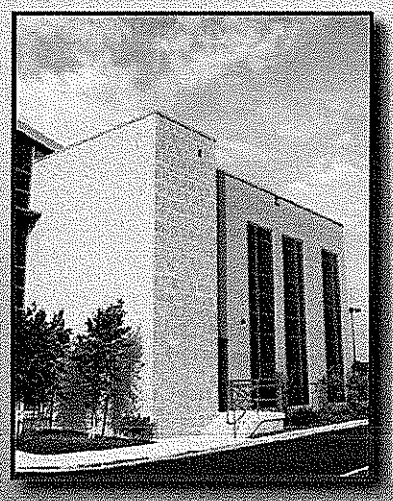
Size: 9,000 S.F.

The West Union Bank entrusted us to design a branch in a new market area. Their location, in the middle of a major commercial development along Interstate I-79, presented several challenges. The client wanted a distinct design that would stand out among its neighbors, who are primarily restaurant & retail businesses. The primary building elevation faces on the main road, while the access point is from a frontage road "behind the building."

The design uses a combination of glass curtain wall with brick and monumental masonry units to present a very contemporary image. The building is sited to separate drive-thru and walk in traffic and create a comfortable, safe traffic pattern. Because of the building orientation, the glass elevations require the use of solar glazing and a brise soliel system to reduce heat gain and glare in the offices.

Construction began in October of 2004 and the Owner took occupancy in August 2005.





2007 AIA West Virginia
Merit Award for Design Excellence

ASSOCIATED ARCHITECTURAL CONSULTANTS

architecture planning historic preservation urban design

West Pike Street Parking Facility

Clarksburg, West Virginia

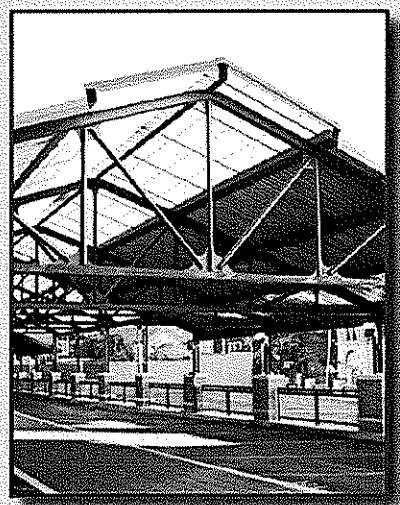
West Pike Street Parking Facility

Size: 57,000 S.F.

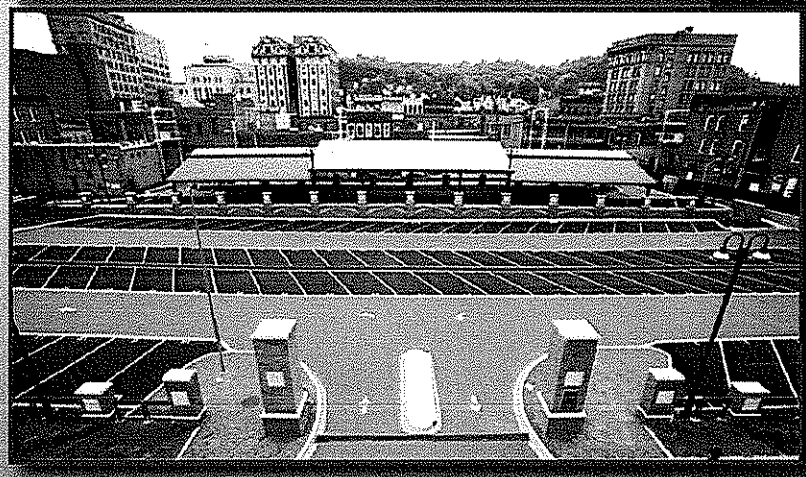
AAC or Associated Architectural Consultants, PLLC is a collaboration of WYK Associates, Inc. and Ralph Pedersen Architect founded in 2004, this partnership combines the unique strengths of two local architectural firms to provide design and planning services for projects in Clarksburg and Harrison County.

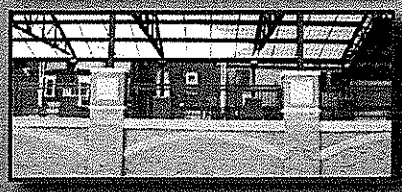
This project consisted of the demolition and abatement of all the long-vacant, dilapidated buildings in the 300 block of West Pike Street, one of Clarksburg's main downtown thoroughfares. An historical study of these buildings was completed and reviewed by the State Historic Preservation Office prior to demolition.

Underground utilities and new storm water management created an unencumbered site for 126 parking places on two levels. The upper level entered from Traders Avenue is covered with translucent panels creating a "band shell." Lower level entry is from Pike Street. Concrete retaining walls, decorated brick pillars, accessible stairways, easy maintenance landscaping, programmable lighting, user friendly electronic parking fee collection, and stamped asphalt paving create accessible parking. The facility's design complements all the adjacent properties, both historic and modern. A variety of outdoor activities are easily held here, enhancing the city's economy and livability.



2008 AIA West Virginia – Merit Award for Design Excellence





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Information Manufacturing Corporation

Cowen, West Virginia

Information Manufacturing Corporation (I.M.C.)

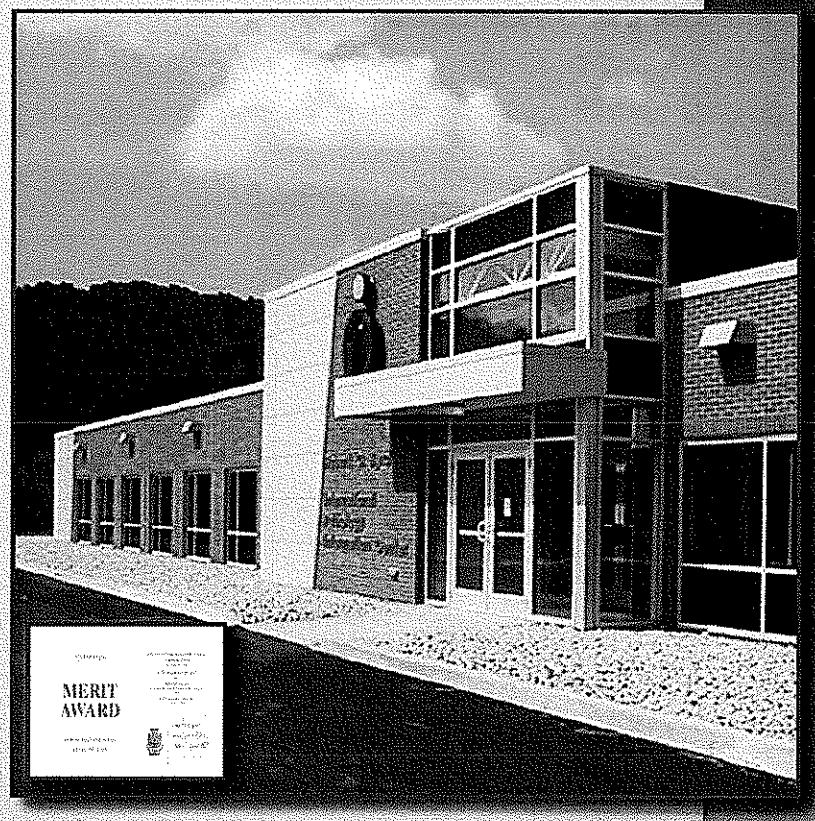
Size: 18,000 S.F.

With Sponsorship from Senator Robert C. Byrd, the Webster County Development Authority commissioned this "state of the art" facility to house Information Manufacturing Corporation's regional operations. This company transforms data into business intelligence and manages electronic data for government agencies.

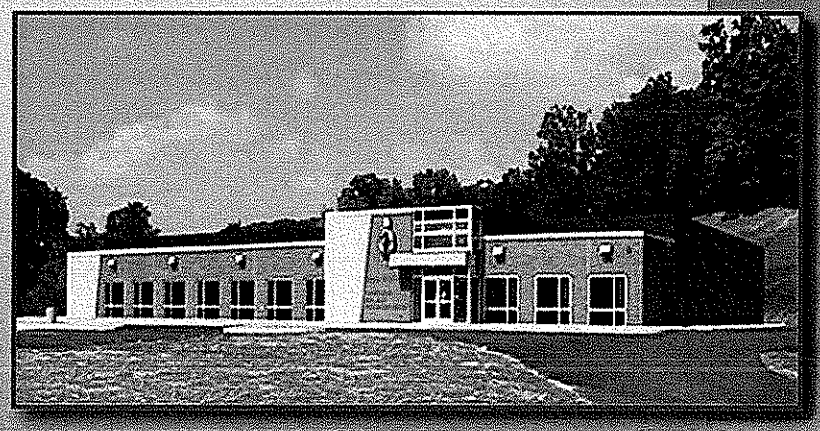
The facility embraces a "hi-tech" image through expressions of form and materials. Extensive use and thoughtful composition of architectural metal panels, large glazed panels, and geometric proportioning of the brick masonry are integral to the building's character. The concept of manufacturing information guided the functional interpretation of the building's interior. Demands of the company's activities dictated large, ultra-flexible spaces defining the majority of the form. The building combines this square footage with smaller spaces for offices, secure storage spaces and conference areas.

Much consideration was given to employing user-friendly materials and creating environments whose focus was on the comfort of the users. Strategies range from indirect lighting in data processing areas, to creating exterior views from virtually every workstation.

The important notion of sustainability is addressed through use of recycled steel, regional materials, and an innovative geothermal heat pump heating and cooling system.



2007 AIA-West Virginia - Merit Award for Design Excellence and Sustainable Design



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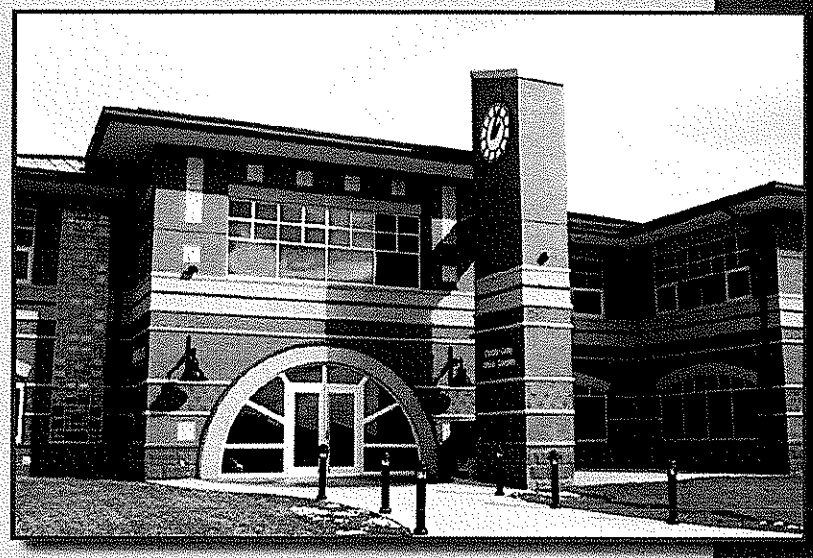
Christie-Cutlip Office Complex
Bridgeport, West Virginia

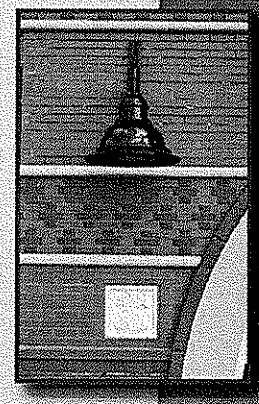
Christie-Cutlip Office Complex

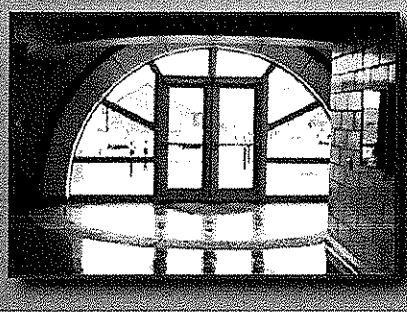
Size: 12,000 S.F.

Jim Christie and David Cutlip entrusted WYK to design a new office building for their business in the new prestigious Charles Pointe Development directly off the I-79 Technology Corridor. Their location is highly visible from the Harrison-Marion Airport and the I-279 connector to the airport. The client wanted a distinguished and comfortable modern design that incorporates historic/traditional architectural features.

The welcoming arched entry of the structure is flanked by a distinguished soaring clock tower to give the building presence within its surroundings. The brick complex is wrapped with intricately detailed ribbon bands that reflect a common building practice of yesteryear. Dark tinted aluminum storefront windows provide views to the majestic surrounding hills and the arriving and departing aircraft. These energy efficient windows provide contrast to the brick textures while reducing heat gain and glare within the offices. The large overhangs provide protection to the façade from the elements as well as reduce direct heat gain in summer months.







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Bank of Gassaway – Flatwoods Branch

Flatwoods, West Virginia

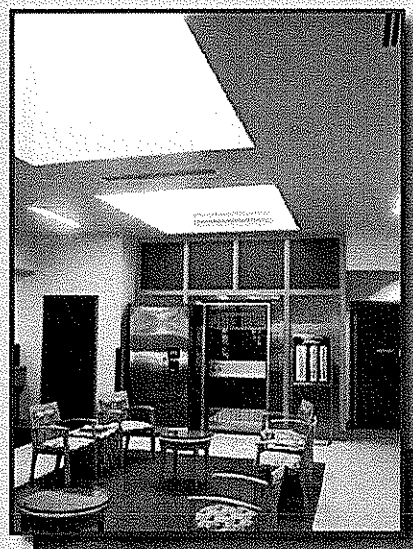
Bank of Gassaway – Flatwoods Branch

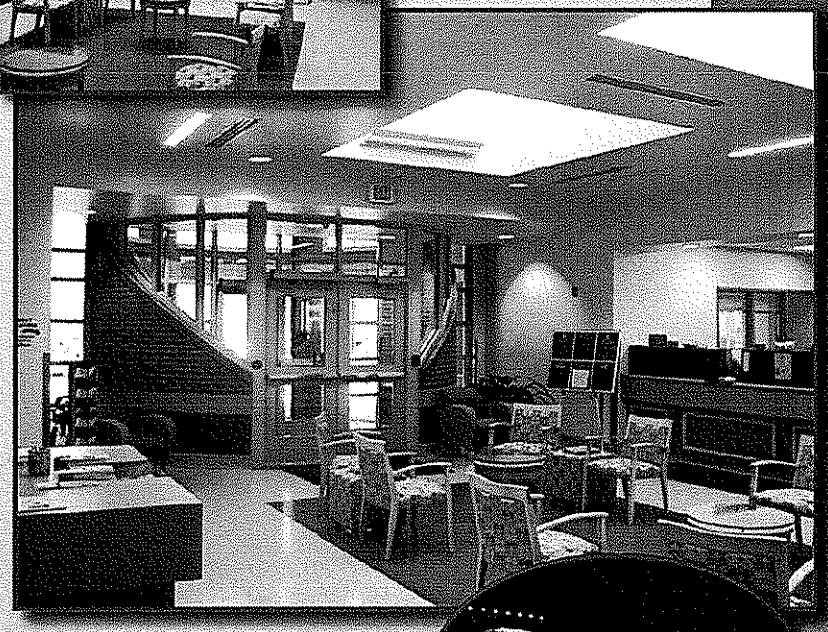
Size: 4,600 S.F.

The Bank of Gassaway hired WYK to design a new branch bank located on a quickly growing commercial strip which is highly visible from Interstate 79. The Owner wanted a very unique building that would be identifiable as a bank within its setting both day and night. Yet they desired to have it stand out among its commercial retail neighbors.

The structure has a very distinctive entry "cylinder" which gives the impression of strength and security from the exterior but as one enters, it quickly tapers away leading the visitor into the spacious day-light flooded lobby centered on axis with the vault.

The building utilizes dark tinted fenestration to increase privacy as well as coupled with the large overhang reduces solar heat gain. The facility was designed with many "green" concepts in mind with natural day-lighting in the lobby, office, meeting spaces and even the drive through canopy. Paperless drywall was used throughout the interior, reducing the risk of mold growth. By the use of environmentally friendly paints, floor coverings, structural components and exterior low maintenance materials does not only make this facility environmentally friendly to its occupants today but for generations to come. Eventually when the building has served its purpose and meets its demise, much of it can be recycled.





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Vienna Public Library Addition

Vienna, West Virginia

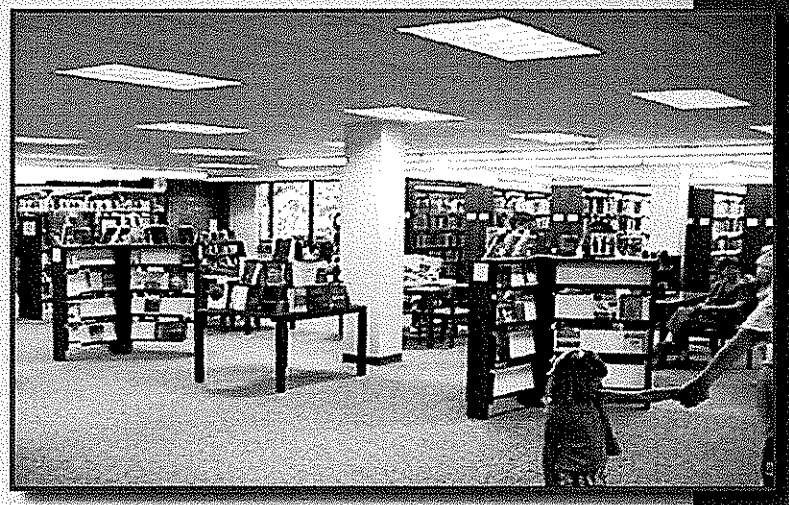
Vienna Public Library Addition

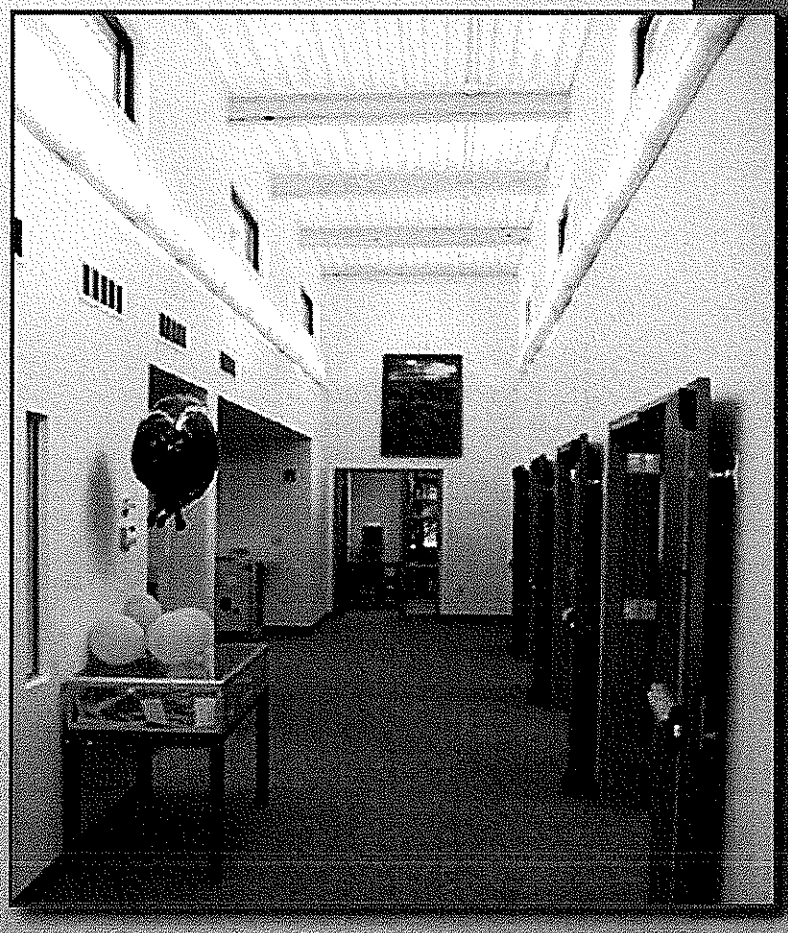
Size: 5,200 S.F.

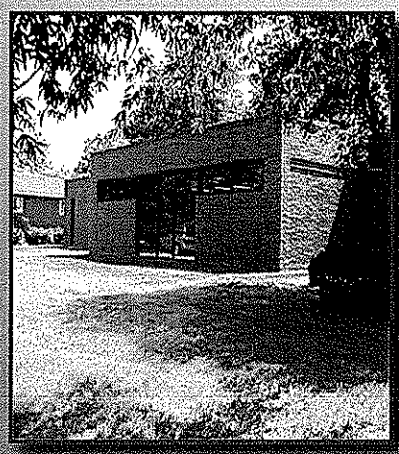
This first construction phase enhances visibility from the main street and orients the entry to the river. Doubled book stack capacity, natural lighting, and an open layout focus on modern library functions. Meeting spaces, now also doubled, and fully accessible restrooms are all zoned to be available for public use during non-library hours. Many civic organizations make use of this added meeting space within their community.

The use of skylights and expansive glass opened up the interior to give an open airy feeling which maximizes the views to exterior and provides maximum flexibility of the space.

A second development phase, when adjacent property is available, will relocate the main entry and double the library's on-site parking .







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Bridgeport Public Library
Bridgeport, West Virginia

Bridgeport Public Library

Size: 1,500 S.F.

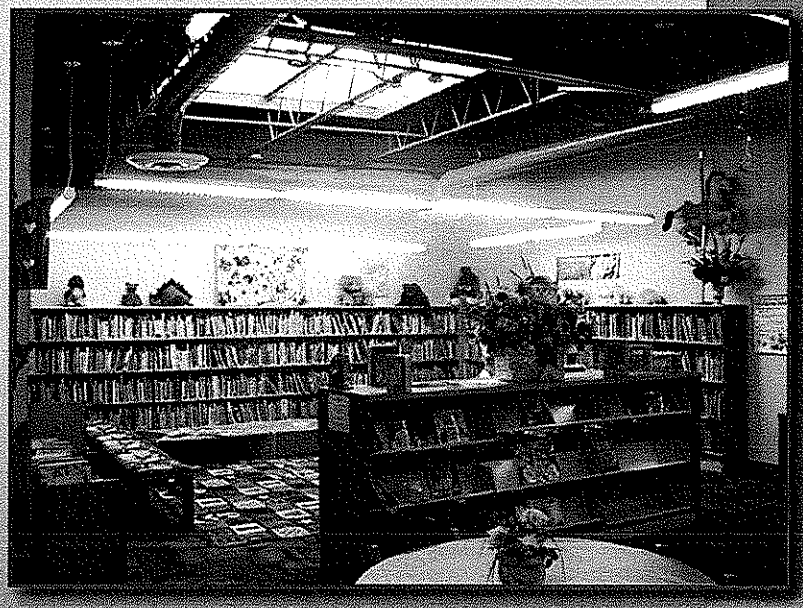
Recognized as one of the busiest per capita in the nation, Bridgeport Public Library is housed in a former insurance company office building.

With this project they renovated an existing storage area to create a new Children's Section and to improve interior traffic patterns. It included some demolition and new partitions; the addition of a pyramid skylight; specialized high efficient lighting; interior finishes; mechanical systems; upgraded wiring for their power and security systems and expanded communications connections.

The use of multiple primary and secondary colors coupled with the use of natural light makes this space inviting for children and their parents alike.

The Library's daily operations and services were maintained throughout the project by carefully coordinating the construction schedule with their patron programs. WYK worked with the Contractor to ensure they coordinated the work schedule with delivery of the library equipment provided by the Owner.

Before



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Bridgeport Public Safety Substation

Bridgeport, West Virginia

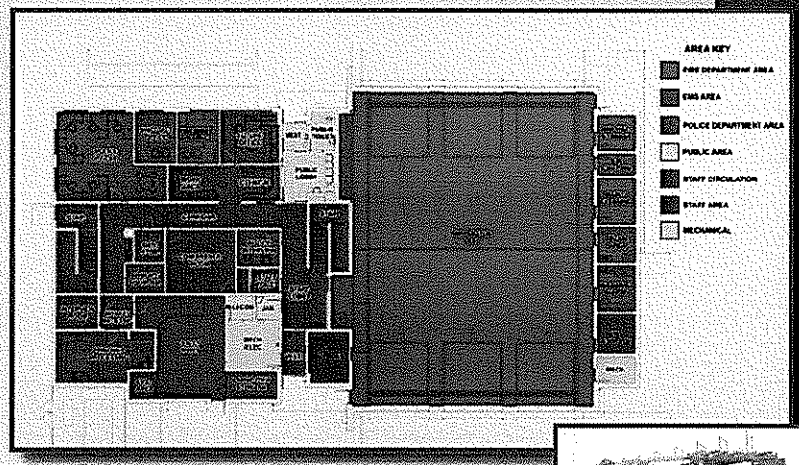
Bridgeport Public Safety Substation

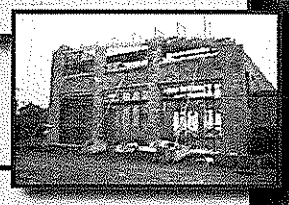
Size: 15,000 S.F.

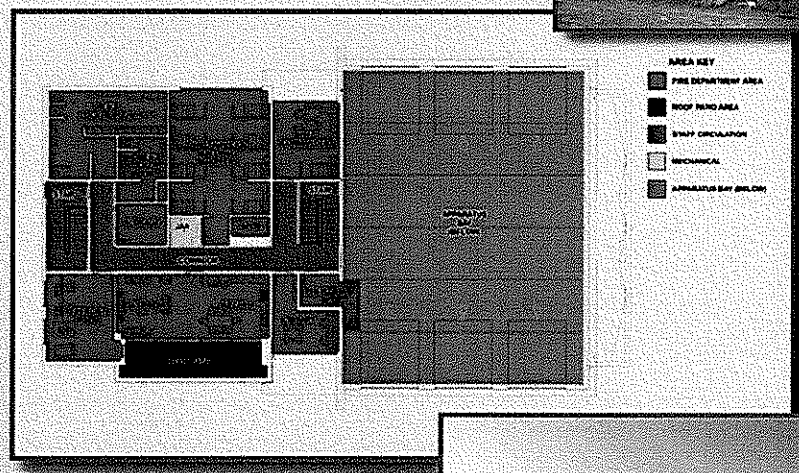
This facility is located directly adjacent to the new United Hospital Center at Jerry Dove Drive and strategically situated within a ½ mile radius of I-79 and the White Oaks and Charles Pointe Developments.

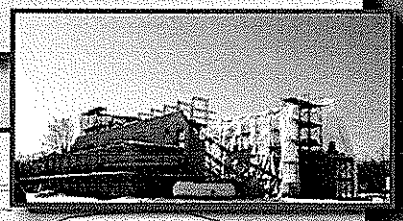
The building is a substation for the Fire and Police Departments of the City of Bridgeport. The structure is a combination of load bearing masonry and structural steel frame with a decorative brick veneer. The Apparatus Bay and supporting facilities are one story, slab-on-grade with an abundance of natural daylight. The administrative offices along with each of the department's support facilities are in a connected, two story steel frame structure.

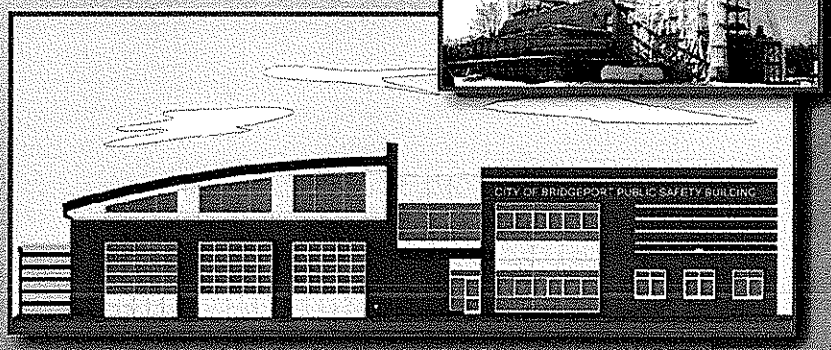
Currently under construction, this facility is planned to open in the Fall of 2009. It will then be ready to serve the citizens and visitors of the City of Bridgeport.











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Salem Elementary School Addition

Salem, West Virginia

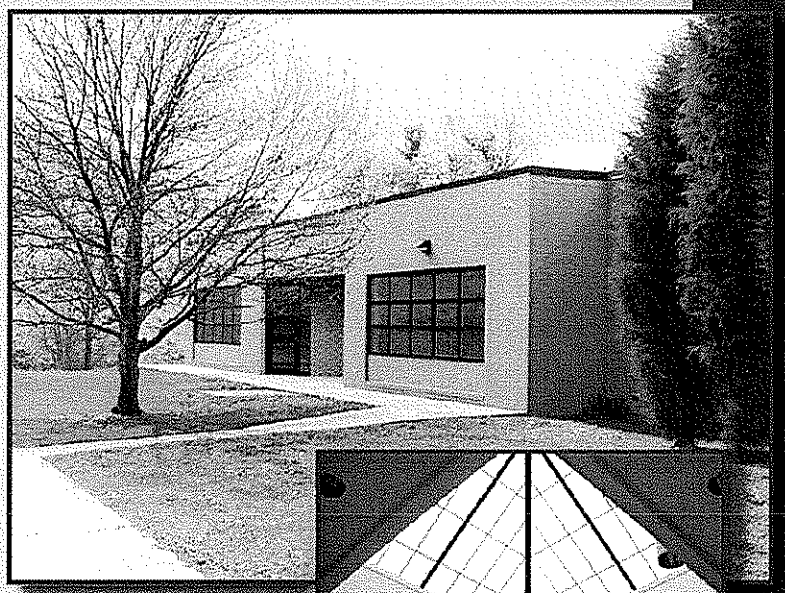
Salem Elementary School Addition

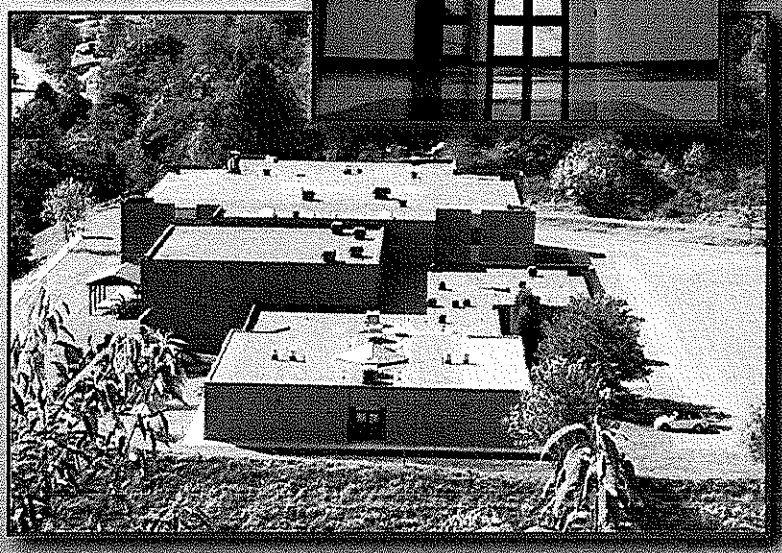
Size: 6,400 S.F.

In preparation for the conversion of Salem Middle School to serve as Salem Elementary School, four early childhood classrooms were added to the existing building. The addition used exterior materials that match and compliment the original building.

The four classrooms are arranged around a translucent pyramid skylight, which serves as a focal point for the Early Childhood Wing. Each classroom is highlighted by primary colors which "spill" into the room from the central space.

The project also included ADA improvements and enclosure of "modified open concept" classrooms in the existing building.





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Bridgeport High School Additions

Bridgeport, West Virginia

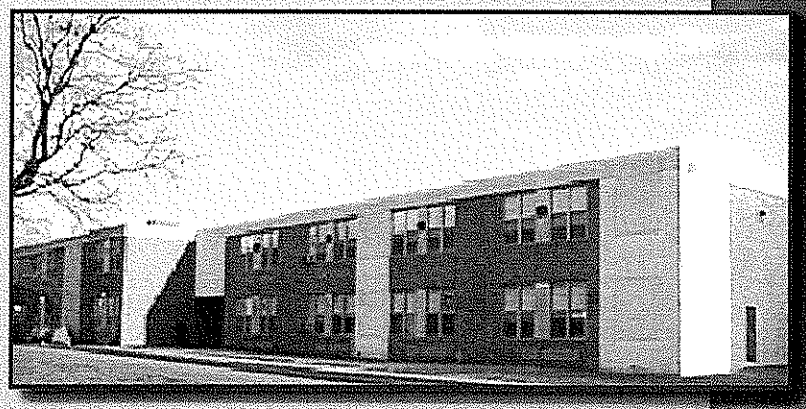
Bridgeport High School Additions & Renovations

Bridgeport High School is home to more than 800 students. The present building opened in 1963, and since that time it has undergone three major renovations by WYK. These include an ADA accessible elevator installation and two classroom additions, in 1992, 1997 and 2001.

WYK has been a part of their frequent remodeling and technological updating. A Theater Storage Addition afford increased theater use by the public.

The façade and window renovations along with HVAC upgrades increased natural daylight and ventilation in the classrooms. It also improved the aesthetics and energy efficiency of the structure. Most importantly, it created a more comfortable learning environment for its occupants.

Classroom Addition A



Classroom Addition B

Facade Renovation

Facade Renovation

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Various School Additions & Renovations

North Central West Virginia

Additions & Renovations

Washington Irving Middle School

Gymnasium/Cafeteria Addition

Interior Elevator Addition

Systems, Finishes, and Fire Code Compliance

Window Replacement

Door & Hardware Upgrades

Classroom Flooring Upgrades

Lumberport Middle School

Addition of Classroom, Band Room, and Kitchen

Interior Elevator Installation

Conceptual Expansion Feasibility Study for Middle School with new Proposed Connecting Elementary School.

South Harrison Middle & High Schools

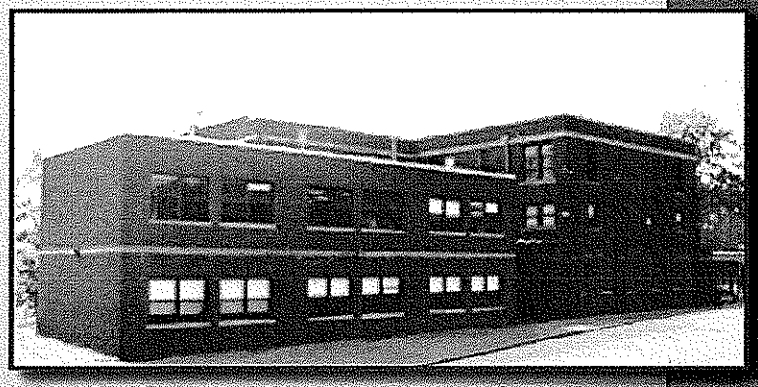
Addition that includes:

Auditorium, Large Cafeteria, Kitchen, Commons, Music Rooms, Art Suites, Classrooms and Media Center

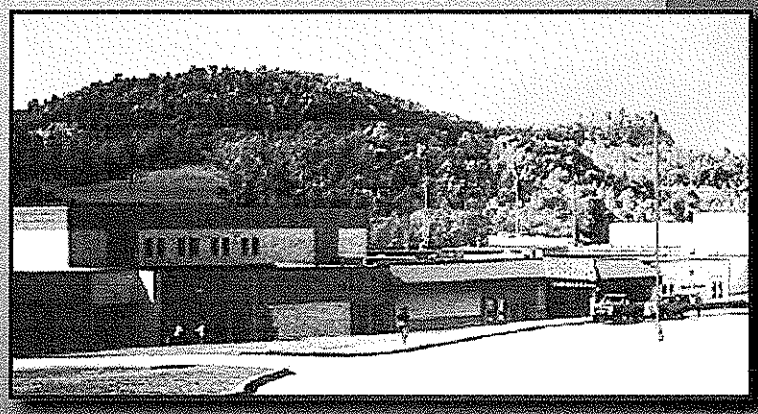
Parking and Bus Circle Upgrades

Window Replacement

Washington Irving Middle School



Lumberport Middle School



South Harrison Middle & High Schools

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Roanoke Elementary School

Roanoke, West Virginia

Roanoke Elementary School

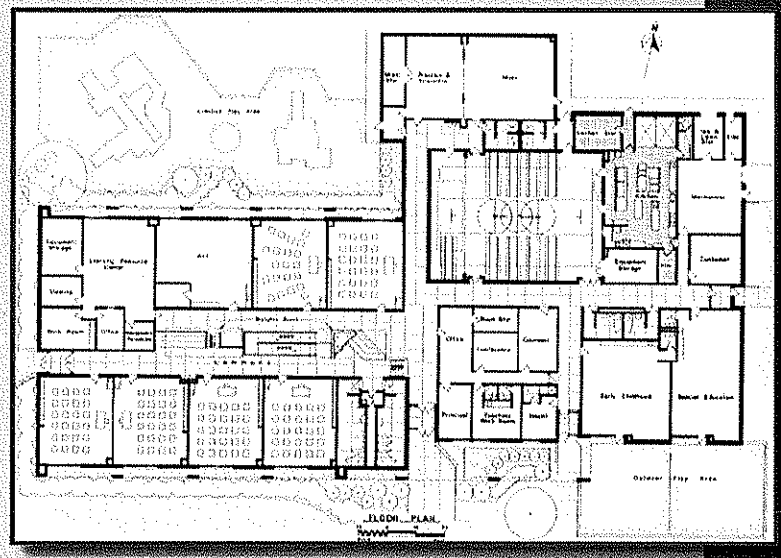
Size: 26,000 S.F.

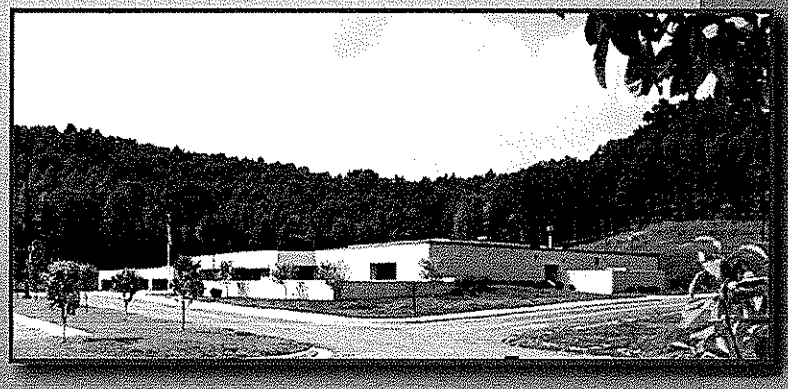
This K-4 school replaced a school taken by the U.S. Army Corp. of Engineers project at Stonewall Jackson Lake and Dam.

The plan is zoned to provide easy circulation while separating "loud" and "quiet" areas, as well as separating students of varying ages and needs.

The primary classrooms surround a multilevel commons area which features bright colors, ample space for student activities and displays and vaulted skylights for optimizing natural daylighting of the space.

The building takes advantage of its scenic rural site by providing excellent playground and outdoor recreational facilities.





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Peterson - Central Elementary School

Weston, West Virginia

Peterson-Central Elementary School

Size: 43,000 S.F.

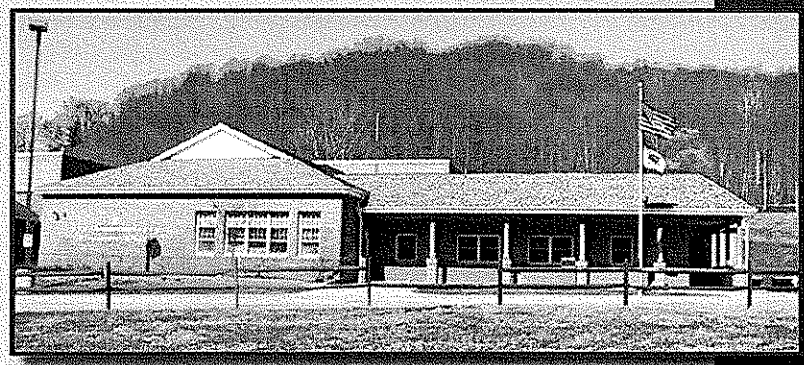
This Elementary School consolidated the greatly over crowded Peterson Elementary and Central Elementary Schools, housing students from Kindergarten through Fourth Grade.

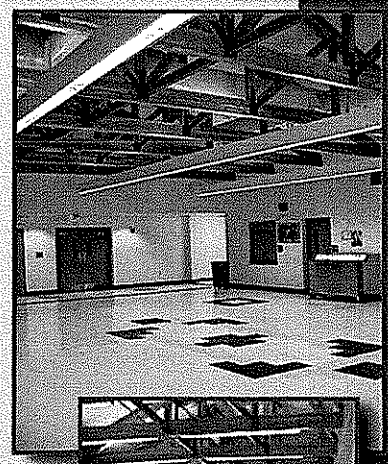
Primary design objectives include:

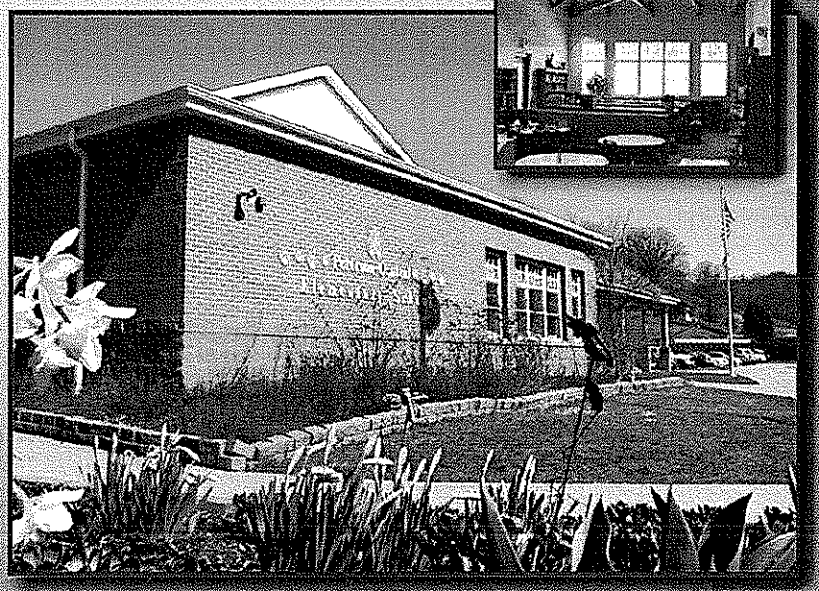
A. Design for Architectural Context regarding the established residential neighborhood.
B. Allow the facility to double as a community center.
C. Provide the capacity for expansion.

These goals are achieved through the implementation of brick masonry, hip roof elements and a scale for the primary facade consistent with the quaint existing neighborhood's contextual fabric. Compartmentalizing the building, allows the community public access to recreational areas as well as the media center, while maintaining security and privacy in the instructional spaces.

The interior environment employs a contemporary application of vibrant colors, exposed structural elements and naturally lighted spaces. The materials and their placement provide for ease of maintenance and can be readily updated as the educational and community needs adapt and expand.







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Circleville School

Pendleton County, West Virginia

Circleville School

Size: 66,000 S.F.

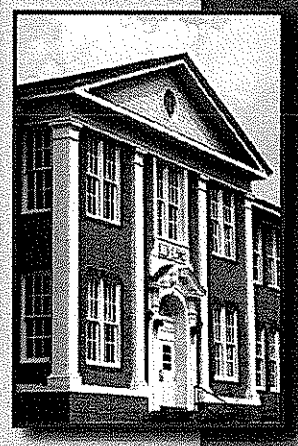
Working with a variety of funding sources, the non-profit CHS Preservation Inc. contacted WYK Associates to help them maintain this landmark in their community as a safe and attractive center for group activities. Within a tightly defined construction schedule, the building's life safety and electrical systems were upgraded to current code requirements. A new banquet kitchen was installed. And the exterior woodwork was repaired and repainted using the guidelines and assistance of the State Historic Preservation Office.

Funded by the Works Progress Administration, this Circleville School was constructed in 1938 to replicate a 1929 Georgian Revival-style building, which had been destroyed by fire. Its classically-derived main façade features four pilasters, a pediment, and a domed cupola. A broken pediment with urn-and-swag motif above a fanlight decorates the main double-door entrance. Enlarged wings and several rear additions expanded the 1938 facility from the 1929 plan. Circleville School was closed in 1998, as the County's schools were consolidated. Yet today Holmboe's building remains a focal point for this Pendleton County community.

Original Architect:

Earnest Christian Schebel Holmboe

National Register of Historic Places: April 4, 2000



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Resumes

WYK Associates, Inc.

WYK associates, inc
architecture
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William E. Yoke, Jr., AIA, NCARB
President & Principal In-Charge

EMPLOYMENT SUMMARY

WYK Associates, Inc.	1978 - Present
WYK Architects	1974 - 1978
Whalen L. King, Architect	1973 - 1974
United States Navy	1969 - 1973
Giese Engineering	1968 - 1969

EDUCATION

Bachelor of Science – Pre-Architecture - 1968
Clemson University
Clemson, South Carolina

ARCHITECTURAL REGISTRATION

West Virginia	(Registration # 1566)
Virginia	(Registration #401-009314)
Maryland	(Registration #10172)
Pennsylvania	(Registration #RA-014502)
National Council of Architects	(Registration #23448)

Selected Projects

West Virginia Army National Guard Fixed Wing Training Center
Bridgeport, WV

West Virginia Air Center
Clarksburg, WV

Stockmeier Urethanes
Clarksburg, WV

Broaddus Hospital
Philippi, WV

Davis Cancer Center
Elkins, WV

Peterson-Central School
Weston, WV

Information Manufacturing Corporation
Cowen, WV

PROFESSIONAL AFFILIATIONS

American Institute of Architects
National Council of Architectural Registration Boards (NCARB)
NCARB – Licensing Examination Committee
AIA-West Virginia – Two Term Past President
Past Chairman of Region II of NCARB
AIA-West Virginia Scholarship Committee
Fairmont State University – Architectural Technology Program – Advisory Committee
West Virginia Board of Architects – Three Term Past President and Current Member

CIVIC AFFILIATIONS

Harrison County Chamber of Commerce – Past Board Member
Long Time Member of the Madrigal Singers of Clarksburg
Vice President of Civil War Roundtable – Local Chapter
Long Time Contributor to the United Way of Harrison County, Inc.

HONORS & AWARDS

2008 Chairman's Award– Harrison County Chamber of Commerce
2008 Merit Award in Architecture from AIA-West Virginia for the West Pike Street Parking Facility in Clarksburg, WV (Co-Design Architect)
2007 Merit Awards in Architecture from AIA-West Virginia for the following:
West Union Bank at Newpointe, Clarksburg, WV
Information Manufacturing Corporation in Cowen, WV

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James B. Swiger, AIA, NCARB

Vice President & Principal

EMPLOYMENT SUMMARY

WYK Associates, Inc.	2005 - Present
Blackwood Associates, Inc.	2000 - 2005
Gegner Architects	1997 - 2000
WYK Associates, Inc.	1996 - 1997

EDUCATION

Bachelor of Architecture -1996
University of Tennessee
Knoxville, Tennessee

ARCHITECTURAL REGISTRATION

West Virginia	(Registration # 3640)
National Council of Architects	(Registration #58982)

PROFESSIONAL AFFILIATIONS

American Institute of Architects
AIA-West Virginia – Director 2010 – Board of Directors
AIA-West Virginia ABC Pilot Program - Charter Member
National Council of Architectural Registration Boards
National Trust for Historic Preservation

CIVIC AFFILIATIONS

United Way of Harrison County, Inc. – Board of Directors
Kiwanis Club of Clarksburg – 2008/2009 President
West Virginia Kiwanis District – District 3 – Lieutenant Governor Elect, 2009/2010
Clarksburg Elks Lodge
Harrison County Chamber of Commerce - Education Committee
Salem Elementary School Nature/Fitness Trail – Project Manager
Salem International University Auxiliary
Salem Area Chamber of Commerce

HONORS & AWARDS

2008 Volunteer of the Year – Harrison County Chamber of Commerce
Selected "Generation Next: 40 Under 40" by the West Virginia State Journal in 2008
2008 Strathmore's Who's Who Worldwide Recipient
2008 Merit Award in Architecture from AIA-West Virginia for the
West Pike Street Parking Facility in Clarksburg, WV (Co-Design Architect)

Selected Projects

Christie-Cutlip Office Complex
Charles Pointe, Bridgeport, WV

West Pike Street Parking Facility
Clarksburg, WV

Bridgeport Public Safety Building
Bridgeport, WV

Philippi Elementary School Addition
Philippi, WV

***City of Ripley Municipal Building**
Ripley, WV

***Stonewall Resort Lodge**
Roanoke, WV

Bank of Gassaway
Flatwoods, WV

* Denotes Prior Experience

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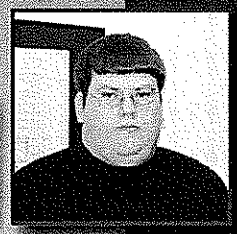
architecture
planning

Stephen M. Kelley, Associate AIA

Project Manager



EMPLOYMENT SUMMARY

WYK Associates, Inc.	2007 - Present
Blackwood Associates, Inc.	2002 - 2007
Kurtz Construction	1999 - 2001
Philadelphia University	1996 - 2000
Athletic Department	
Eagle Lodge	
Golf and Conference Center	1997

EDUCATION

Bachelor of Architecture - 2000
Philadelphia University
Philadelphia, Pennsylvania

PROFESSIONAL AFFILIATIONS

American Institute of Architects
AIA-West Virginia – Associate Member

CIVIC AFFILIATIONS

Salem Area Chamber of Commerce – Board of Directors
Harrison County Development Authority – Board of Directors
Fort New Salem Foundation – Board of Directors
VFW Post 9151- Trustee & Lifetime Member

HONORS & AWARDS

Salem Area Chamber of Commerce 2006 Member of the Year
AIA-West Virginia Student Design Competition 1995 - Second Place
U.S Army Awards:
- Army Achievement Medal
- Reserve Component Achievement Medal
- National Defense Service Medal
- Global War of Terrorism Expeditionary Metal
- Armed Forces Reserve Medal
- Army Service Ribbon
- Reserve Components Overseas Training Ribbon

Selected Projects

Harrison County Schools Entries & Hardware Replacement
Clarksburg, WV

United Hospital Center's CCCC Building Entry Replacement
Clarksburg, WV

Bank of Gassaway
Flatwoods, WV

***Renovation to Johnston School**
Industrial Home of Youth
Salem, WV

Davis Memorial Hospital Addition / Renovation
Elkins, WV

***New Veterans' Nursing Home Facility at Louis A. Johnson Veterans Hospital**
Clarksburg, WV

* Denotes Prior Experience

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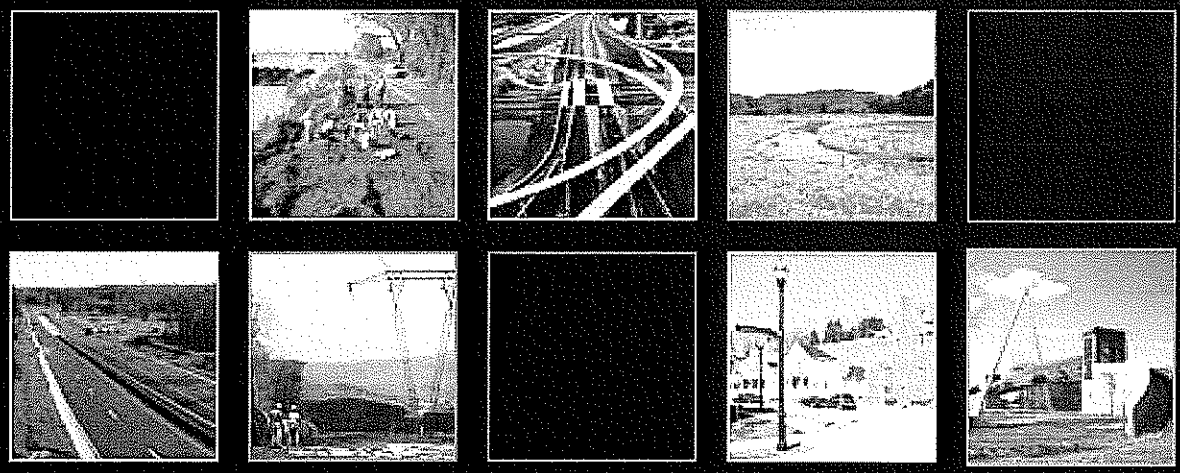
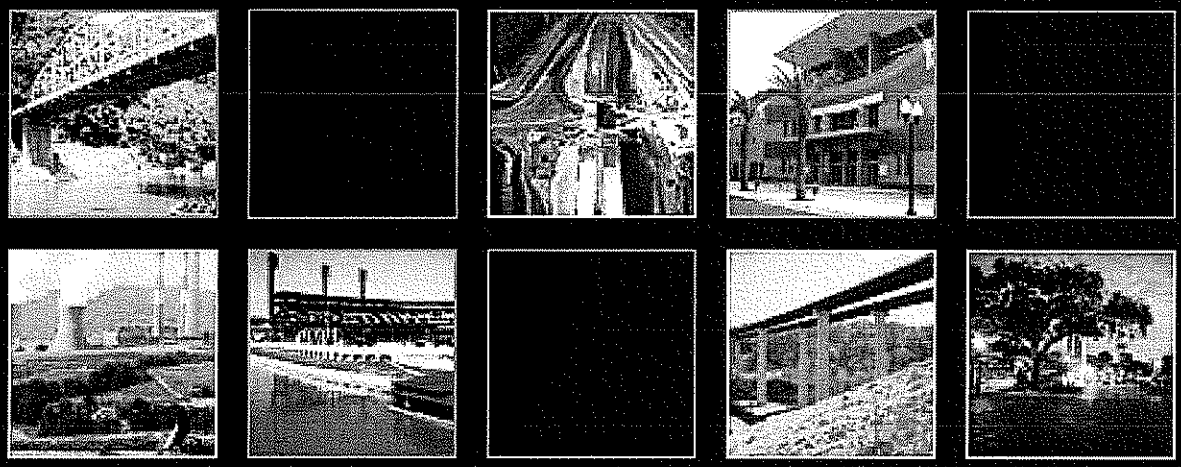
Consultants

WYK Associates, Inc.



How Do You Transform Ideas Into Reality?



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What does this mean to you? It means we become your trusted advisors as we enter your sphere of business and partner with you to tackle your challenges. It means that at GAI, you'll work with a customized team of experts best suited for your needs. Because we are an employee-owned company, we attract the finest professionals, which means you'll deal with the best and they'll give you their all.

With GAI, you'll have access to our full spectrum of engineering and environmental services to expertly handle every aspect of your project from conception to completion. You'll benefit in every way from our higher level of customer service and solid reputation of trusted technical excellence.

Experience the GAI difference. At GAI, transforming your ideas into reality is not only our mission — it's our passion.

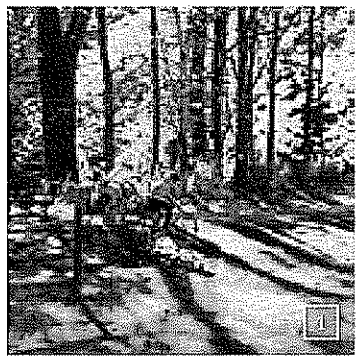
Wind Energy Farm, Southern United States

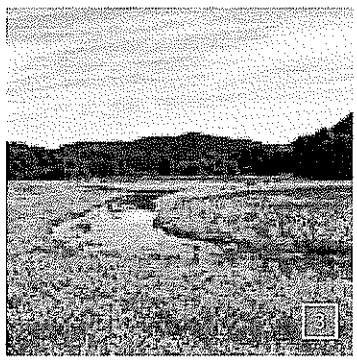
Your Key to Success . . .

Confidence . . . Consistency . . . Compatibility. These timeless qualities underscore the success of each GAI project. We demand more of ourselves as we strive to exceed our clients' expectations.

That includes innovative ways of approaching the environmental remediation, permitting, and preservation processes. Our clients can depend on multidisciplinary technical capabilities and can expect unparalleled project management services from our environmental engineers, biologists, hydrogeologists, and industrial hygienists. And since our projects are challenging and demand our best, they also create exciting professional opportunities for our staff. It's one more reason we attract the cream-of-the-crop professionals. And that benefits our clients as well as the communities they serve.

As trusted advisors to our clients, we actively interact on our clients' behalf with governmental permitting agencies to ensure the permit approval process is always moving forward. This frees our clients to better concentrate on achieving their own critical project milestones. In the process, we provide great satisfaction





across the board for our clients, adding value for their constituents and stakeholders.

Our reputation as a dynamic, value-oriented consulting firm is built on this.

Environmental Services

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+ Environmental Studies, Planning, & Permitting
+ Waste Management
+ Water Resources & Flood Studies
+ Watersheds & Mining
+ Environmental Management & Compliance
+ Environmental Site Assessments
+ Brownfields Site Evaluation & Implementation
+ Environmental Health & Safety
+ Geographic Information Systems
+ Soils Studies
+ Wetlands & Biohabitat Surveys

"Your staff's willingness to do what is necessary, to learn by trying, and to generate good quality work throughout are the keys to this success. You helped us make the filing not only on time, but ahead of the initial schedule. Thank you."

Columbia Gas Transmission

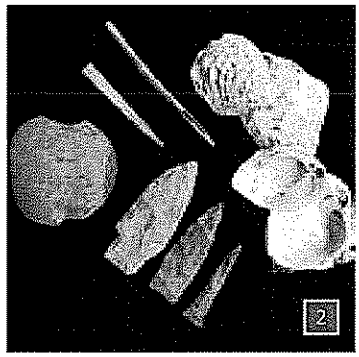
. . . to Streamline Your Project's Life-Cycle.

Efficient . . . Timely . . . Professional . . . Award-winning. **At GAI, we work closely with our clients to take the mystery out of the Cultural Resources process.**

We have a 30-year proven track record for expertly navigating our private and public clients through the NEPA/NHPA (Section 106) process.

The qualifications of our cultural resources professionals exceed federal requirements (36CFR60), and all GAI Project Managers/Principal Investigators are Registered Professional Archaeologists with Master's and Doctorate degrees. Our staff is fully versed in National Park Service standards and protocol. As one of the largest cultural resources firms in the United States, GAI is noted for quickly expanding our staff to handle simultaneous and fast-track projects on a moment's notice and in all weather conditions.

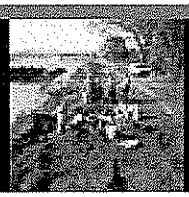
Our clients can expect common sense approaches to their projects, streamlining fieldwork, research, and reporting. Our streamlined Cultural Resource Management techniques are surpassed only by our solid technical reputation, earning the trust of State Historic Preservation Offices across the United States. The results? Faster permit approvals, reduced costs, and your projects moving forward.



Cultural Resources Services

+ Prehistoric, Historic & Urban Archaeology
+ Phase I, II & III Archaeological Investigations
+ Historic Architectural Surveys & Evaluations
+ National Register Nominations
+ Regional Archaeological Syntheses
+ Public Education & Outreach
+ Geoarchaeology, Geomorphology & Pedology
+ GIS predictive modeling

☆ Denotes Award-Winning Project



“I wish to take this opportunity to thank you and your staff for the efficient and effective way in which fieldwork was conducted. In the face of time constraints and logistical complications your staff performed with aplomb.”

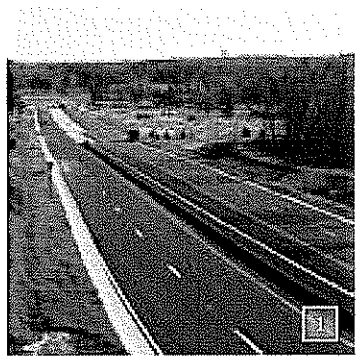
United States Department of the Interior, National Park Service

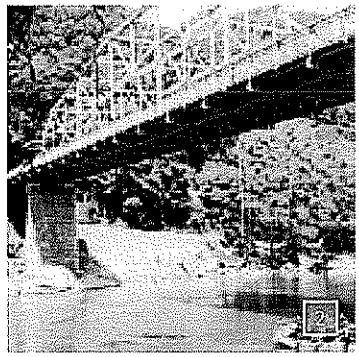
We Work in Partnership with You . . .

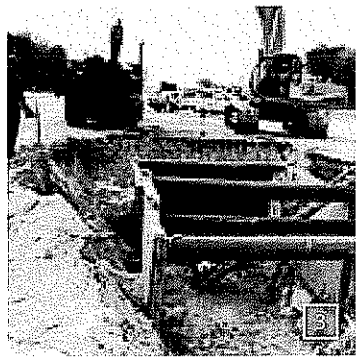
Today, the daunting challenge for transportation agencies is to expand and maintain our nation's infrastructure **while managing traffic congestion, engaging the public, and fostering environmental stewardship.**

For more than 40 years, GAI's transportation engineers and other professionals have provided the leadership and depth of experience essential in conceiving state-of-the-art solutions for our transportation clients. From managing public-private partnerships for expressways and airport expansions, through designing major highways, large-span bridges, and transit projects, to providing innovative traffic and environmental solutions, GAI's experts function as a multidisciplined team, providing efficiency in transportation planning and final design.

Our commitment is to deliver a high-quality project while working in partnership with transportation agencies and their communities. With hundreds of successful transportation projects performed throughout the country, we've created a legacy of award-winning work for our clients earning them solid reputations as top transportation agencies.



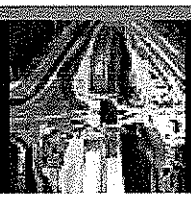




Transportation Services

+ Bridge & Highway Design
+ Bridge Inspection & Rehabilitation Design
+ Transportation Planning & Transit Studies
+ Traffic Engineering & Studies
+ Traffic Calming & Signal Design
+ Context Sensitive Design Solutions
+ Eminent Domain
+ Utility Coordination

★ Denotes Award-Winning Project



"From start to finish, the team dealt with each aspect in a professional and competent manner while keeping the Department's best interest in mind."

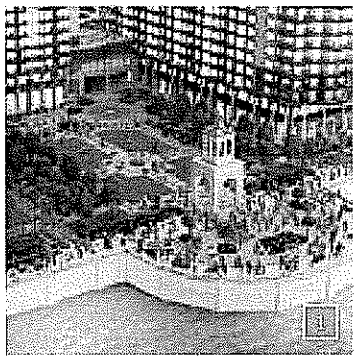
Florida Department of Transportation

. . . is Our Commitment to Your Project.

Successful community growth and development requires passion, commitment, and innovation. **It also depends on securing permits and submitting plans in a timely manner.**

By respecting our clients' time, money, and resources as if they were our own, we increase value in every project we do – from large-scale retail and commercial complexes to residential housing units. Attention to detail distinguishes GAI as a dependable provider of award-winning, land development services.

Whether developing former brownfield sites, urban in-fills, or raw land, our experienced professionals are known for smoothly navigating the compliance process and securing permits quickly. By avoiding costly delays and frustrating glitches, we are better able to assist our clients in the development process and support project buy-in from financial partners, local governments, and involved communities. It's yet another area in which GAI excels.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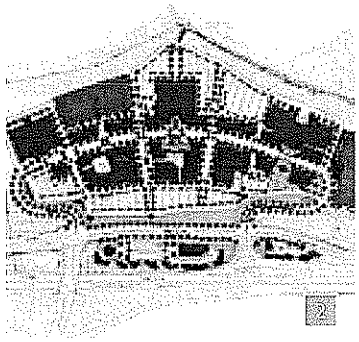
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3

Our Planning, Landscape Architecture, and Survey departments are integral to our Land Development services and provide Master Planning, Streetscape Designs, Landscape Plans and associated Survey services. From site assessments to transportation engineering, waterline and lighting design, GAI delivers award-winning seamless services for you.

Land Development Services

+ Planning
+ Survey
+ Landscape Architecture
+ Civil Engineering
+ Infrastructure

☆ Denotes Award-Winning Project

“GAI has consistently shown themselves to be highly reliable, able to address sophisticated issues in a timely manner and able to consistently achieve superior results.”

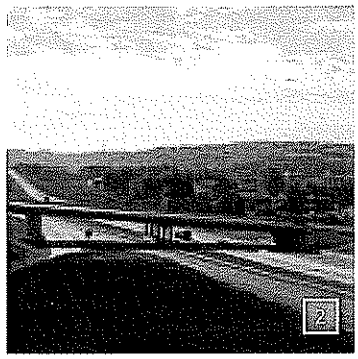
Orange County Public Schools, Orlando, Florida

We are Driven by Challenging Issues . . .

What does it take to achieve success in the Construction Engineering, Management, and Inspection industry? At GAI, the answer is integrity, unparalleled service and timely project completion.

These principles have formed the foundation of our reputation in the Construction Services Industry for more than 35 years. Our certified construction engineers, administrators, and inspectors pride themselves on completing projects on time and on budget. Their wealth of knowledge and diverse experience translates into diligent oversight, accurate documentation, and dedicated problem-solving throughout the construction process.

Our multi-phased construction projects include every aspect of the built environment. GAI's Construction Services support several industry sectors including major public clients and numerous private partners.



Looking toward the future of Construction Management, GAI's Construction Services Group is positioned to deliver several Design/Build transportation projects, by assisting the owner in the Quality Assurance and the general contractors in Quality Control, documentation, scheduling, and payment of the work. With GAI on board, our clients gain the confidence to tackle even the most challenging issues of complex construction projects.

Construction Services

+ Construction Inspection
+ Construction Management
+ Constructability Reviews
+ Construction Scheduling
+ Construction Claims Analysis

★ Denotes Award-Winning Project

"Their ability to provide responsive and efficient engineering services has resulted in a timely and cost effective completion of projects."

City of Fort Wayne, Indiana

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Site Development
Service Brief

Overview

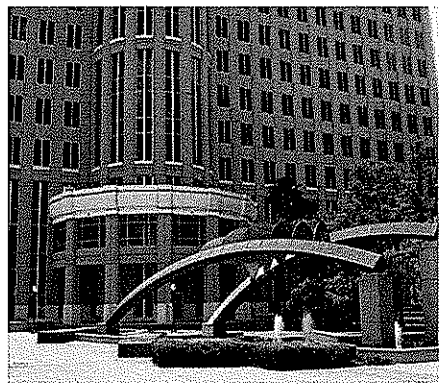
Critical to a project's viability, public resistence, environmental issues, local zoning issues, site topography and regulatory hurdles cause Land Development to be a challenging industry. From environmental impacts and public review to a variety of technical constraints, permitting and plan approval can hinge on any number of preliminary planning and design considerations. Furthermore, failure to anticipate problems can result in substantial and even insurmountable delays in a project's timetable and its economic viability.

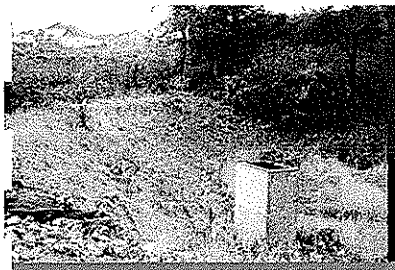
GAI Consultants, Inc. (GAI)'s primary focus is producing superior projects on time and on budget. Our experience includes dozens of land development and redevelopment projects on residential, commercial, industrial and mixed-use properties. From conceptual site design through final construction, we not only know the process, we possess the needed experience to help you succeed. Through the interaction of our various engineering disciplines, we are able to provide comprehensive services for every phase of each project. These include:

- Land surveying
- Feasibility studies
- Facilities planning and design
- Land use studies
- Master planning
- Landscape architecture
- Permit acquisition
- Impact fee studies
- Traffic impact assessments
- Site design
- Stormwater management systems
- Streetscape design
- Subdivision design
- Roadway and infrastructure design
- Construction layout surveying
- Utilities assessments, rehabilitation and design
- Water and sewer design
- Construction documentation and monitoring

We base our understanding and appreciation of land development potential on the knowledge of the local development climate and work experience in the area.

To help you achieve your goals, GAI employs professional engineers, environmental scientists, planners, registered land surveyors and field technicians who are all supported by expert technicians and state-of-the-art CADD systems. GAI makes meeting your needs our top priority.





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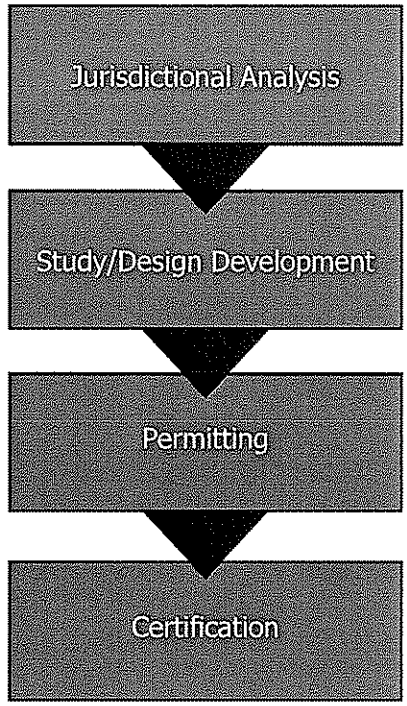
Stormwater Management/Drainage Engineering

Service Brief

Overview

GAI Consultants (GAI) understands that land development and highway construction must meet the new and changing Phase II stormwater management criteria for construction and post construction activities.

Our team of experienced stormwater management professionals have established a four-step process that will expedite the permitting process and identify the most cost-effective, post-construction stormwater pollution prevention technology.



Four Steps to Effective Stormwater/Drainage Management

Jurisdiction Analysis. Our team researches and identifies applicable codes, regulations, and requirements associated with the jurisdictional agencies.

Study/Design Development. Our experience includes engineering design of:

- Retention and detention systems
- Collection systems, including curb and gutter, sewer inlets, piping systems and roadway ditches
- Bridge hydraulic design
- Floodway studies including floodplain compensation or no-rise certification
- Cross drain design
- Wetland mitigation
- Best Management Proactices (BMP) treatment systems including ponds, wetlands, filtration, and open channels.

Permitting. GAI uses proven, standardized application procedures and formats that prevent deficiencies and facilitate quick permit approvals. Our team works with the authorities throughout the process to prevent any permitting delays.

Certification. Upon a successful permitting process and construction, GAI thoroughly reviews the project to assure all design elements are completed properly and that the project is officially certified by the appropriate compliance jurisdictions.

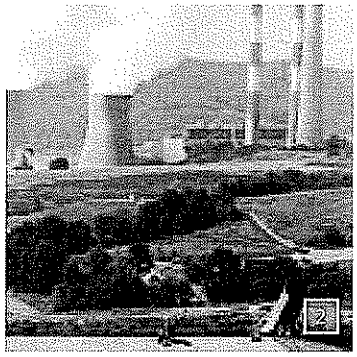
. . . with Fresh Ideas, Quality Designs, and Proven Solutions.

Our geotechnical and structural engineers have been providing exceptional service in the areas of engineering geology and geotechnical engineering for large transportation, industrial, and energy utilities since 1958.

With every opportunity, our proficiency, passion, and proven geotechnical and structural design solutions instill our clients with the confidence to move their projects forward. Because venturing into uncharted territory requires prudent risk-taking, our experienced engineers have the know-how and ingenuity to formulate smart ideas to support our clients every step of the way. GAI has specialized expertise in constructing facilities where difficult ground conditions exist. These can be undermined sites, areas composed of expansive materials or "soft ground," unstable slopes, seismic areas, or karst areas which have sinkhole-prone features. Our on-staff geologists are experts in mine fire exploration and abatement.

From foundations to retaining walls, from dams to transmission towers, our geotechnical/structural engineers are widely published and recognized industry leaders.

We differentiate our consulting services by embedding ourselves into our clients' organizations,

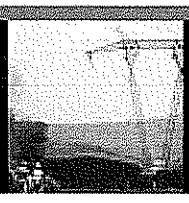


and cross-training with our client's staff. Together, we produce inspired and efficient solutions each and every time.

Confidence, trust, and ethical values: these are the foundations for excellence at GAI.

Geotechnical/ Structural Services

+ Dam Rehabilitation & Design
+ Electrical Transmission & Distribution Line Design
+ Geologic Studies & Subsurface Explorations
+ Subsidence Studies & Remediation
+ Vibration, Seismic, & Structural Reliability Studies
+ Slope Stabilization Analysis & Design
+ Foundation Research & Design
+ Design for Expansive Soil, Rock, & Aggregate
+ Earth & Rock Retaining Structure Design
+ Structural Design
+ Structural Inspection & Rehabilitation Design



"With the help of your people, we have accomplished many goals that most people in the industry would not have thought possible."

Mettiki Coal Corporation

Land Development
Riverfront Park & Streetscape Design

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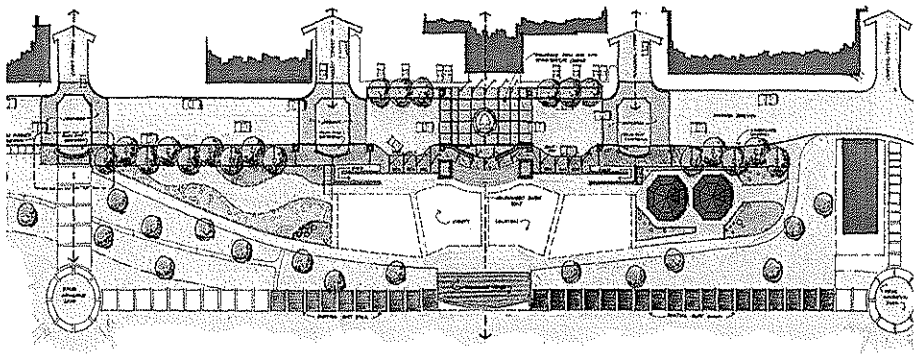
Haddad Riverfront Park
Kanawha County, West Virginia



Charleston Riverfront Park: Preliminary Master Plan

GAI Project Manager:
David Gilmore, RLA, CLARB

Project Team:
GAI Consultants, Inc. (Prime)
Fabritech (Subconsultant)

Client:
The City of Charleston

Client Contact:
David Molgaard, City Manager
304.348.8014

Construction Cost:
$3,000,000

Completion Date:
Ongiong

#E080952

Brief Project Description

GAI Consultants, Inc. (GAI) was selected to provide design, construction and engineering solutions for the renovation of the Haddad Riverfront Park, which is a popular concert, festival and leisure site in downtown Charleston, West Virginia.

Among the City of Charleston's project requirements were a retractable canopy to provide protection and visual interest, an overlook plaza and pavillion that extends Court Street to the Kanawha River, an extension of the lower wharf area, a new streetscape design along Kanawha Boulevard and an event stage for concerts. Each requirement composes one stage of the overall project, with Phase I currently underway.

Work Tasks/Services

- Conceptual design and master plans
- Landscape architecture
- Geotechnical engineering
- Structural engineering
- Construction administration

Value Added Innovations

Taking a different approach, GAI presented an initial design encompassing all four parts of the entire project. The design was highlighted by a grand staircase leading to the proposed amphitheater, which acts to open the park to Kanawha Boulevard, making it an integrated part of downtown Charleston.

For more information on GAI Consultants, Inc., please visit www.gaiconsultants.com.

Land Development
Landscape Architecture and Engineering

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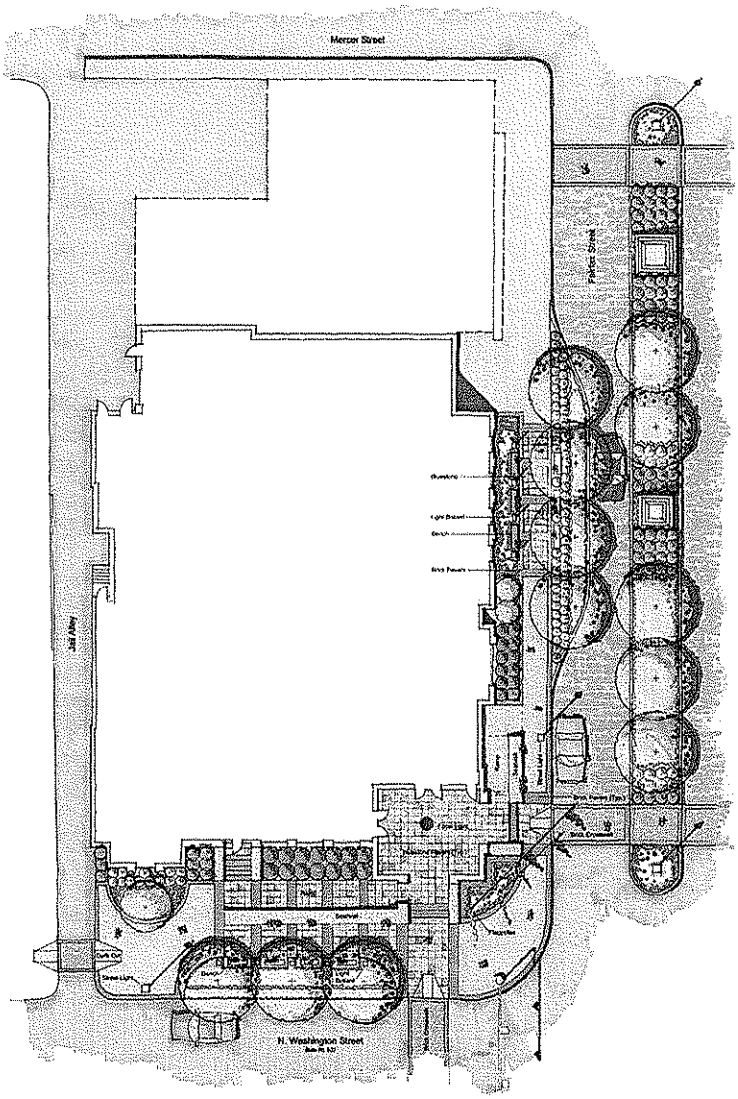
Morgan County Courthouse
Morgan County, West Virginia



GAI Project Manager:
David Gilmore, ASLA, CLARB

Project Team:
Silling Associates Architects (Prime)
GAI Consultants, Inc. (Subconsultant)

Client:
Morgan County

Client Contact:
Tom Potts, AIA
304.346.0565

Project Cost:
$12 Million

Completion Date:
2009

#E080211

Brief Project Description

GAI Consultants, Inc. (GAI) was contracted by Silling Associates Architects to provide site design services for the new Morgan County Courthouse located in historic Berkeley Springs, West Virginia. The project included preliminary site master planning, utility design, grading, and site drainage. Also, included in the tasks was coordination of site design with a streetscape plan that had been initiated prior to the start of GAI's site design. The site supports a three story, 13,415-square-foot courthouse building that will support many of Morgan County's judicial offices including Magistrate Court, Family Law Court, and Circuit Court.

Work Tasks/Services

- Preliminary master planning and design
- Coordination of utilities
- Utility design
- Grading
- Site drainage
- Landscaping/site amenities
- Coordination of design with local streetscape committee

For more information on GAI Consultants, Inc., please visit www.gaiconsultants.com.

Land Development
Landscape Architecture and Engineering

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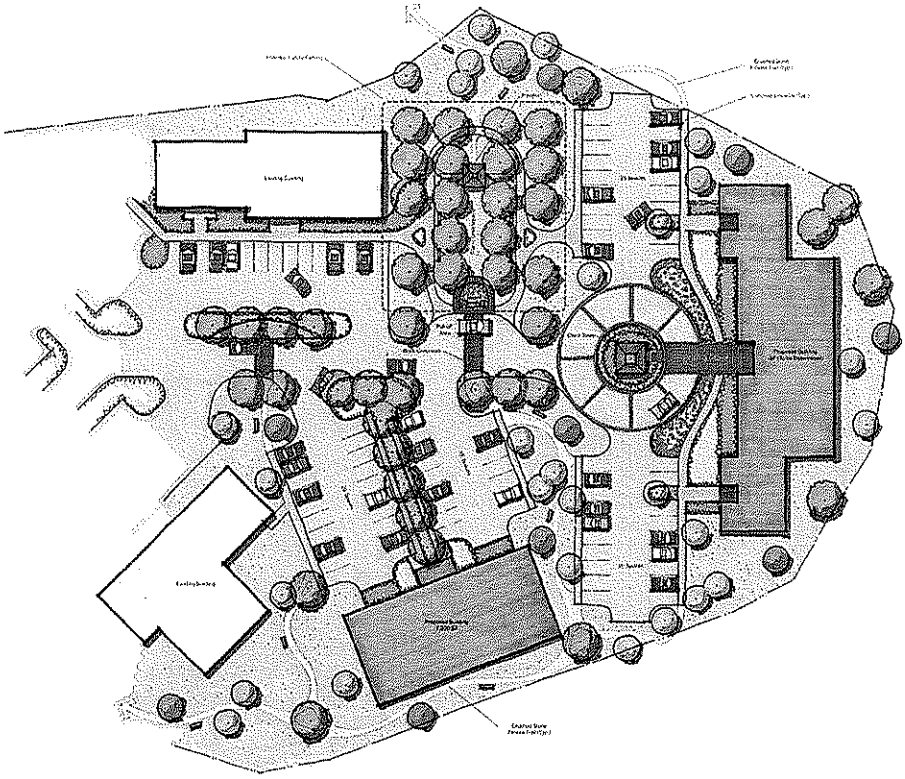
Cambridge Place Office Park Study
Bridgeport, West Virginia



GAI Project Manager:
David Gilmore, ASLA, CLARB

Project Team:
GAI Consultants, Inc. (Prime)

Client:
Mason Dixon Energy, Inc.

Client Contact:
Gregory Zerkel
304.842.9550

Completion Date:
2010

#E060683

Brief Project Description

GAI Consultants, Inc. (GAI) was contracted for landscape architecture and site planning services by Mason Dixon Energy for the Phase II of it's Cambridge Place Office Park in Bridgeport, West Virginia. The project scope included wayfinding and landscape improvements for the entire office park, future building, vehicular and pedestrian circulation and parking layout scenarios for Phase II and a fitness trail around the perimeter of the park.

Work Tasks/Services

- Program development
- Site analysis
- Conceptual planning
- Final master plan

For more information on GAI Consultants, Inc., please visit www.gaiconsultants.com.

Land Development
Site Development Services

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PNC Park Baseball Stadium
Pittsburgh, Pennsylvania

GAI Project Manager:
Anthony F. Morrocco, P.E.

Project Team:
GAI Consultants, Inc. (Prime)
L.D. Astorino & Associates, Ltd. (Subconsultant)

Client:
Hellmuth, Obata & Kassabaum, Inc. (Site Planning)
L. D. Astorino & Associates, Ltd. (Final Design)
Pittsburgh Pirates (Bulkhead Wall)

Client Contact:
Robert L. Watson (HOK)
816.221.1576
Dennis Astorino (LDA)
816.221.1576

Completion Date:
2001

#C980426 (HOK) #C980491 (LDA)
#C990244 (Pittsburgh Pirates)

Brief Project Description

Involvement in the 39,000-seat PNC Park project by GAI Consultants, Inc. (GAI) began with the demolition of the old North Side neighborhood, required to make way for the project, and continued throughout construction. GAI determined detour routes, relocated public utilities, and obtained all necessary permits, including the NPDES Permit for industrial discharge and Joint 105/404 Permit for construction.

During the design development phase, GAI provided site and utilities engineering design of the River Bulkhead Wall, the Sewage Facilities Planning Module, conducted a flood risk assessment including hydrological and hydrogeological studies, coordinated all field surveying activities with the project surveyor, and designed a reliable and cost-effective 1,110-foot-long anchored sheet pile wall to support an attractive riverwalk area between the baseball park and the Allegheny River. The curved alignment of the wall increased design and construction complexity. The tieback system consisted of 142 inclined soil anchors at 8-foot intervals, each with a 42-ton capacity and embedded 51 feet into the soil.

Similar services were provided by GAI during the final design phase, including design modifications to two existing ALCOSAN diversion chambers to accommodate the construction of the new ballpark, and design of the underdrain system and flood control vault.

GAI monitored construction of the Allegheny River bulkhead wall and the abandonment of the existing 120-inch diameter canal sewer through the site.

Work Tasks/Services

- Civil site layout
- Flood risk assessment
- Hydrologic and hydraulic studies
- Utility design
- Site design and grading
- Permitting
- Hydrogeologic investigations
- Flood control system
- Coordination with regulatory agencies
- NPDES Permit for industrial discharge
- Complex wall and tieback system design and construction
- Anchor load test monitoring
- Sheet pile wall and anchor construction monitoring

For more information on GAI Consultants, Inc., please visit www.gaiconsultants.com.

Land Development
Landscape Architecture and Engineering

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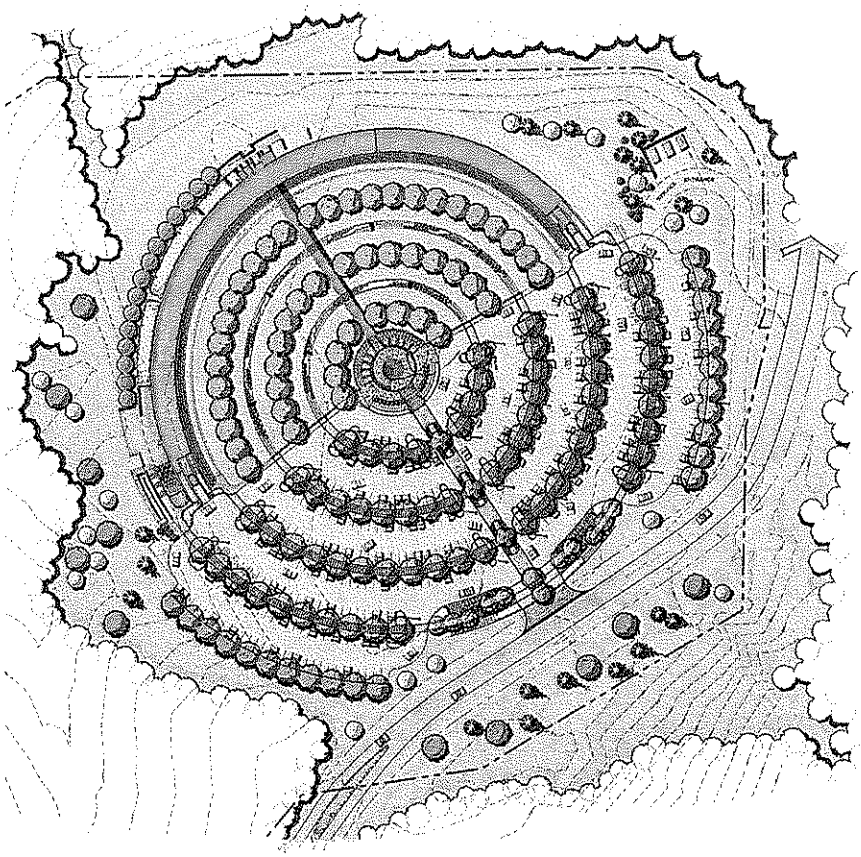
Chesapeake Energy Eastern Division Headquarters
Charleston, West Virginia



GAI Project Manager:
David Gilmore, ASLA, CLARB

Project Team:
GAI Consultants, Inc. (Prime)

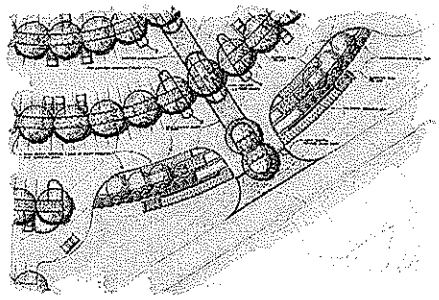
Client:
Elliott + Associates Architects

Client Contact:
Bill Yen
405.232.9554

Project Cost:
$35 Million

Completion Date:
2009

#E070497



Brief Project Description

GAI Consultants, Inc. (GAI) was contracted by Elliott and Associates Architects to provide site design services for Chesapeake Energy's Regional Headquarters. The project included preliminary site layout, coordination of subsidence investigation, grading, storm water, utilities, landscaping, and signage. Also included in the project tasks was obtaining permitting through West Virginia Department of Environmental Protection and Army Corp of Engineers. In addition to the permitting, the building and site were designed using the LEED (Leadership in Energy and Environmental Design) rating system to attain a silver or gold designation. The site LEED elements included capturing rainwater for reuse to supplement the site irrigation system, and minimizing site footprint. The site supports a 4-story 121,000-square-foot building that contains 366 offices, an employee cafeteria, and a 6,500-square-foot fitness center.

Work Tasks/Services

- Preliminary site layout
- Coordination of subsidence reports
- Grading
- Storm water design
- Coordination of lighting and irrigation design
- Utility design
- Landscaping/signage design
- Permitting (WVDEP, Corps of Engineers)
- Assist in LEED requirements

For more information on GAI Consultants, Inc., please visit www.gaiconsultants.com.

James Hemme, P.E., L.R.S.

Senior Project Manager

Education

B.S. Civil Engineering, 1989 West Virginia University Institute of Technology
Marshall University Graduate College – Various Courses in Environmental Engineering

Registrations

West Virginia Professional Engineer No. 12195
Kentucky Professional Engineer No. 25437
Ohio Professional Engineer No. 72851
West Virginia Licensed Remediation Specialist No. 003

Professional Development

OSHA 40 hour Hazwopper Training
NICET 1 – Geosythetics Installation Inspection (expired)
Nuclear Density Gage Training – DOT and NRC (expired)
MSHA Safety Training (expired)

Previous Employment

2000 to 2006	Environmental Design Group (now Floyd Browne Group) – Project Manager
1997 to 2000	Potesta and Associates – Project Manager
1995 to 1997	Terradon Corporation – Senior Engineer
1990 to 1995	Joyce Engineering – Senior Engineer
1989 to 1990	Dewberry and Davis - Engineer

Awards

- Florida Street Streetscape Masterplan (Senior Engineer) - WV ASLA Honor Award
- Dupont Hyper Plaza Design (Senior Engineer) – WV ASLA Honor Award
- Kanawha Trestle Rail Trail Masterplan (Project Manager) – WV ASLA
- Merit Award and WV ACEC Silver Award
- April Dawn Park Sprayground "Teays Valley Monster" (Senior Engineer)–WV ASLA Honor Award
- National Radio Astronomy Observatory (NRAO) Wastewater Treatment Plant Design (Project Manager) – WV ACEC Gold Award
- Coldwater Creek Distribution Center Site Preparation (Project Manager) – WV ACEC Gold Award

Professional Experience

Mr. Hemme has a wide variety of experience in site development, streetscape, environmental civil engineering and site development projects while at GAI and trough previous employments. He has worked extensively with private developers, architects, municipalities and governmental agencies. He is an expert in site engineering, NEPA compliance and storm water management. He worked on landfills, quarries, mines, industrial, and commercial facilities. He has performed Phase 1 of environmental site assessments; waste, industrial waste, erosion and sediment control permitting; designed extensive storm water management systems; designed both large and small site developments ranging from 1 acres to over 60 acres in size; designed wetland mitigation areas; assisted in the preparation of geotechnical reports; flood plain modeling, highway/roadway design, right-of-way plans, prepared detailed construction plans and cost estimates for projects ranging from $10,000 to over $2 million in cost.

Representative Project Experience:

General Engineering and Permitting Experience:

- Site Design for over 100 different projects throughout WV, OH, KY and PA
- Design of over 50 storm water management systems
- Detailed design of over 100 different ponds, embankments and lagoons
- Preparation of over 100 detailed erosion and sediment control plans
- Preparation of over 100 NPDES Construction Storm water Permit Applications
- NEPA compliance for wetlands, streams, cultural resources, endangered species, etc.
- Design and permitting for 50 different solid waste facilities
- Phase 1 Environmental Site Assessments for a wide range of facilities

Development / Site Planning:

- Chesapeake Energy Regional Headquarters, Charleston, West Virginia (**LEED Project**)
- Chesapeake Energy Field Office, Jane Lew, West Virginia
- Chesapeake Energy Field Office, Mount Morris, Pennsylvania
- Chesapeake Energy Field Office, Honey Branch, Kentucky
- Cheat Landing Office Park, Morgantown, West Virginia
- The Villages at Cheat Landing, Morgantown, West Virginia
- The Pines Country Club, Morgantown, West Virginia
- Stonegate at Cranberry, Cranberry Township, Pennsylvania
- Dow Chemical South Charleston Plant – Entrance, Parking and Pedestrian Improvements
- Ft. Boreman Development–Master Plan Site Preparation and Roadway Design, Parkersburg, WV
- Coldwater Creek Distribution Center and Wetland Mitigation in Parkersburg, WV

Parks & Recreation:

- Golf Club House and Lodge Site Development at Stonewall Jackson State Park
- Cedar Creek State Park Camp Ground Expansion, Glenville, West Virginia
- Dow Heritage Park, Charleston, West Virginia
- Fort Boreman Historic Park, Parkersburg, West Virginia
- Dupont 'Hyper' Plaza, Belle, West Virginia
- April Dawn Sprayground and Park "Teays Valley Monster"
- Rotary park Improvements, Huntington, WV

Streetscape and Trails

- Kanawha Trestle and Rail Trail Master Plan
- Florida Street Master Plan for the City of Charleston, West Side Neighborhood Association
- City of Richwood, West Virginia Streetscape Master Plan and Phase 1 Construction
- Phase 1 of the Florida Street Streetscape
- Washington Street East Phase 2 Streetscape, Charleston, WV
- Pennsylvania Avenue Streetscape, Charleston, WV
- City of Charleston, East End Design Cheret
- City of Charleston, "Think Tank" Design Cheret
- Volunteer in preparation of Greater Charleston Greenway Initiative by the WV Land Trust Co.
- Current volunteer with the Riverside South Committee / Charleston Land Trust
- North Bend Rail Trail Flood Damage Repair

David Gilmore, RLA, CLARB

Land Development Services Manager

Education

BSLA, College of Agriculture & Forestry, 1988 West Virginia University

Professional Affiliations

American Society of Landscape Architects, ASLA
WV Chapter of American Society of Landscape Architects
Council of Landscape Architectural Review Board, CLARB

Professional Development

WVASLA State Licensing Board Member, 2003-2006
Past President, WVASLA
Executive Committee Member, WVASLA
Chairman, WVASLA Licensing and Sunset Review Committee
Judge, Senior Design Awards, West Virginia University

Registrations

Council of Landscape Architectural Registration Board Certified
West Virginia Professional Landscape Architect No. 247
Indiana Professional Landscape Architect No. LA 20700137
Pennsylvania Professional Landscape Architect No. LA 002737

Previous Employment

2003 to 2006	Triad Engineering, Inc. – Senior Landscape Architect
2000 to 2003	Environmental Design Group, Inc. – Senior Landscape Architect/Associate
1993 to 2000	LANDesign Associates – President
1988 to 1993	Valley Gardens, Inc. – Land Planner / Design Department Manager
1987 to 1998	Gifford, Nielson & Riesburg – Land Planner (internship)

Awards

- Merit Award (WVASLA): 'Hyper' Employee Plaza, Main Entrance Improvements
  Client: Dupont Company
- Merit Award (WVASLA): Florida Street Revitalization Master Plan
  Client: West Side Neighborhood Association

Professional Experience

Mr. Gilmore has 19 years of experience on a diverse range of projects encompassing all aspects of landscape architectural design in both the public and private sector. Experience includes, but is not limited to: project and office management, construction document and technical specification preparation, site analysis, schematic design, construction administration, master & land-use planning (resort, parks, recreational, residential, industrial, commercial), streetscape and municipality improvements, landscape and hardscape design, graphic presentation drawing.

Streetscape / Urban Revitalization:

- Pennsylvania Street, Carmel Indiana
- St. Albans Master Plan, St. Albans, WV.
- St Albans Phase I
- St. Albans Phase II
- Pennsylvania Avenue Gateway, Charleston, WV
- Florida Street Revitalization Master Plan, Charleston, WV.

- Williamson Master Plan, Williamson, WV.
- MacCorkle Avenue Greenspace Improvements, Kanawha City, WV.
- Kanawha Valley Rapid Transit Shelter/Plaza Design

Parks & Recreation:

- Stonewall Jackson State Park Masterplan, Roanoke, West Virginia
- Twin Falls State Park, Twin Falls, West Virginia
- Dow Heritage Park, Charleston, West Virginia
- Charleston Area Medical Center General Division Employee Park, Charleston, West Virginia
- Dupont 'Hyper' Plaza, Belle, West Virginia
- Ohio to Erie Trail, Multiple Counties, Ohio
- Coonskin Park , Charleston, West Virginia

Hospitals / Institutional / Campus Planning:

- Dow South Charleston Plant
- Beckley Federal Courthouse Security Upgrades
- Charleston Area Medical Center Memorial Park
- King's Daughters Medical Center
- WVU Gateway Study
- Town of Fayetteville Cemetery Master plan
- Trinity Lutheran Church Columbarium Master Plan
- First Presbyterian Church Columbarium Master Plan
- Yeager Airport Master Plan
- The Church of Jesus Christ of Latter-Day Saints, Multiple Projects
- Marshall University Dormitory / Alumni Center
- West Virginia University Dormitory, Evansdale Campus
- West Virginia University Dormitory, Downtown Campus
- Potomac State Dormitory
- West Virginia State Student Housing, Institute, West Virginia

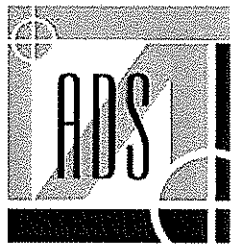
Development / Site Planning:

- Cheat Landing Office Park, Morgantown, West Virginia
- The Villages at Cheat Landing, Morgantown, West Virginia
- The Pines Country Club, Morgantown, West Virginia
- Stonegate at Cranberry, Cranberry Township, Pennsylvania
- Chesapeake Energy Regional Headquarters, Charleston, West Virginia (**LEED Project**)
- Chesapeake Energy Field Office, Jane Lew, West Virginia
- Chesapeake Energy Field Office, Mount Morris, Pennsylvania
- Chesapeake Energy Field Office, Honey Branch, Kentucky
- Ridge Run @ North Camp, Wisp Ski Resort, Deep Creek Maryland
- Cambridge Place Office Park, Bridgeport, West Virginia
- Stonewall Jackson State Park Masterplan, Roanoke, West Virginia
- Land-use Study / Development Alternatives, Aspen Corporation, Lewisburg, West Virginia
- Commerce Park Mixed-use Development Masterplan, Huntington, West Virginia
- Fort Boreman Mixed-use Development Masterplan, Parkersburg, West Virginia
- Wilkerson Dental Office, Charleston, West Virginia
- Ocean Isle Beach Resort Masterplan, Ocean Isle, South Carolina
- 5/3 Bank, Cross Lanes, WV.
- Banc One, Teays Valley WV

Residential Planning & Landscape Design:

- < 500 Projects

Allegheny Design Service



Allegheny Design Services

Structural Engineering

102 Leeway Street
Morgantown, WV 26505
Phone: (304)599-0771
Fax: (304)599-0772
www.alleghenydesign.com

CONSULTING ENGINEERING FIRM SPECIALIZING IN STRUCTURAL BUILDING DESIGN AND BUILDING ANALYSIS

OFFICE BUILDINGS

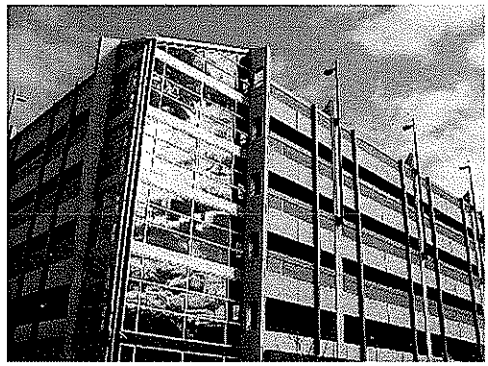
Allegheny Design Services is a consulting engineering firm specializing in structural building design and building analysis.

Dedicated to serving West Virginia and the surrounding region, *ADS* recognizes the need for reliable and full service structural engineering support. *ADS* provides all phases necessary for the successful completion of a building project including schematic design studies, design development, construction documents and specifications, and construction administration.

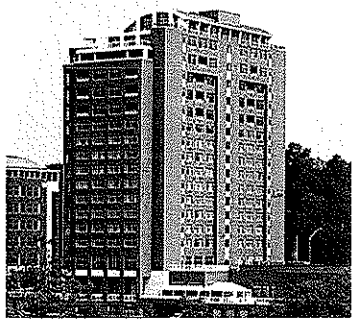
Over 20 years in Design and Project Management of:

- Commercial
- Industrial
- Institutional
- Educational Facilities

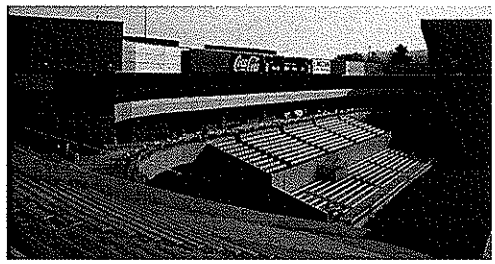
MIXED USE



PARKING GARAGES

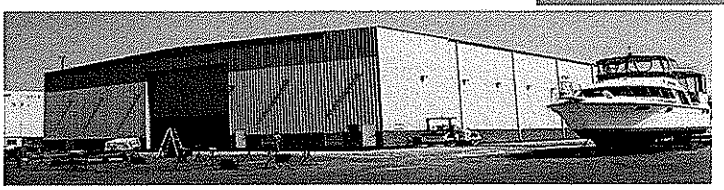


HOTEL
CONFERENCE CENTERS



ATHLETIC FACILITIES

SECONDARY EDUCATION



METAL BUILDING SYSTEMS

HEALTH CARE

Allegheny
Design Services
Structural Engineering
102 Leeway Street
Morgantown, WV 26505
Phone: (304)599-0771
Fax: (304)599-0772
E-mail: Dave@AlleghenyDesign.com
Web: www.AlleghenyDesign.com

FIRM PROFILE

Allegheny Design Services is a consulting engineering firm specializing in structural building design and building analysis.

Dedicated to serving West Virginia and the surrounding region, ADS recognizes the need for reliable and full service structural engineering support. ADS provides all phases necessary for the successful completion of a building project including schematic design studies, design development, construction documents and specifications, and construction administration. We currently hold licenses in West Virginia, Virginia, Maryland, Pennsylvania, and District of Columbia.

ADS's experience exceeds twenty-five years in the Design and Project Management of:

Commercial Facilities

Industrial Facilities

Institutional Facilities

Educational Facilities

ADS was established by David Simpson, P.E., MBA, in 2002 as a result of a need in North Central West Virginia for reliable structural engineering services. ADS utilizes a combination of office technology and a motivated staff to deliver projects typically up to $25 million in construction value. We have completed design work for over $150 million in construction since our inception. Our clients include architects, contractors, developers, attorneys, and insurance companies.

Building systems delivered by ADS include structural steel, reinforced concrete, precast concrete, and structural timber. ADS currently utilizes the latest engineering design and drafting software for the development of project work.

ADS is covered under a $1 million liability policy for errors and omissions through Beazley Insurance Company.

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Web: www.AlleghenyDesign.com

KEY PERSONNEL

David R. Simpson, P.E., SECB, MBA, President

West Virginia Institute of Technology, BSCE

West Virginia University, MBA

Structural Engineering Certification Board

P.E. Licenses in the following States:

- West Virginia
- Pennsylvania
- Maryland
- Virginia
- District of Columbia

National Council of Examiners for Engineering and Surveying

Michael L. Sipe, E.I., Engineering Intern

West Virginia Institute of Technology, BS Mechanical Engineering

West Virginia University

- Structural Analysis
- Steel Design
- Reinforced Concrete Design

Jason D. Robinson, E.I., Engineering Intern

West Virginia University, BS Civil Engineering

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Web: www.AlleghenyDesign.com

David R. Simpson, P.E., SECB, MBA
President

Education:

West Virginia Institute of Technology
B.S. Civil Engineering

West Virginia University
Masters Business Administration

West Virginia State College
Architectural Technology

Professional Registrations:

Year first registered: 1983
Structural Engineering Certification Board
West Virginia
Pennsylvania
Maryland
Virginia
District of Columbia
National Council of Examiners for Engineering and Surveying

Professional Memberships:

American Society of Civil Engineers
Structural Engineering Institute, Charter Member
American Concrete Institute
American Institute of Architects – West Virginia Chapter
American Institute of Steel Construction, Inc.
American Iron and Steel Institute Member

Continuing Education:

2005 AISC Specification for Structural Steel Buildings – September 27, 2006 – Pittsburgh, PA
ASCE Testifying Skills for Engineers – February 16, 2007 – Orlando, FL

Professional Experience:

Responsible for project management and design at Allegheny Design Services. Experience includes over 24 years in structural design and project management for industrial, commercial, institutional, and nuclear/chemical facilities utilizing steel, concrete, masonry, and wood. Past accomplishments include design and construction administration of health care facilities, hotels, schools, shopping centers, aircraft hangars, numerous retail facilities, and numerous forensic engineering assignments. Experience has been obtained from the following assignments:

Experience Record:

Allegheny Design Services, LLC, President,	May 2002 to Present
R.M. Gensert and Associates, Vice President,	August 1998 to May 2002
West Virginia University, Assoc. Director Construction	August 1988 to August 1998
Simpson Engineering, Owner	August 1988 to August 1998
CECO Buildings Division, Senior Structural Engineer	April 1985 to August 1988
Rockwell International, Facility Structural Engineer	March 1982 to April 1985
Bellard Ladner & Assoc., Staff Structural Engineer	Sept. 1981 to March 1982
PPG Industries, Facility Structural Engineer	January 1980 to Sept. 1981

Additional Professional Experience:

Experience encompasses design, project management, and construction administration for reinforced concrete, structural steel, precast concrete, masonry, and wood structures.

Project experience includes:

Fairmont Senior High School, Fairmont, WV
Belmont Community Center, St. Clairsville, OH
Monongalia General Hospital Operating Room Addition, Morgantown, WV
Chestnut Ridge Church, Morgantown, WV
West Virginia University Business and Economics Building, Morgantown, WV
West Virginia University High Density Book Storage Facility, Morgantown, WV
West Virginia University Life Sciences Building, Morgantown, WV
West Virginia University Student Recreation Center, Morgantown, WV
West Virginia University Wise Library Addition, Morgantown, WV
West Virginia University White Hall Computer Center, Morgantown, WV
UPMC Hillman Cancer Center, Pittsburgh, PA
Carnegie Museum of Natural History Addition, Pittsburgh, PA
Cultural Trust District Parking Garage, Pittsburgh, PA
Delaware Valley Veterans' Home, Philadelphia, PA
Fairmont State University Parking Garage, Fairmont, WV
First Avenue Parking Garage, Pittsburgh, PA
Hillman Cancer Center (UPMC), Pittsburgh, PA
New Enterprise Precast Corporate Headquarters, New Enterprise, PA
Respironics Corporate Office Facility, Pittsburgh, PA
International Brotherhood of Electrical Workers Headquarters Training Center, Pittsburgh, PA
Laurel Highlands Middle School Addition, Uniontown, PA
Trinity High School, Morgantown, WV
Mylan Pharmaceuticals Parking Garage, Morgantown, WV
Phipps Conservatory Addition, Pittsburgh, PA
Radisson Hotel and Conference Center, Morgantown, WV
Western Pennsylvania School for Blind Children, Pittsburgh, PA
In-Situ Vitrification Nuclear Waste Encapsulation Project, Richland, WA
Dominion Transmission Office Building, Clarksburg, WV
Multiple structural evaluations and expert witness for structural damage due to subsurface mining subsidence, floods, ice, wind, and construction errors
Over 400 low-rise metal building projects from Maine to South Carolina, including warehouses, aircraft hangar facilities, shopping centers, industrial facilities, and office facilities.

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Web: www.AlleghenyDesign.com

Michael L. Sipe, E.I.
Engineering Intern

Education:

West Virginia University Institute of Technology
B.S. Mechanical Engineering
Minor: Mathematics

Awards/Achievements/Organizations:

Deans List, last 4 completed semesters
Member of Pi Tao Sigma
Member of AISC
Associate Member of ASCE

Professional Registrations:

West Virginia, Engineering Intern License # 8519

Professional Experience:

Responsibilities include structural engineering design, construction documents, quality control, field engineering and project engineering.

Experience record:

Avery Court Apartments, Parkersburg, WV
Cutlip Christie Office Complex, Clarksburg, WV
Dominion Exploration Addition, Jane Lew, WV
Fairmont State University Smoke Vents, Fairmont, WV
Finite Element Analysis of Various Material Handling Structures
Gassaway Bank, Flatwoods, WV
Glenmark Office Building, Morgantown, WV
Greer Limestone Conveyor Structure Renovations, Morgantown, WV
Morgantown Event Center, Morgantown, WV
Pressley Ridge School Residence Hall & Dining Facilities, Clarksburg, WV
Proplex Athletic Training Facility, Morgantown, WV
Waterfront Marina, Morgantown, WV
West Milford Elementary School Classroom Addition, West Milford, WV
WVU Downtown Student Housing, Morgantown, WV
WVU Puskar Academic Center, Morgantown, WV

Courses and Continuing Education:

WVU Structural Analysis I, Spring 2006
WVU Steel Design, Fall 2006
WVU Reinforced Concrete Design, Spring 2007
AISC Design Steel Your Way with the 2005 AISC Specification, September 2006
ASCE Steel Framed Buildings, May 2007
AISC Façade Attachments to Steel Frames, September 2007
ASCE Reinforced Masonry: Design and Construction, November 2007

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Phone: (304)599-0771
Fax: (304)599-0772
E-mail: Jason@AlleghenyDesign.com
Web: www.AlleghenyDesign.com

Jason D. Robinson, E.I.
Engineering Intern

Education:

West Virginia University
B.S. Civil Engineering

Awards/Achievements/Organizations:

Dean's List
Member of AISC
Associate Member of ASCE

Professional Registrations:

West Virginia, Engineering Intern License #8699

Professional Experience:

Responsibilities include structural engineering design, construction documents, quality control and field engineering.

Experience record:

Gabriel Brothers Renovation, Clarksburg, WV
Goshen Baptist Church, Morgantown, WV
Mylan Upper Warehouse to Labs, Morgantown, WV
The Dayton, Morgantown, WV
The View at the Park Phase 2, Morgantown, WV

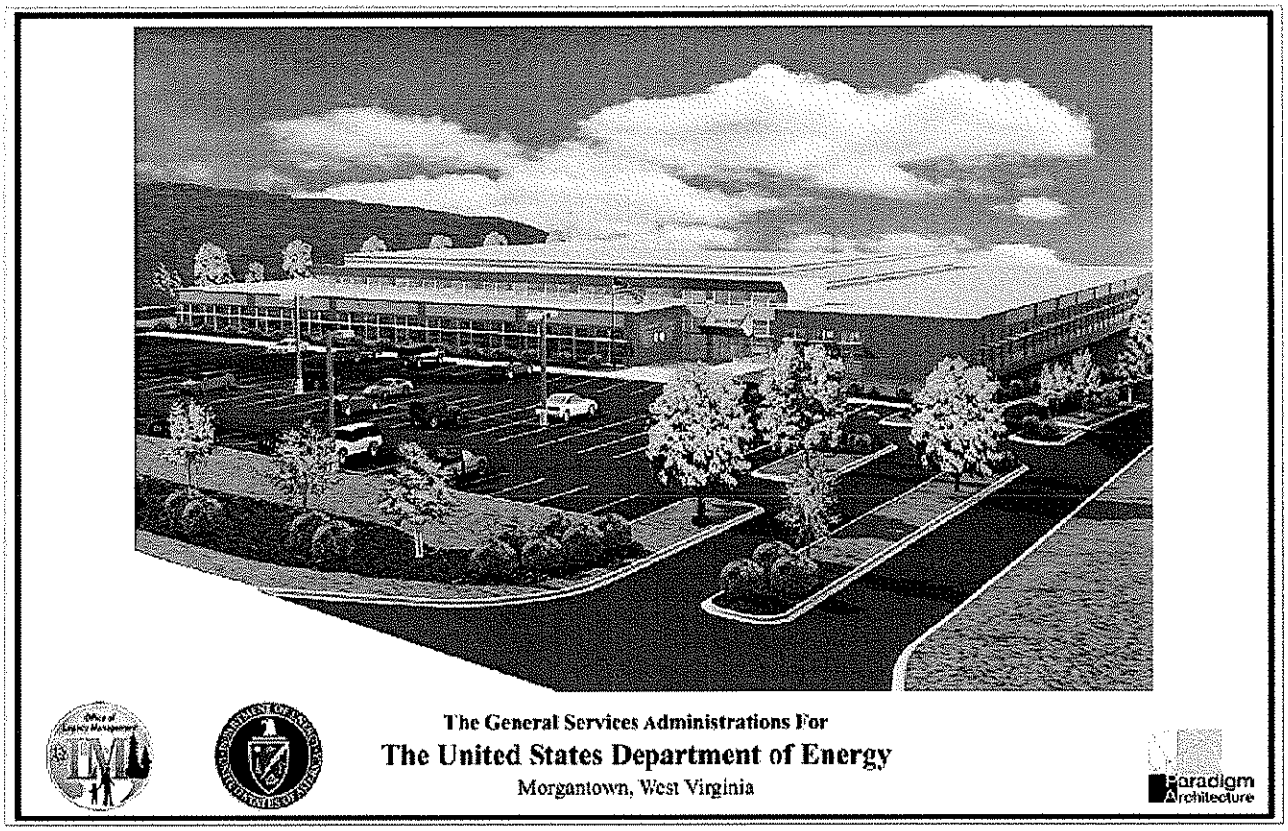
Courses and Continuing Education:

WVU Steel Design – Fall 2007
AISC Façade Attachments to Steel Frames, September 2007
ASCE Reinforced Masonry: Design and Construction, November 2007

Allegheny Design Services
Structural Engineering

PROJECT PROFILE

GSA - Department of Energy
Morgantown, WV



PROJECT ARCHITECT: Paradigm Architecture, Morgantown, WV
STRUCTURAL ENGINEER: Allegheny Design Services, Morgantown, WV
CONTRACTOR: DCK, Pittsburgh, PA

PROJECT SCOPE:
A new modern office and records storage building for the United States Department of Energy Office of Legacy Management. Awarded through a Design-Build Competition sponsored by the General Services Administration. This one story building includes 37,000 square feet of NARA Certified Records Storage space and additional spaces for administrative offices, receiving/processing, and meetings/research areas.

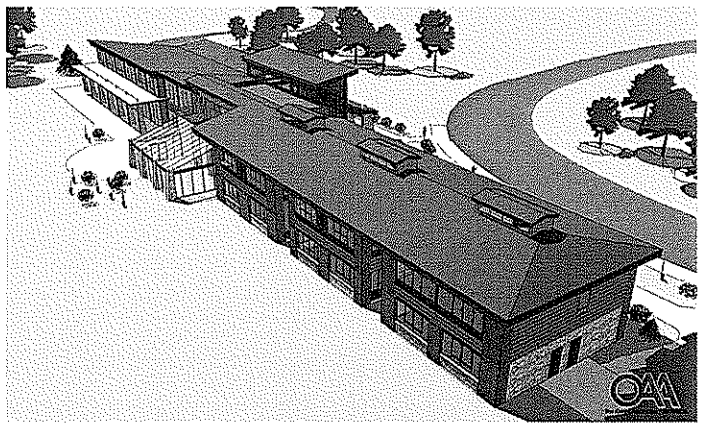
PROJECT VALUE: $ 8 Million (Shell)

ESTIMATED PROJECT COMPLETION: Fall 2009

Allegheny Design Services
Structural Engineering

PROJECT PROFILE

Canaan Valley Institute
Headquarters/Educational Facility
Davis, WV



PROJECT ARCHITECT: The Omni Associates—Architects, Fairmont, WV
STRUCTURAL ENGINEER: Allegheny Design Services, Morgantown, WV
CONTRACTOR: Manheim Corporation, Pittsburgh, PA

PROJECT SCOPE:

- Research Facilities
- Offices
- Public Service Facilities

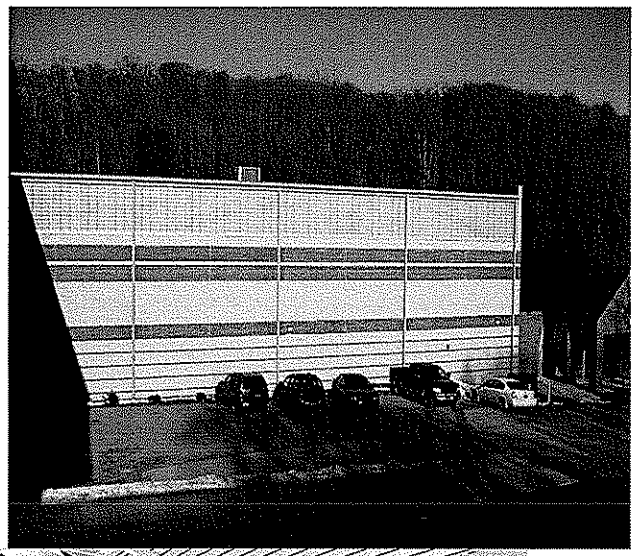
PROJECT VALUE: $6.5 Million

ESTIMATED PROJECT COMPLETION: 2009

Allegheny Design Services
Structural Engineering

PROJECT PROFILE

Davis & Elkins College
Athletic Center
Elkins, WV



PROJECT ARCHITECT: Paradigm Architecture, Morgantown, WV
STRUCTURAL ENGINEER: Allegheny Design Services, Morgantown, WV
CONTRACTOR: March-Westin Company, Inc., Morgantown, WV

PROJECT SCOPE:
- Gymnasium
- Offices
- Classrooms

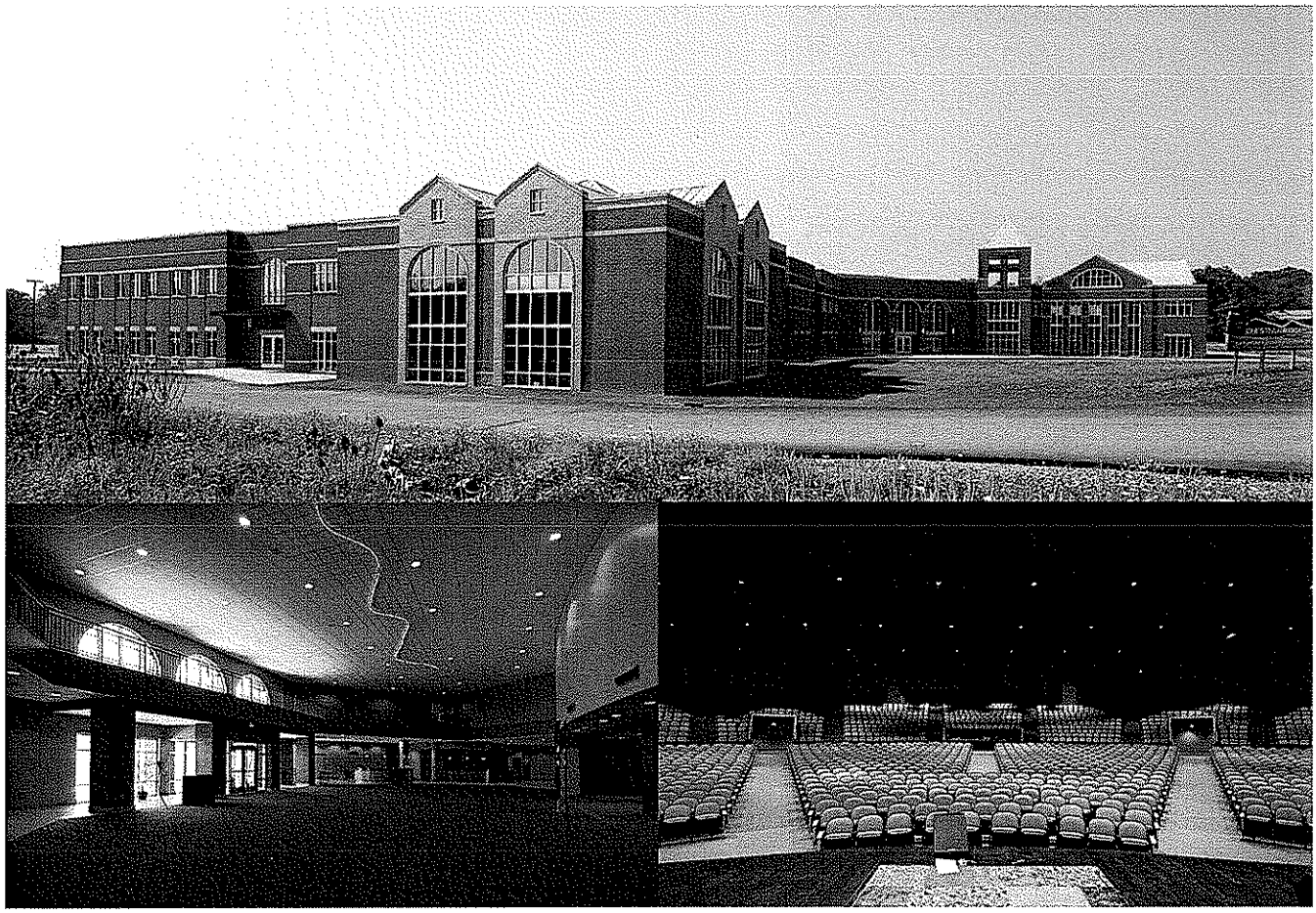
PROJECT VALUE: $6 Million

PROJECT COMPLETION: 2006

Allegheny Design Services
Structural Engineering

PROJECT PROFILE

Chestnut Ridge Community Church
Morgantown, WV



PROJECT ARCHITECT: Paradigm Architecture, Morgantown, WV
STRUCTURAL ENGINEER: Allegheny Design Services, Morgantown, WV
CONTRACTOR: March-Westin Company, Inc., Morgantown, WV

PROJECT SCOPE:

- Education/Gymnasium Wing
- Administrative Office Wing
- 2000 Seat Sanctuary

PROJECT VALUE: $12 Million
PROJECT COMPLETION: 2006

Allegheny Design Services
Structural Engineering

PROJECT PROFILE

Delaware Valley Veteran's Home
Philadelphia, PA

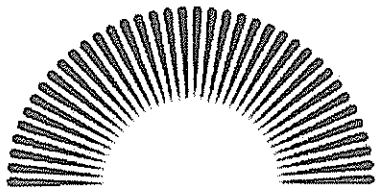
PROJECT ARCHITECT: GBQC Architects, Philadelphia, PA
STRUCTURAL ENGINEER: David Simpson of Allegheny Design Services, Morgantown, WV in former employ of R. M. Gensert Associates, Pittsburgh, PA

PROJECT FEATURES:

- New State-of-the-Art 170 Bed Care Facility
- Personal and Alzheimer's Care
- Interior Skylit 'Main Street' Corridor
- Designed and bid in eight months

PROJECT VALUE: $19 million

PROJECT COMPLETION: 2002



ZDS

Design/Consulting Services

MECHANICAL . ELECTRICAL . INDOOR AIR QUALITY . ENERGY . COMMISSIONING

91 Smiley Drive
St. Albans, WV 25177

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

Email: ZDS Design@aol.com

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

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

- **Todd A. Zachwieja,** PE, C.E.M., LEED AP, Chief Executive Officer, brings with him over 28 years in the design and consulting business.
- **Ted T. Zachwieja**, Principal over Construction Administration services with 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 and cofounder of ZECO Consultants.

ZDS is a consulting engineering firm specializing in the following areas:

MECHANICAL
ELECTRICAL
INDOOR AIR QUALITY
COMMISSIONING
ENERGY

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

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

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

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	ELECTRICAL DESIGN
• Heating & Ventilation	• Power Distribution
• Air Conditioning	• Interior Lighting
• Piping	• Exterior Lighting
• Environmental Controls	• Emergency Power
• Process Controls	• Communications
• Refrigeration	• Technology
• Plumbing	• Fire Alarm
• Medical Gases	• Security
• Sprinkler-Fire Protection	• Life Safety
• Master Planning	• Master Planning

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

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

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

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

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 *IN*VIRONMENT© *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 *IN*VIRONMENT™ *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 *IN*VIRONMENT™ *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 organization, 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.

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
- Determine, quantify and assist in securing available Utility & 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 ones.
- Converting constant speed air handling equipment and pumping systems to variable speed operation.
- Modifying air handling equipment from 100% outside air to return air operation.
- Implementing heat recovery units into HVAC equipment.
- Improving laundry, kitchen and other process application efficiencies.

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

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

The ZDS team is trained and experienced in advising you of program options to incorporate energy efficiency and operational saving 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 saving options and providing supporting financial information. We then help you to 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 constructions' deficiencies that were not discovered until the contractors traditional one-year warranty period expires. The mechanical and electrical systems have continued to become more complex with sophisticated control systems and equipment, and a mountainous amount of changing technology. If not properly addressed, building Owners could face numerous operational problems from "Sick Building Syndrome," excessive energy costs, and uncomfortable indoor environments. Commissioning is the missing link between design and implementation.

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

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

NATIONAL RECOGNITION

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

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

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

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

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

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

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

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

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

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

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

Primary MEP Contact: Todd Zachwieja, Principal, mobile phone (304) 545-4550
Secondary MEP Contact: Ted T. Zachwieja, Principal, mobile phone (304) 552-5724

ZDS was formed to provide quality engineering and consulting services specializing in:

- Design of mechanical systems and electrical systems.
- Building indoor air quality survey and analysis.
- Energy management and conservation services.
- Commissioning for new and renovated systems in commercial, educational, industrial and health care facilities.

ZDS approaches engineered systems improvements from the building owner operator's perspective, focusing on practicality, cost effectiveness, energy efficiency, reliability, operability, maintainability of the systems and timely implementation of projects to minimize disruption on existing facilities. We concentrate on optimizing and utilizing the existing systems prior to recommending the purchase of new equipment when upgrading a facility. Actual requirements of existing systems are analyzed and considered in addition to the "design" requirements. Our staff listens to their clients needs through their extensive interaction with the facility operators and the key decision-makers. We believe this approach enhances the design of new systems and ensures that the systems will be practical and functional.

ZDS is a team of professionals capable of meeting a diverse range of needs of facility professionals in the building design, construction and operations. The principals each have specialties in certain aspects that relate to meeting the needs of the building owners and operators. Mr. Ted T. Zachwieja's over 40 years of experience in mechanical and electrical design bring the depth of skills necessary to make the construction and design process operate effectively. Mr. Todd A. Zachwieja's project management skills with his extensive technical strengths in mechanical/electrical engineering and experience in indoor air quality, energy management and commissioning complement the traditional design needs. Mr. Daniel H. Kim's extensive management experience with some of the nation's largest companies provides us with important conceptual planning and organizational understanding. Ms. Lori Zachwieja's accounting and financial management skills provide the in house experience to operate an efficient and effective company to better serve our clients.

ZDS continues to grow and is in the process of opening a Morgantown Office with a Professional Engineer heading that office. Our current project team includes the following to meet the challenges of our client's building design and operating needs.

TODD (TED) A. ZACHWIEJA, PE, C.E.M., LEED AP

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

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

Professional Engineer, West Virginia, No. 10,127
Certified Energy Manager (C.E.M.), National Certification
LEED® Accredited Professional, National Certification through USGBC
Professional Engineer, Pennsylvania, No. PE-040929-R
Professional Engineer, Virginia, No. 0402 025427
Professional Engineer, Ohio, No. E-53587
Professional Engineer, North Carolina, No. PE-017445
Professional Engineer, Kentucky, No. PE-17961
Professional Engineer, Georgia, No. 18253
Professional Engineer, South Carolina, No. 25985

Qualifications

Todd has more than 27 years of experience; in the design, construction management, and specifications for mechanical engineering, heating, ventilating, air conditioning, plumbing, electrical, and lighting; 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 facilities, hospitals and educational design including preparation of construction documents for millions in renovations and additions to facilities. Some of his project experience includes projects new Mercer County Courthouse, Princeton, WV, Kanawha County Commission – 120,000 sf additions/renovations for the Judicial Annex/Kanawha County Courthouse Charleston WV, Laidley Towers – Charleston WV, Renovations to Buildings #1, #3, #4, #5, #5, #7, #8, #9, #10 at the WV State Capitol complex, Cultural Center HVAC Renovation, Union Carbide, United Center - Charleston WV, Phillip Morris USA, Rhone-Poulenc, Toyota, Olin Corporation, Walker Machinery, WV Air & Army National Guard, Bank One, WV; Kohl's, Sears, WV Public Service Commission Headquarters, and Yeager Airport. He also designed one of the largest geothermal heat pump applications in the mid Atlantic region, commissioned HVAC systems and mechanical engineering at many General Motors facilities in North America.

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

Hospital Center, St. Mary's Hospital, Summersville Memorial Hospital, Thomas Memorial Hospital, Webster Memorial Hospital, Cabell Huntington Hospital, Welch Emergency Hospital, Surgicare Center, VA Hospital - Clarksburg, Mercy Medical Center, Wayne Memorial and Webster Memorial Hospital.

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

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

Prior to joining ZDS, Todd Zachwieja coordinated millions in comprehensive energy conservation programs resulting in annual energy saving millions per year and managed a profitable regional office for one of the countries largest energy service companies. He also developed computer programs for building energy analysis and monitoring and presented technical papers at regional and national conferences.

Professional Affiliations

Charter member Mountaineer chapter of American Society of Heating Refrigeration and Air conditioning Engineers (ASHRAE)
Served as ASHRAE's Energy and Technical Affairs Chairman for 6 years.
Recognized by the International Who's Who of Professionals.
Recognized nationally as West Virginia's Business Man of the Year
Recognized nationally in 2007 as a "Legend in Energy"
Charter life member of the Association of Energy Engineers
Professional Affiliate Member of the American Institute of Architecture
Member of the American Association of Hospital Engineers
Member of the National Society of Professional Engineers
Member of National Society of Plumbing Engineers
Member of the International Code Council
Contributing editor and served on the Editorial Review Panel for "The Handbook of Building Management and Indoor Air Quality", "Ventilation for a Quality Dining Experience", INvironment Professional, Power Prescriptions and other publications and articles dealing with Indoor Air Quality (IAQ) and MEP engineering systems.
Presented at regional and national conferences including the National System Commissioning Conference

TED T. ZACHWIEJA

Principal-in-Charge Construction Administration

Education

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

Qualifications

Ted's responsibilities include over 40 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 Specialists.

He has been involved in West Virginia since 1958 in all aspects of mechanical and electrical design and construction, including machine design, structural design and design of heating, ventilating, air conditioning, plumbing, fire protection and electrical systems. His experience includes work for U. S. Steel, Union Carbide, Rhone-Poulenc, Bluefield Regional Medical Center, Charleston Area Medical Center, United Hospital Center, Kanawha County Schools, Marshall University, most buildings on the 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, formerly Charleston National Bank, including conducting a comprehensive energy audit, design of a Building Automation Energy Management System, HVAC renovations of floors LM and LM1, design of flat plate heat exchanger system for the perimeter fan coil units and design of the boiler replacement.

Ted has been involved in the planning, design and construction administration of Concord University's Technology Center and Concord's campus medium voltage upgrades, Marshall University's Harris Hall renovations, Southern WV Community & Technical College's renovations, West Virginia University's White Hall and Armstrong Hall, WVU's Wise Library Sprinkler System, WVU's Chilled Water Loop Interconnect, Morgantown, WV; Charleston Area Medical Center (CAMC), Memorial Division Chiller Replacement; CAMC's General Division Chiller Replacement, Variable Pumping System and Chillers Interconnect, Charleston, WV; and many others. He has worked on new and renovation projects such as West Virginia University Stadium and Forestry Building, Morgantown, WV; Addition and Renovation of the Air Conditioning System for the West Virginia State Capitol Building, Charleston, WV; Conley Hall and Science Building HVAC Renovations and Additions, West Virginia Institute of Technology, Montgomery, WV; Indoor air quality (IAQ) and HVAC Renovations of Andrew Jackson Junior High School for Kanawha County School Systems; Fume Hood

Design and HVAC Additions and Renovations for Union Carbide, Charleston, WV; and Rhone Poulenc, Institute, WV; HVAC renovation for the Benedum Student Center at West Virginia Wesleyan College, Buchannon, WV; Greenbrier East and Greenbrier West Schools; Mingo County Schools; Raleigh County Schools including Shady Springs Middle School, Trap Hill Junior High School, Academy of Career and Technology Center, Marsh Fork Elementary, Park Middle School, Woodrow Wilson High School and others, Pocahontas County High School (Geothermal), Wyoming County Schools; Tucker County Schools; Webster County High School & Webster Springs Elementary School HVAC Renovations (Geothermal) and Exterior Renovations, and various other secondary schools throughout the years.

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

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

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

Professional Affiliations

Construction Specifications Institute (Charter Member)
American Society of Mechanical Engineers
American Society of Heating, Refrigeration & Air Conditioning Engineers
WV Mountaineer Chapter ASHRAE Past President and Charter Member
Association of Energy Engineers
Association of Hospital Engineers
WV Society of Hospital Engineers
Professional Affiliate Member of AIA
WV Association of Physical Plant Administrators

MARK A. MOORE, P.E.

Project Manager: Electrical, Mechanical & Plumbing

Education

BS in Electrical Engineering from West Virginia University Institute of Technology, Montgomery, WV in 2001

Registration

Professional Engineer, West Virginia, No. 17286

Qualifications

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

Mark is also an information systems and technology specialist and provides networking solutions and Windows based programming system solutions.

Mark specializes in electrical power, security, fire alarm, lighting, plumbing, HVAC piping, and fire protection. Some of his educational and health care project experience includes: Charleston Area Medical Center, Bluefield High school renovations/Performing Art Center, Clay Elementary School HVAC Renovations, Concord University Technology Center, Elkins Middle School Renovations, H. J. Keiser Elem renovations, Hopemont State Hospital Fire Alarm renovations, James Monroe High School renovations, Ohio University Bennett Hall M/E Renovations, Park Middle School renovations, Ravenswood High Renovations, Tucker County High/Career Center renovations, Webster Springs Elementary School geothermal heap pump system, Winfield High School HVAC/Electrical renovations, Pocahontas Co High School Renovations/science center additions, new McDowell County Southside K-8 school, Woodrow Wilson High School HVAC/Electrical renovations, United Hospital Center Wound Center and others.

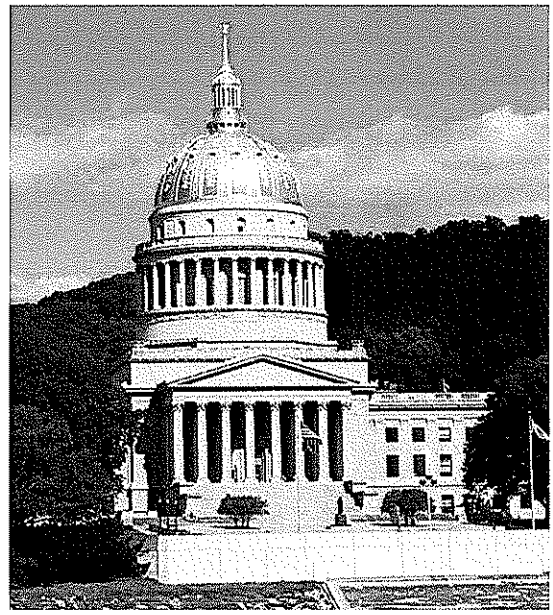
His commercial experience includes; Cass Railroad Clubhouse renovations, DOT Rest Area and Welcome Center prototypes for the WV Department of Transportation, 4-H Camp Muffly Training/Dining facility, Hardy Co. Daycare facility, Jackson County Courthouse Annex renovations, Kanawha County Judicial Annex Renovations, new Mercer County Courthouse Annex, multiple branch bank facilities, Camp Dawson Barracks security renovations, award winning Webster County IMC office facilities, Pendleton County Courthouse additions/renovations, new Webster Co. Multi-tenant Bldg., WV Capitol Complex Performance Contracting HVAC retrofits, WV Capitol Complex Master Planning for Security/Fire Alarm/Life Safety systems and others.

ZDS Design/Consulting Services

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

Client Contact: Mr. Russ LaBarbra,
Sr Performance Assurance Eng
Johnson Controls, Inc.
4132 First Ave.
Nitro, WV 25143
Phone: (304)-759-2709
Cell (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

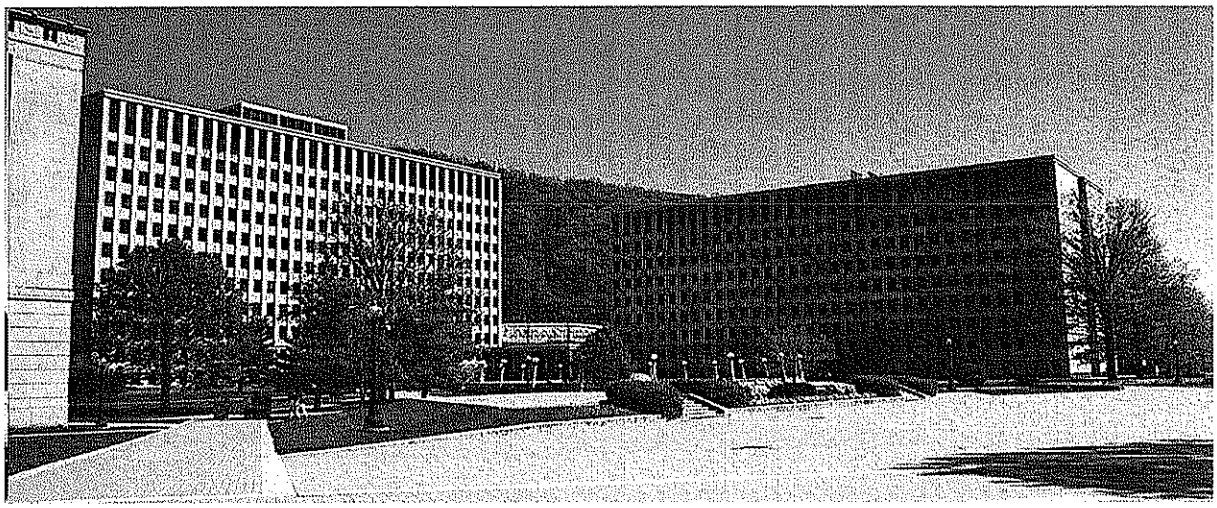
ZDS Design/Consulting Services and Johnson Controls Inc.

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 and others. 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 250,000 square-feet of office space. A centralized heating plant offers greater efficiency in overall system operation,

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.

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 was expanded as the State realized the value of the program and aids in helping them operate their facilities more efficiently and effectively. The WV Division of Protective Services 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, or through separate projects planned for 2,137,400 square-feet involving 15 buildings at the campus.

Performance Contracting Program Costs:	**Up to approximately $20,000,000**
Potential Savings:	***Improvements self-fund within 15 years***
Size:	**1,929,155 FT^2**
Completion:	**2007 for Construction**

ZDS Design/Consulting Services

Client: ***Webster County Schools, West Virginia***
Project: ***Webster County High School Renovations***

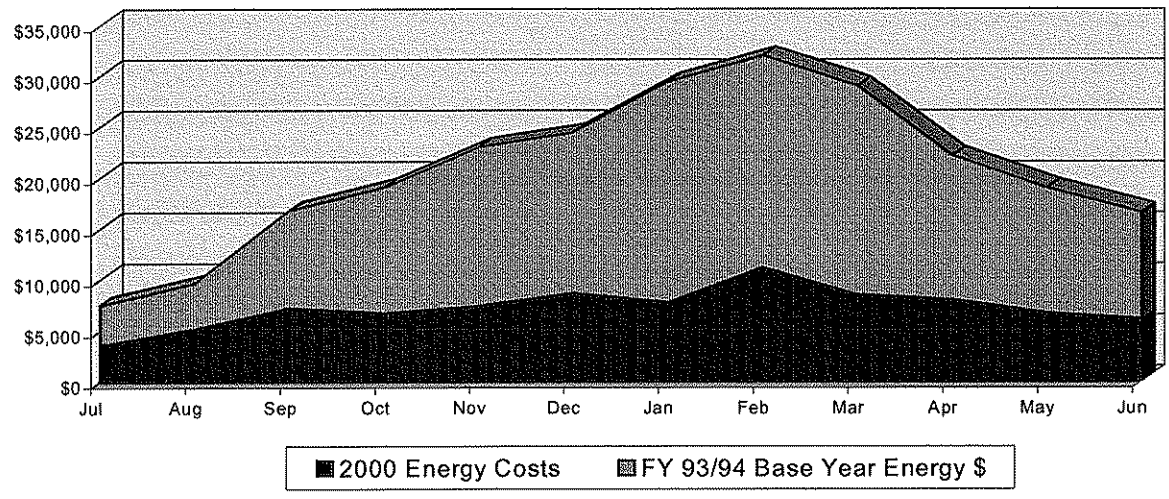
Client Contact: Mr. Harry Given, Retired Dir. of Maintenance.
Webster County Schools
Webster Springs, WV 26288-1123
Home Phone (304) 226-5288

Project Description

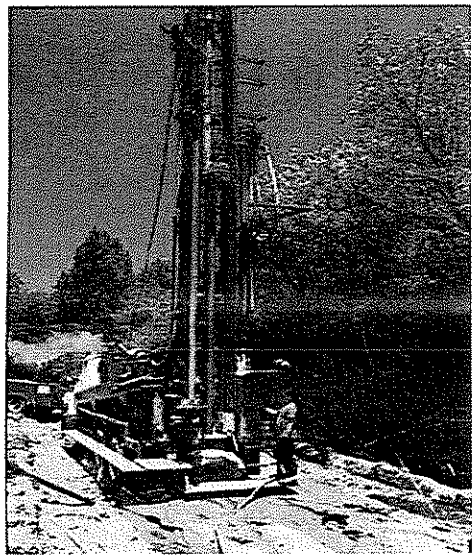
Initially Webster County Schools solicited bids from several Performance Contracting firms to make upgrades at the high school and pay for the improvements. Performance contracting approach could only partially pay for the improvements and a pure performance contracting approach was dropped. Webster 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



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 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.

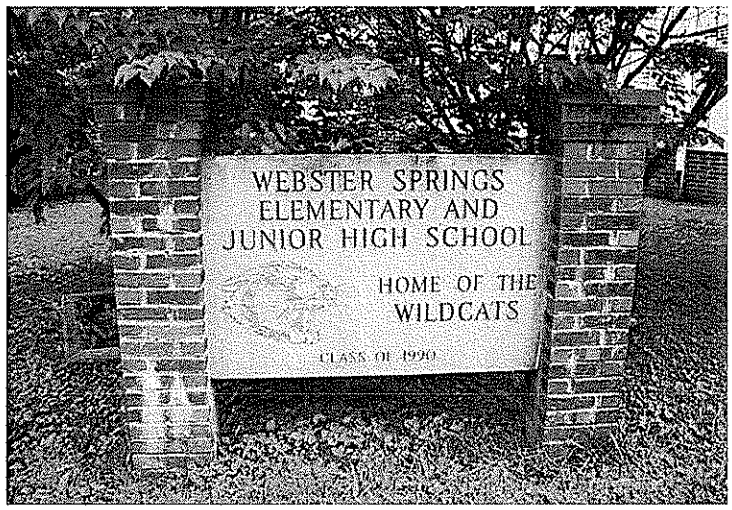
The interior lighting, ceilings and bricking the exterior are part of the overall upgrades to Webster County High School. Webster County Schools was so impressed with the results at Webster County High School that the approach was applied to Webster Springs Elementary School and is proposed for Glade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

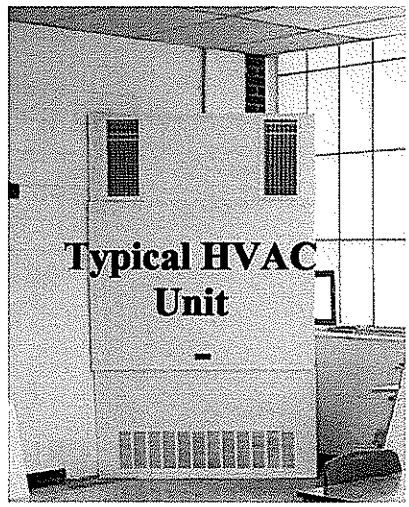
Total Project Cost:	**$5,083,000**
SBA Funds:	**$5,083,000**
Potential Annual Energy Savings:	**50% Reduction HVAC & Lighting Operating Costs.**

ZDS Design/Consulting Services

Client: ***Webster County Schools, WV***
Project: ***Webster Springs Elementary School HVAC Renovations***

Client Contact: Mr. Harry Given, Retired Dir. of Maintenance.
Home Phone (304) 226-5288
Webster County Schools
Webster Springs, WV 26288-1123





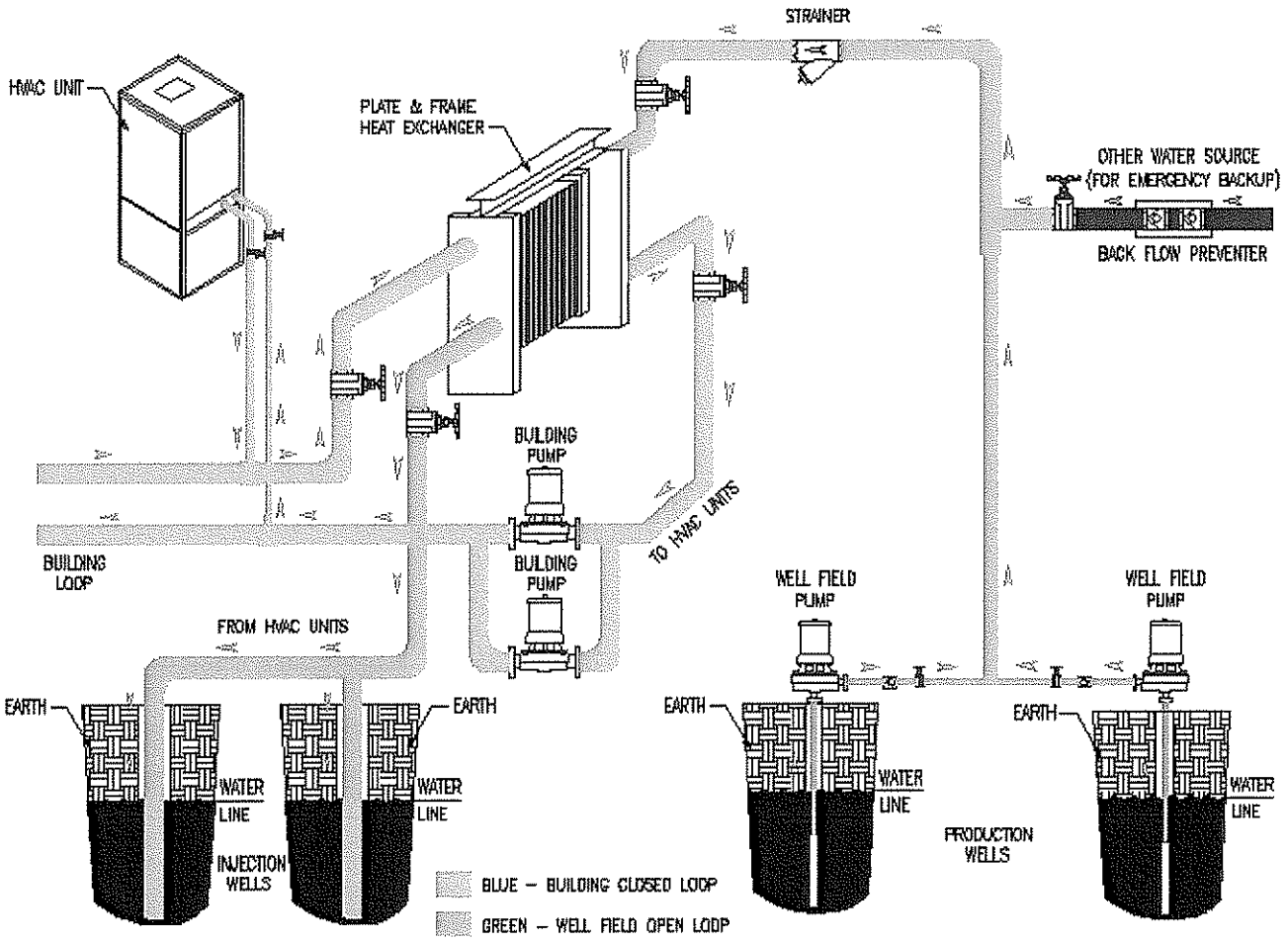
Project Description

ZDS assisted Webster County Schools in obtaining funding for the project from the State's School Building Authority to upgrade Webster Springs Elementary's HVAC systems. The elementary school is a two story structure and was using coal fired steam boilers. Natural gas was not available and the labor and emissions from using coal fire boilers were no longer acceptable. Geothermal heat pump systems were designed and constructed for the school's new HVAC system. The football field beside the school was selected to install the well field. Once construction started, a tremendous amount of water was encountered below the grade which made installing a closed loop well field impractical. Since this large underground aquifer was found an open-loop well field was designed and installed. Multiple production wells and injection wells were installed that extract water from the ground which is piped through a plate and frame heat exchanger then injected back into the ground. ***See the diagram on the next page for more details.***

The HVAC system in the building remained a closed loop system by circulating fluid through the plate-and frame heat exchanger. A 20% propylene glycol/water solution is pumped through the building closed loop using a variable water volume (VWV) pumping system for energy

efficiency and operational flexibility. The building water never comes in direct contact with the well water because the heat exchanger keeps these two water streams separated. A special permit was required in order to use this type of system. This was the first system installed according the State Department and **ZDS** help establish a procedure to minimize the risk of cross contamination with underground aquifers as part of this project.

Indoor air quality issues are addressed in the new design through increased ventilation, improved filtration, customizing the design of the HVAC units to address current Indoor Air Quality practices. Ultraviolet lights are installed to reduce the risk of mold growth and also kill air born germs. Operating costs for the increased ventilation required to meet Indoor Air Quality were minimized through incorporating carbon dioxide outdoor ventilation air control. The open loop geothermal heat pump system is the first of its kind for a West Virginia School.



Total Project Cost: **$1,430,000**
SBA Funds **$1,300,000**
Potential Annual Energy Savings: **40% Reduction in HVAC energy usage**

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.

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!***"

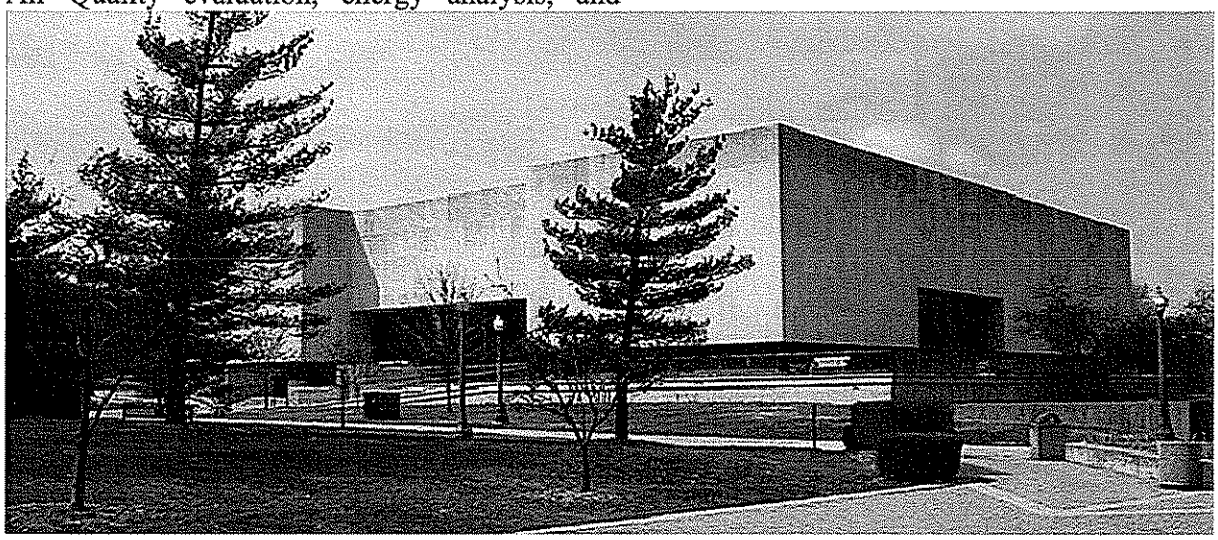
MEP Project Cost:	**$2,856,000**
Project Size:	**56,680 square-feet**
Completion Date:	**Completion fall 2006**

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, x 160
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 ft^2 museum and protecting the artifacts.



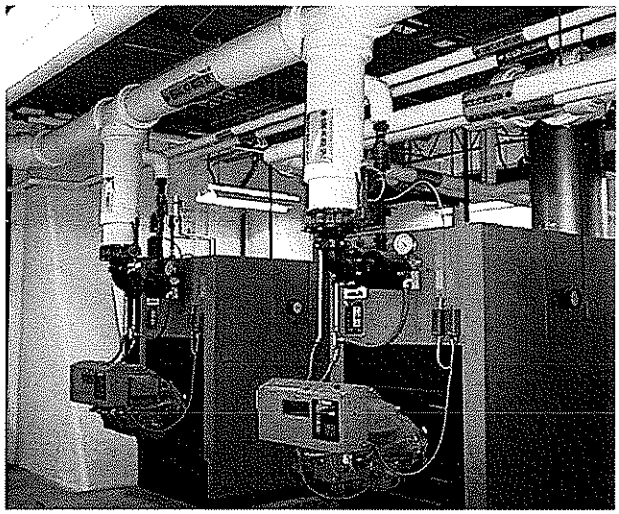
Museum of Culture & History

Project Description

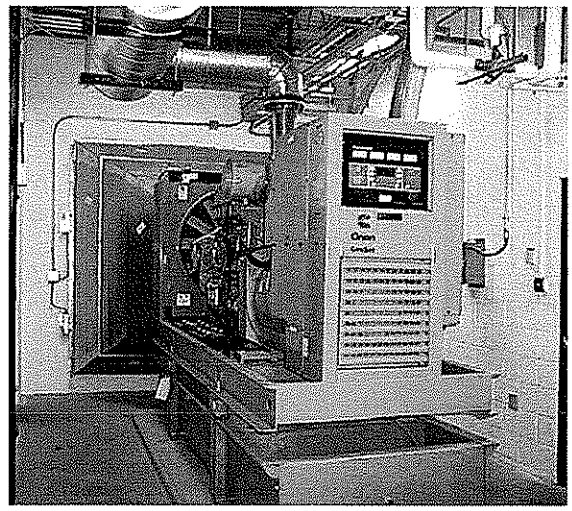
ZDS principals and personnel have been involved in numerous design and recommissioning projects for WV State Capitol Complex while at ZDS and through other employment over their careers. These projects required the engineering planning, design, supervision, preparation of construction documents, specifications, 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 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 were estimated to save near $153,000 annually over the costs of operating the old system. The fire alarm and sprinkler renovations project is scheduled to be completed in 2010.

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 FT^2**
Completion	**2001 for HVAC, 2010 for FA/Sprinklers**

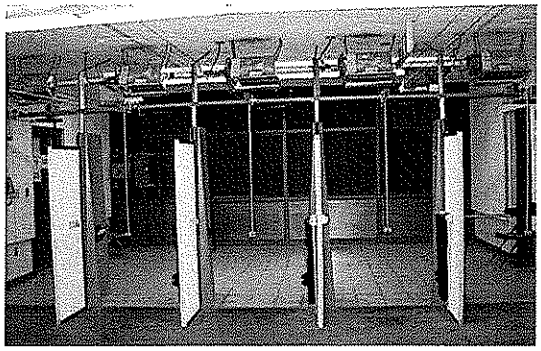
ZDS Design/Consulting Services

Client: ***West Virginia Army National Guard***

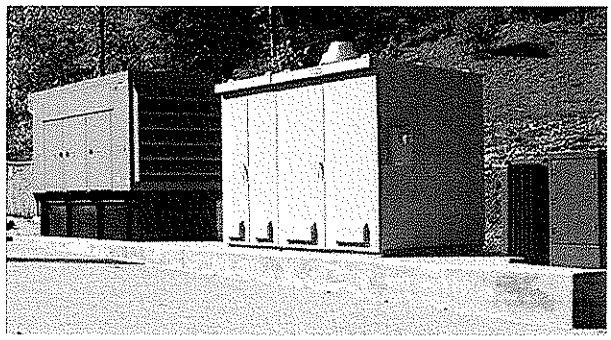
Client Contact: LT. Todd Justice, WVANG Project Mgr.
Charleston, WV

Project Description

ZDS Design/Consulting Services and its principals Ted and Todd Zachwieja were involved in many mechanical/electrical/plumbing design projects for the WV Army and Air National Guard. Two recent ZDS projects with the Army National Guard include providing electrical Design/Build engineering and project management for emergency power for the Army Headquarters Building and Annex Building in Charleston, WV. This project was completed ahead of schedule and within budget to provide emergency power needs for the Coonskin Army National Guard campus as part of their overall homeland security strategy. ZDS also evaluated and designed HVAC renovations to restore four indoor firing ranges to meet current compliance with Army Standards. All four indoor firing ranges, located in Charleston, Pt. Pleasant, Kenova and Wheeling, WV had failed to meet current standards. ZDS's evaluation and engineering efforts helped provide low cost solutions to restore operation and bring the four facilities back into compliance.



Indoor Firing Ranges



Emergency Generator Stations

Previous WV National Guard experience of ZDS personnel includes numerous HVAC and electrical renovations to facilities at Camp Dawson and Charleston including the Maintenance Engineering Building, Squadron Operations Building, AVGAS Facility, Air Guard Headquarters' Building, Air Craft Hanger Heating & Ventilation, Paint Spray Booth HVAC, Barracks HVAC/Electrical/ Security Renovations, Mess Hall MEP Renovations and many more.

Total MEP Project Cost: **Over $4,000,000**

WYK

associates, inc

architecture

planning

References

WYK Associates, Inc.

WYK associates, inc
architecture
planning

References

WYK Associates, Inc.

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