gai consultants
transforming ideas into reality

June 19, 2012

Ms. Tara Lyle
Purchasing Division
2019 Washington Street, East
P.O. Box 50130
Charleston, WV 25305-0130

RE: Expression of Interest for Architectural/Engineering Services
St Mary's Correctional Center Project, COR61531
St Mary's, West Virginia

Dear Ms. Lyle:

GAI Consultants Inc. (GAI) is pleased to submit this proposal for Architectural / Engineering Services (COR61531) for the St. Mary's Correctional Center (SMCC) located in St. Mary's West Virginia. GAI is an 800-person, Engineering News Record Environmental Top 200 engineering consulting firm established in 1958. GAI has been working with the State of West Virginia and the West Virginia Division of Correction (WVDOC) for a five years. The services specified in the request for an Expression of Interest fit closely with the specialty services we provide. These include:

+ Wastewater & Stormwater Systems Engineering
+ Civil and Environmental Engineering
+ Geotechnical Engineering
+ Structural Engineering
+ Construction Management

These are distinctive services of our team, and we have a long-standing reputation for quality work in these areas. Recent examples of relevant projects include engineering, design, permitting and construction support for wastewater facilities at the Anthony and the Huttonsville Correctional Facilities. GAI is familiar with providing services for the WVDOC and with conducting work both within and outside the secured areas. GAI understands the added restrictions associated with working the corrections environment. Our collective capabilities in the services required for this project are unmatched by any other firm in the area. Our in-house full-service team can address all aspects of the project; as such, we will require minimal use of sub-consultants. This will facilitate project team communications and expedite work execution.

However, due to the potential cost savings associated with effective rehabilitation and sewer separations, GAI will be teaming with Insight Pipe Inc. (Insight) of Zelienople, Pennsylvania. Insight's expertise and experience in cured in place pipe (CIPP) as well as other industry leading techniques for sewer and manhole rehabilitation will provide WVDOC with tested solutions that have proven effective in the past. Additionally, the resources needed for video/televising the existing system for analysis and repairs/modifications will be readily available. Finally, McKinley & Associates of Wheeling, West Virginia have agreed to team with GAI as well to provide anticipated architect services during unit #80's rehabilitation.

We have read and understand the project description, special conditions, and general conditions of the Express of Interest. We look forward to speaking with you soon about our potential participation on the project. Please call us at 304.926.8100 ext. 2633, if you have any questions.

Respectfully submitted,
GAI Consultants, Inc.

Charlie Straley, P.E.
Engineering Manager

Enclosures

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

Request for Quotation

RFQ NUMBER	PAGE
COR61531	1

ADDRESS CORRESPONDENCE TO ATTENTION OF:
TARA LYLE
304-558-2544

VENDOR
RFQ COPY
TYPE NAME/ADDRESS HERE

GAI Consultants, Inc.
300 Summers Street, Suite 1100
Charleston, WV 25301

SHIP TO
DIVISION OF CORRECTIONS
ST. MARYS CORRECTIONAL CENTER
(COLIN ANDERSON CENTER)
STATE ROUTE 2
ST. MARYS, WV
26170 304-558-2036

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
04/20/2012				

BID OPENING DATE: 06/12/2012 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	JB		906-00-00-001		

ARCHITECT/ENGINEERING SERVICES, PROFESSIONAL

EXPRESSION OF INTEREST (EOI)

THE WEST VIRGINIA PURCHASING DIVISION FOR THE AGENCY, WV DIVISION OF CORRECTIONS, IS SOLICITING EXPRESSIONS OF INTEREST FOR PROFESSIONAL ARCHITECTURAL ENGINEERING DESIGN SERVICES TO CORRECT VARIOUS ISSUES DEALING WITH A GREASE TRAP, MUFFIN MONSTER, STORM WATER LINES, SEWER LINES AND OTHER PROJECTS AT THE ST. MARYS CORRECTIONAL CENTER PER THE ATTACHED SPECIFICATIONS.

TECHNICAL QUESTIONS MUST BE SUBMITTED IN WRITING TO TARA LYLE VIA MAIL AT THE ADDRESS SHOWN IN THE BODY OF THIS EOI, VIA FAX AT 304-558-4115, OR VIA EMAIL AT TARA.L.LYLE@WV.GOV.

DEADLINE FOR ALL TECHNICAL QUESTIONS IS 05/23/2012 AT THE CLOSE OF BUSINESS. ANY TECHNICAL QUESTIONS RECEIVED WILL BE ANSWERED BY FORMAL ADDENDUM ISSUED BY THE PURCHASING DIVISION AFTER THE DEADLINE HAS LAPSED.

MANDATORY PRE-BID

A MANDATORY PRE-BID WILL BE HELD ON 05/15/2012 AT 10:30 AM AT THE ST. MARYS CORRECTIONAL CENTER. ALL INTERESTED PARTIES ARE REQUIRED TO ATTEND THIS MEETING. FAILURE TO ATTEND THE MANDATORY PRE-BID SHALL RESULT IN DISQUALIFICATION OF THE BID. NO ONE PERSON MAY

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
Charles Straley	304.926.8100	June 19, 2012

TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE
Engineering Manager	25-1260999	

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

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

Request for Quotation

RFQ NUMBER	PAGE
COR61531	2

ADDRESS CORRESPONDENCE TO ATTENTION OF:
TARA LYLE
304-558-2544

VENDOR
RFQ COPY
TYPE NAME/ADDRESS HERE
GAI Consultants, Inc.
300 Summers Street, Suite 1100
Charleston, WV 25301

SHIP TO
DIVISION OF CORRECTIONS
ST. MARYS CORRECTIONAL CENTER
(COLIN ANDERSON CENTER)
STATE ROUTE 2
ST. MARYS, WV
26170 304-558-2036

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
04/20/2012				

BID OPENING DATE: 06/12/2012 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT. NO	ITEM NUMBER	UNIT PRICE	AMOUNT

REPRESENT MORE THAN ONE BIDDER.

AN ATTENDANCE SHEET WILL BE MADE AVAILABLE FOR ALL POTENTIAL BIDDERS TO COMPLETE. THIS WILL SERVE AS THE OFFICIAL DOCUMENT VERIFYING ATTENDANCE AT THE MANDATORY PRE-BID. FAILURE TO PROVIDE YOUR COMPANY AND REPRESENTATIVE NAME ON THE ATTENDANCE SHEET WILL RESULT IN DISQUALIFICATION OF THE BID. THE STATE WILL NOT ACCEPT ANY OTHER DOCUMENTATION TO VERIFY ATTENDANCE. THE BIDDER IS RESPONSIBLE FOR ENSURING THEY HAVE COMPLETED THE INFORMATION REQUIRED ON THE ATTENDANCE SHEET. THE PURCHASING DIVISION AND THE STATE AGENCY WILL NOT ASSUME ANY RESPONSIBILITY FOR A BIDDER-S FAILURE TO COMPLETE THE PRE-BID ATTENDANCE SHEET. IN ADDITION, WE REQUEST THAT ALL POTENTIAL BIDDERS INCLUDE THEIR E-MAIL ADDRESS AND FAX NUMBER.

ALL POTENTIAL BIDDERS ARE REQUESTED TO ARRIVE PRIOR TO THE STARTING TIME FOR THE PRE-BID. BIDDERS WHO ARRIVE LATE, BUT PRIOR TO THE DISMISSAL OF THE TECHNICAL PORTION OF THE PRE-BID WILL BE PERMITTED TO SIGN IN. BIDDERS WHO ARRIVE AFTER CONCLUSION OF THE TECHNICAL PORTION OF THE PRE-BID, BUT DURING ANY SUBSEQUENT PART OF THE PRE-BID WILL NOT BE PERMITTED TO SIGN THE ATTENDANCE SHEET.

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

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

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
Charlie Staley	304.926.8100	June 19, 2012

TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE
Engineering Manager	25-1260999	

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

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

Request for Quotation

RFQ NUMBER	PAGE
COR61531	3

ADDRESS CORRESPONDENCE TO ATTENTION OF:
TARA LYLE
304-558-2544

VENDOR
RFQ COPY
TYPE NAME/ADDRESS HERE

GAI Consultants, Inc.
300 Summers Street, Suite 1100
Charleston, WV 25301

SHIP TO
DIVISION OF CORRECTIONS
ST. MARYS CORRECTIONAL CENTER
(COLIN ANDERSON CENTER)
STATE ROUTE 2
ST. MARYS, WV
26170 304-558-2036

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
04/20/2012				

BID OPENING DATE: 06/12/2012 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT

ANY INDIVIDUAL SIGNING THIS BID IS CERTIFYING THAT: (1) HE OR SHE IS AUTHORIZED BY THE BIDDER TO EXECUTE THE BID OR ANY DOCUMENTS RELATED THERETO ON BEHALF OF THE BIDDER, (2) THAT HE OR SHE IS AUTHORIZED TO BIND THE BIDDER IN A CONTRACTUAL RELATIONSHIP, AND (3) THAT THE BIDDER HAS PROPERLY REGISTERED WITH ANY STATE AGENCIES THAT MAY REQUIRE REGISTRATION.

NOTICE

A SIGNED BID MUST BE SUBMITTED TO:

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

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

SEALED BID

BUYER:----------TL/32----------

RFQ. NO.:----------COR61531----------

BID OPENING DATE:-------06/12/2012----------

BID OPENING TIME:------1:30 PM----------

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
Charles Straley	304.926.8100	June 19, 2012

TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE
Engineering Manager	25-1260999	

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

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

Request for Quotation

RFQ NUMBER	PAGE
COR61531	4

ADDRESS CORRESPONDENCE TO ATTENTION OF:
TARA LYLE
304-558-2544

VENDOR
RFQ COPY
TYPE NAME/ADDRESS HERE

GAI Consultants, Inc.
300 Summers Street, Suite 1100
Charleston, WV 25301

SHIP TO
DIVISION OF CORRECTIONS
ST. MARYS CORRECTIONAL CENTER
(COLIN ANDERSON CENTER)
STATE ROUTE 2
ST. MARYS, WV
26170 304-558-2036

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
04/20/2012				

BID OPENING DATE: 06/12/2012 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT

PLEASE PROVIDE A FAX NUMBER IN CASE IT IS NECESSARY TO CONTACT YOU REGARDING YOUR BID:

304-926-8180

CONTACT PERSON (PLEASE PRINT CLEARLY):

Charles Straley

****** THIS IS THE END OF RFQ COR61531 ****** TOTAL:

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
Charles Straley	304.926.8100	June 19, 2012

TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE
Engineering Manager	25-1260999	

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

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

Request for Quotation

RFQ NUMBER	PAGE
COR61531	1

ADDRESS CORRESPONDENCE TO ATTENTION OF:
TARA LYLE
304-558-2544

VENDOR
RFQ COPY
TYPE NAME/ADDRESS HERE
GAI Consultants, Inc.
300 Summers Street, Suite 1100
Charleston, WV 25301

SHIP TO
DIVISION OF CORRECTIONS
ST. MARYS CORRECTIONAL CENTER
(COLIN ANDERSON CENTER)
STATE ROUTE 2
ST. MARYS, WV
26170
304-558-2036

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
05/31/2012				

BID OPENING DATE: 06/12/2012 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
				ADDENDUM NO. 1		
				1. QUESTIONS AND ANSWERS ARE ATTACHED.		
				2. ADDENDUM ACKNOWLEDGEMENT IS ATTACHED. THIS DOCUMENT SHOULD BE SIGNED AND RETURNED WITH YOUR BID. FAILURE TO SIGN AND RETURN MAY RESULT IN DISQUALIFICATION OF YOUR BID.		
				END OF ADDENDUM NO. 1		
0001	1	JB		906-00-00-001 ARCHITECT/ENGINEERING SERVICES, PROFESSIONAL		
				****** THIS IS THE END OF RFQ COR61531 ****** TOTAL:		

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
Charles Shaffer	304.926.8100	June 19, 2012

TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE
Engineering Manager	25-1260999	

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

EXHIBIT 10

REQUISITION NO.: COR61531

ADDENDUM ACKNOWLEDGEMENT

I HEREBY ACKNOWLEDGE RECEIPT OF THE FOLLOWING CHECKED ADDENDUM(S) AND HAVE MADE THE NECESSARY REVISIONS TO MY PROPOSAL, PLANS AND/OR SPECIFICATION, ETC.

ADDENDUM NO.'S:

NO. 1 ✓

NO. 2 .....

NO. 3 .....

NO. 4 .....

NO. 5 .....

I UNDERSTAND THAT FAILURE TO CONFIRM THE RECEIPT OF THE ADDENDUM(S) MAY BE CAUSE FOR REJECTION OF BIDS. VENDOR MUST CLEARLY UNDERSTAND THAT ANY VERBAL REPRESENTATION MADE OR ASSUMED TO BE MADE DURING ANY ORAL DISCUSSION HELD BETWEEN VENDOR'S REPRESENTATIVES AND ANY STATE PERSONNEL IS NOT BINDING. ONLY THE INFORMATION ISSUED IN WRITING AND ADDED TO THE SPECIFICATIONS BY AN OFFICIAL ADDENDUM IS BINDING.

Charles Straley
SIGNATURE

GAI Consultants, Inc.
COMPANY

June 19, 2012
DATE

REV. 11/96

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

Request for Quotation

RFQ NUMBER	PAGE
COR61531	1

ADDRESS CORRESPONDENCE TO ATTENTION OF:
TARA LYLE
304-558-2544

VENDOR
RFQ COPY
TYPE NAME/ADDRESS HERE
GAI Consultants, Inc.
300 Summers Street, Suite 1100
Charleston, WV 25301

SHIP TO
DIVISION OF CORRECTIONS
ST. MARYS CORRECTIONAL CENTER
(COLIN ANDERSON CENTER)
STATE ROUTE 2
ST. MARYS, WV
26170 304-558-2036

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
06/07/2012				

BID OPENING DATE: 06/19/2012 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT

ADDENDUM NO. 2

1. THIS ADDENDUM ISSUED TO ADD TERMS AND CONDITIONS PER THE ATTACHED.

2. TO MOVE THE BID OPENING DATED FROM 06/12/2012 TO 06/19/2012.

3. ADDENDUM ACKNOWLEDGEMENT IS ATTACHED. THIS DOCUMENT SHOULD BE SIGNED AND RETURNED WITH YOUR BID. FAILURE TO SIGN AND RETURN MAY RESULT IN DISQUALIFICATION OF YOUR BID.

END OF ADDENDUM NO. 2

0001	1	JB		906-00-00-001		

ARCHITECT/ENGINEERING SERVICES, PROFESSIONAL

****** THIS IS THE END OF RFQ COR61531 ****** TOTAL:

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
Charlie Straley	304.926.8100	June 19, 2012

TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE
Engineering Manager	25-1260999	

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

EXHIBIT 10

REQUISITION NO.: COR61531

ADDENDUM ACKNOWLEDGEMENT

I HEREBY ACKNOWLEDGE RECEIPT OF THE FOLLOWING CHECKED ADDENDUM(S) AND HAVE MADE THE NECESSARY REVISIONS TO MY PROPOSAL, PLANS AND/OR SPECIFICATION, ETC.

ADDENDUM NO.'S:

NO. 1 .....

NO. 2 ✓

NO. 3 .....

NO. 4 .....

NO. 5 .....

I UNDERSTAND THAT FAILURE TO CONFIRM THE RECEIPT OF THE ADDENDUM(S) MAY BE CAUSE FOR REJECTION OF BIDS. VENDOR MUST CLEARLY UNDERSTAND THAT ANY VERBAL REPRESENTATION MADE OR ASSUMED TO BE MADE DURING ANY ORAL DISCUSSION HELD BETWEEN VENDOR'S REPRESENTATIVES AND ANY STATE PERSONNEL IS NOT BINDING. ONLY THE INFORMATION ISSUED IN WRITING AND ADDED TO THE SPECIFICATIONS BY AN OFFICIAL ADDENDUM IS BINDING.

Charles Straley
SIGNATURE

GAI Consultants, Inc.
COMPANY

June 19, 2012
DATE

REV. 11/96

RFQ No. COR61531

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

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

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

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

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

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

WITNESS THE FOLLOWING SIGNATURE

Vendor's Name: GAI Consultants, Inc.

Authorized Signature: Charles Straley Date: June 19, 2012

State of West Virginia

County of Kanawha, to-wit:

Taken, subscribed, and sworn to before me this 19 day of June, 2012.

My Commission expires October 28, 2012.

AFFIX SEAL HERE

NOTARY PUBLIC Carol A. Moore

OFFICIAL SEAL
NOTARY PUBLIC
STATE OF WEST VIRGINIA
CAROL A. MOORE
P. O. Box 4564
Charleston, WV 25364
My Commission Expires Oct. 28, 2012

Table of Contents

1.0 Introduction

GAI was founded in 1958 in Pittsburgh, Pennsylvania. Beginning as a staff of six engineering graduates that provided highly specialized geotechnical and structural engineering services, the Pittsburgh office has grown into a multidiscipline engineering and environmental operation. Today, GAI has over 800 employees located in 30 offices throughout the Northeast, Midwest and Southeast regions of the United States, including a fully staffed office in Charleston, West Virginia. At GAI, we use our engineering experience and our knowledge of regulatory processes to transform ideas into reality with solutions that make a real difference to our clients, offering solutions in energy, transportation, real estate, water, government, industry, and healthcare.

GAI's continued growth and reputation has been developed and nurtured by our devotion to provide high quality deliverables, focus on customer service and needs, building strong professional relationships, and holding high ethical standards.

GAI will serve as the prime consultant for performing the required services at the St. Mary's Correctional Center, St. Mary's, West Virginia. We will team with Insight Pipe, Inc. and Mckinley & Associates. Insight will perform work specifically involving municipal and stormwater sewer portions of the project. Insight also will provide televising/video recording, cleaning, and mapping of both the sanitary and storm sewer systems. McKinley & Associates will provide architect related services required for a successful project. We will listen carefully to your goals and concerns. We will evaluate existing issues; develop corrective solutions and alternatives to allow the WVDOC to make full, informed decisions. Our managers will focus on completing your project with a clear, straightforward approach. With a practiced staff of engineers, scientists, and other professionals, GAI approaches every endeavor with enthusiasm and integrity. And because we carefully match our staff credentials to meet your needs, we build productive and effective relationships. Your challenge has become ours, and we deliver success.

INSIGHT PIPE CONTRACTING

McKINLEY & ASSOCIATES
ARCHITECTS • ENGINEERS • INTERIOR DESIGN

Our full-service environmental staff includes engineers, geologists, hydro-geologists, soil scientists, biologists, ecologists, planners, GIS specialists, chemists, and industrial hygienists. They embrace the environmental elements of projects with strong backgrounds in academic training, research experience, and practical engineering skills. This has been GAI's foundation for addressing complex environmental problems and enables us to move clients efficiently through the permitting, planning, and design processes.

2.0 Experience

The GAI team is uniquely qualified to provide consulting engineering services associated with this Expression of Interest. Our large local presence combined with our national resources will benefit the WVDOC during the execution of these projects. We offer unsurpassed experience in Civil, Environmental, Electrical, Geotechnical, and Structural Engineering design projects and a history of delivering value added service to our clients. Although not specifically requested, we have attached brief summaries of the services anticipated during the course of this project. These summaries are included in the **Appendix B. Service Summaries**.

GAI has provided design, analysis, or other support services on a variety of similar projects. These project scopes include an overview of potential services that the WVDOC may consider relevant to this project.

2.1 Previous Experience on Related Projects

GAI's recent experience and performance record in organizing a project team and **efficiently producing a quality product under time-sensitive schedules** offers considerable evidence of GAI's capabilities and commitment to quality and innovation. The following projects are examples of projects that we have provided services.

2.1.1 Wastewater Treatment, Sewer, and Fats, Oil & Grease (FOG) Experience

WV Division of Corrections, Anthony Correctional Center, Neola, WV

GAI, through Silling Associates, performed an evaluation and design upgrade of wastewater treatment plant and lift pump station in response to West Virginia's Department of Environmental Protection (WVDEP) Notice of Violation. GAI was asked to assist the WVDOC achieve compliance at the sewage treatment plant. GAI developed a compliance strategy and schedule to bring the facility back into compliance with WVDEP guidelines and regulations. On behalf of the WVDOC, GAI submitted a compliance plan and schedule to the WVDEP. GAI prepared an Engineering Report that included recommendations to install new lift station pumps, primary screening equipment, flow and analytical monitoring devices, and other process control and safety equipment. GAI also prepared record-keeping forms, and maintenance and operating procedures to be used at the facility. Work performed included design of: concrete channel micro-strainer with in channel sewage grinder; upgrade of lift station pumps, rail systems, and controller; upgrade to surge tank pumps, rail system, ultrasonic, non-contact level control, and controller; installation of effluent ultrasonic level controller for effluent discharge monitoring, upgrade of froth spray pumps; relocation of main power transformer; and design of a backup power generator and transfer switch. GAI delivered construction cost estimate, CAD drawings, and construction specifications.

WV Division of Corrections, Huttonsville Correctional Center, Huttonsville, WV

GAI, through Silling Associates Architects, designed process improvements for the Huttonsville Correctional Facility's 200,000 gallon per day wastewater plant. The wastewater plant was constructed in the mid 1990's as part of a large expansion project. Since that time, increasing monthly flow rates, elevated wastewater temperatures, grease and trash have caused critical operational concerns. GAI worked with correctional facility staff to explore these issues and formulate a retrofit that would not adversely impact plant operations during construction. GAI initially performed extensive research to compare historical wastewater flow to precipitation events, to determine if stormwater inflow and infiltration (I&I) was a

contributing factor. Results of that study indicated that I&I was not a substantial contributor to the increased flow. The solution came in the form of a partially buried 50,000 gallon reinforced concrete surge tank/basin sized to handle the excessive peak flows noted in historical flow monitoring records.

Confidential Hospital FOG Project, Pittsburgh, PA

GAI is investigating and evaluating reported discharge violations of "fats, oil, and grease" for a Hospital in the Pittsburgh area. GAI is obtaining historical laboratory data from both the client and the regulatory body to detect possible irregularities or errors. GAI will oversee sample collection to determine possible improper sampling procedures and techniques. GAI will evaluate hospital's grease trap standard operating procedure and verify employee adherence. If engineered interventions are required, GAI will evaluate and determine feasibility of additional mechanical, physical, or new organic and/or chemical treatments.

Twilight Drive/Barlow Drive Storm Sewer, Kanawha County, WV

GAI performed professional engineering services to address a deteriorated storm sewer comprising a 120-ft. stone arch culvert, a 180-ft. stone box culvert, and 420 feet of bituminous-coated corrugated metal pipe arch. The condition of the sewer was threatening the integrity of the road surface above it and would eventually impact the flow of storm water through the structure. GAI provided a thorough investigation of the drainage structure and lateral feeds, a subsurface investigation to establish depth of rock, and a survey of the project area.

When a portion of the stone arch collapsed following a flood in the area, GAI was contacted to advance borings in the area of the collapse and determine the integrity of the collapsed structure. GAI performed an additional survey to address railroad right-of-way and required permits. GAI restructured the client's design effort to include replacement of the damaged portion of the sanitary sewer and relocation. During construction, GAI observed the work for adequate completion within the required schedule. Since this project required emergency repairs, it was completed on a fast track schedule.

City of Pittsburgh Sewer Evaluation, Allegheny County, PA

GAI performed an investigation into the capacity and condition of several sewers within the City of Pittsburgh. Sewers were internally inspected with the use of a remote video camera or by sending a diver into the pipe. Sewers investigated included: Dinwiddie Street 36" combination sewer, Carnegie Mellon 72" combination sewer, California Avenue 36" combination sewer, Ellsworth Morewood 15" combination sewer, and Merchant Street 60" combination sewer.

2.1.2 Geo-Technical and Structural Experience

Tied Back Tangent Caisson Retaining Wall – West Liberty State College, West Liberty, WV

GAI was tasked with providing geotechnical and structural solutions for the basketball arena at West Liberty State College. The arena was founded on expansive materials and was showing signs of structural deterioration due to heaving foundations. A large portion of the arena was demolished and rebuilt with an extension into the adjoining hillside. In consideration of possible risk to the adjacent Blatnik Hall, which housed the campus swimming pool and other physical education facilities, GAI was contracted to provide structural design and construction support services for a tangent caisson retaining wall. The 126-foot-long wall consisted of thirty-six 36-inch-diameter drilled shaft concrete caissons spaced 42 inches apart with two levels of tied-back post-tensioned steel strand anchors. The maximum retained height of soil was 26'3".

Federal Building Rehabilitations Project – US General Services Administration, PA and VA

GAI has worked closely with the General Services Administration to rehabilitate federal office, parking garage, and courthouse buildings requiring temporary and permanent repairs. GAI provides engineering analyses, repair recommendations, and construction management for structure rehabilitations and conversions. Using movable staging, GAI performed a close-up inspection of the brick façade of a 9-story office building, and prepared construction documents for replacement of the façade with a metal panel wall system. Another office site required temporary repair designs to address a problem with falling bricks. GAI performed destructive investigations and materials testing as part of their engineering analysis of the façade, and developed two conceptual permanent repair designs to rehabilitate the building's brickwork and metal stud backup system. GAI had previously performed an in-depth structural inspection at the same building to rehabilitate a three-story parking garage. Inspection and analysis work at the Executive Institute Complex in Virginia culminated in the development of design plans to repair the balconies of the two story structure, including addressing architectural treatments. Another condition survey was necessary to develop construction plans and specifications to convert a former mail-handling facility to a basement parking facility. That project required installation of an elevator. GAI's range of expertise in structural inspection ranges from the basement to the roof. GAI provided structural inspection and analysis to upgrade a 120-foot high antenna tower mounted on the roof of a federal building. The design plans addressed support, bracing, aviation obstructions, and lighting.

Gay Street Substation Analysis Project, Columbus, OH – American Electric Power

GAI was contracted by Underground Systems Inc. to complete a structural analysis of the American Electric Power Gay Street No. 2 Substation building for stability considering loads imposed by proposed installation of new pressurizing plant equipment. The analysis included computing reserve capacities of the reinforced concrete floor slab, structural steel beams and girders and existing connection capacities. The structure capacities were used to determine an appropriate path to follow when moving the pressurizing plant through the building to the final installation location and the appropriate temporary structural reinforcement necessary during staging. The structure was also analyzed for the operating loads of the pressurizing plant in its installed location and recommendations were provided for the structural modifications required to support the operating loads.

Historical Covered Bridge Project – County Planning Commission, Washington County, PA

Nationally Registered Day Bridge on Township Road T-339 near Route 18 was built c. 1875. It is one of 25 covered bridges remaining in Washington County, most of which are built of 19th-century plentiful and durable white oak. GAI performed an in-depth inspection and structural analysis of this 38'-long historic covered bridge, and developed plans for its restoration. The wood deck was replaced and aesthetic treatments were designed to repair the substructure. Approach roadway improvements were made to Township Road T-339 that carries the bridge over Short Creek. GAI also provided construction monitoring services for the restoration of the bridge. Critical components of the construction project included selective demolition of the existing structure as repairs were made. A new roof and a fresh coat of paint completed the restoration.

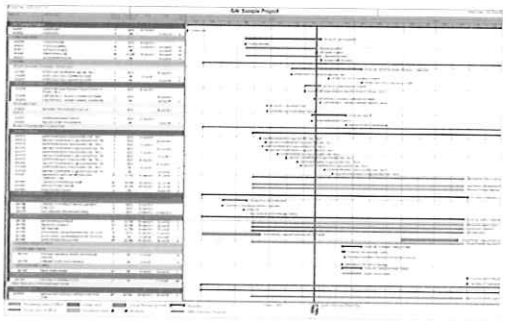
Plymouth Hall Apartment Rehab Project – Dale Corporation Philadelphia, PA

GAI provided environmental and geotechnical evaluation services, infiltration testing, and construction materials testing and inspection services for a proposed 53-unit apartment building. The Philadelphia Housing Authority (PHA) needed to rehabilitate Plymouth Hall after a fire left the building vacant for several years. Funded by the U.S. Department of Housing and Urban Development (HUD), the renovation includes 47 efficiency and 6 one-bedroom apartment units, a management office, and a 500 sf addition for a community room. GAI conducted an Environmental Phase I evaluation of the property, as well as a lead and asbestos surveys, and provided oversight during asbestos abatement activities. The new addition to the building necessitated a geotechnical engineering evaluation by GAI, and possible basement floor slab and foundation settlement issues were examined.

2.2 Project Implementation

The GAI Team brings considerable experience and qualifications to the St Mary's Correctional Center Project, especially in the key service areas identified in the Expression of Interest, specifically with geotechnical and structure investigations, wastewater and stormwater system design, permitting, bidding, specification, and construction documents, and construction management as illustrated by the following:

2.2.1 Management



Research, planning and coordination are the keys to keeping the project on schedule. Our design coordination efforts keep projects on schedule through proven scheduling and cost control operations that use Microsoft Project scheduling software. The software enables us to create a variety of scheduling/reporting formats best suited to the individual project. These schedules can be updated on a regular basis to track overall conformance, or filtered to show short-term progress. As the final schedule develops, contractors are requested to submit and review all activities involved in their work phases. Schedules are continually updated throughout the project by daily review and weekly reporting.

GAI will begin our efforts by coordinating with WVDOC staff, so that all parties understand the program's vision, goals, process, and specific requirements for documentation, reviews, and approvals. GAI will also coordinate with various permitting agencies to determine the best strategy and streamline the review process of any required permits. Once the project's parameters and process are understood, our team will begin coordinated efforts to implement the work. Tight schedules benefit from the use of current technology to streamline the transfer of information between the design team and the client to enable more frequent and timely reviews of the work product. GAI uses *Newforma Project Center* software to allow convenient client access to review progress drawings and provide input into the design process during the process. *Newforma* is project management software utilized by GAI to organize project documentation and activities. It allows GAI to have a central location where project documents can be found, and can be linked to project activities, such as meetings or submittals. The capability to track submittals is available, so that clients have access to an interface that lists the submittals they have reviewed and returned comments on and ones they have not. It also has a web-based server called, which allows clients to easily send and receive files as large as 2 GB.

The GAI Team, if required, will prepare and submit administratively complete permit packages to reviewing agencies at appropriate stages of completion as determined in our initial coordination effort. The design team will maintain communications with reviewing agencies to determine the progress of reviews and provide clarification of project elements to the reviewers.

GAI is equipped with the computer and software capabilities to provide quality project management. We are fully integrated using the following programs to enhance our abilities in the pre-construction and construction phases.

+ *Microsoft Project* – This scheduling program is an industry standard allowing detailed scheduling and updates for the best in work progress management.
+ *AutoCAD* - Allows the viewing/printing of CAD files. Time saving tool for electronic transfer of construction documents and revisions.
+ *Internet* - Our company website provides communication keeping team members accessible to expedite the transfer of information.

2.2.2 Design

Following the kickoff meeting discussions with those associated with the project and the WVDOC:

+ GAI will evaluate current conditions within food preparation areas, determine actual discharge conditions of oil and grease laden wastewater, and design appropriately sized and located grease treatment system. GAI will provide product specifications, as well as, detailed construction drawings including plan and elevation views.
+ GAI will evaluate the existing terminal manhole. An evaluation will be made to locate suitable power, and understand whether the current manhole configuration will support the installation requirements of an in-channel wastewater grinder. GAI will provide product specifications as well as detailed plan and elevation drawing views.
+ GAI will conduct a remote video investigation of the existing storm water and sewer systems to provide mapping of the system, locate and determine extent of Infiltration and Inflow (I&I) points, and determine cross connections between the two. Upon completion of the televised mapping, a suitable modification and rehabilitation plan will be developed to address all findings and regulatory requirements. To the extent possible, GAI will utilize new "cure in place pipe" (CIPP) pipe technology and expertise to address I&I issues and carry out cross connection repairs internally, in order to minimize excavation and its associated additional costs. Where excavation is required, GAI will develop an erosion and sedimentation control plan, elevation and plan view drawings, construction sequencing, and material specifications.
+ GAI will undertake a geotechnical and structural investigation to determine underlying cause(s) for current subsidence, attempt to determine extent of the damage to the existing structure, and determine the required modifications to be made to the existing soils to restore the subsidence and structure. A feasibility report summarizing the findings will be produced and submitted to the State. The report will include an opinion of probable cost associated with addressing subsidence and partial foundation collapse issues. GAI will then determine suitable corrective actions (if plausible) as well as overall construction sequencing. Our geotechnical engineers will coordinate closely with the structural engineers to allow for complete, detailed determination of possible repairs to existing facility foundation that has succumb to subsidence – a key benefit to the State of West Virginia.
+ GAI will review current requirements for backflow preventers. GAI will develop drawings and specifications for the installation and materials to be used by the contractor select.

2.2.3 Permitting

Permitting is a GAI strength. We permit multiple construction projects and nearly 200 miles of utility lines/pipelines each year. We believe that our permitting experience and permitting knowledge are unparalleled.

GAI will prepare the Erosion and Sediment Control Plan for the overall project to be included with the bidding documents in accordance with the Best Management Practices of WV DEP, and will assist Saint Mary's Correctional Center (SMCC) with obtaining a local building permit if required for the structural work. Once the scope of work is fully defined, GAI will determine what additional permits may be required and will obtain or assist in obtaining those permits.

GAI has over 30 years of experience in obtaining permits and approvals.

GAI will develop a timeline for each project describing the permitting process, submittal dates, and anticipated review periods, and to coordinate activities where approvals may be required from multiple entities. GAI will prepare administratively-complete applications, and will promptly address technical comments as they are received.

GAI has worked with numerous clients to successfully coordinate and obtain permits and approvals for stream, highway, and railroad crossings; work within highway and rail corridors; and erosion and sedimentation control approvals. GAI has

extensive experience with the specific requirements of each of the identified permit and approval entities, to help expedite the approval process.

2.2.4 Specifications:

For all of the work described above, GAI will prepare specifications in accordance with the most updated accepted standards for materials and workmanship. Specifications will include not only the furnishing and installation of the new facilities but also complete testing, startup, and training procedures. GAI will consider the operational needs of SMCC and include provisions in the specifications to keep SMCC in service during construction and to minimize disruptions to the operation of the facility during all phases of the project. Consideration will also be given to the need at all times for security and safety of the employees of SMCC, the contractor, and the inmates.

2.2.5 Environmental Evaluations and Permitting Support

If needed, GAI offers a wide variety of personnel, services, and capabilities. Since the advent of NEPA, RCRA, CWA, and other environmental laws passed in the 1960s and 1970s, we have worked closely with clients to provide practical, cost-effective solutions to environmental challenges. Our diverse range of environmental engineering services includes environmental site assessments, environmental inspection, permitting, erosion and sedimentation control, environmental compliance, assessment of threatened and endangered species, and application of computer technology and state-of-the art environmental analysis and management techniques using GIS.

2.2.6 Bidding and Contract Documents

Once the contract documents reach the appropriate stage of approval, we will prepare bid documents for distribution of prospective contractors, attend pre-bid meetings, develop responses to contractors' Request for Information, prepare addenda and review bids submitted by prospective contractors. The design team will prepare a tabulation of bids, check contractors' references and provide a recommendation of award.

GAI has extensive experience preparing bid packages for our projects for both public and private sector clients. These include multiple utility infrastructure projects for clients such as the West Virginia DEP and Division of Corrections and also the West Virginia Economic Development Authority.

2.3 Project Approach and Understanding

GAI employs highly experienced teams of engineers specializing in water, wastewater, geotechnical, structural, and electrical engineering that provide expertise as needed on each component of the project, as described below.

2.3.1 2000 Gallon Grease Trap Tank (or larger):

GAI will review available water usage, analytical, and operational data to determine the appropriate size and type of grease trap that is needed. The facility will be thoroughly reviewed to determine the best location for the grease trap considering existing equipment locations, underground lines, building configuration, and accessibility. GAI can provide full services in accurately locating existing underground sewer, water, electrical, and other utility lines using best available technologies. GAI will provide options to SMCC to decide upon the most appropriate type of grease trap to be installed, considering items such as location, cost, level of automation, and maintenance and operational costs and requirements. Considering cost, ease of coordinating the utilities, and future maintenance, we believe that it would be preferable to utilize a single grease trap. However, it may also be practical and more cost-effective to install two smaller grease traps at key locations. Final determination will be based on a thorough review of the pertinent considerations.

2.3.2 Muffin Monster:

GAI's engineers will evaluate the capacity and configuration of the existing sanitary sewer system to determine the most effective size, location, and configuration for the Muffin Monster. Factors such as cost, location, ease of maintenance, and required modifications to the existing sanitary system and facility will be fully considered. GAI's electrical engineers will provide expertise on specifying power requirements for installations at remote locations. Instrumentation and tie-ins to the existing facility monitoring system will be provided.

2.3.3 Unit #83 Storm/Sanitary Lines:

GAI's experts will locate existing utilities and will provide topographical surveying to plot the lines in AutoCAD to allow new sanitary and/or storm drains to be designed. GAI's water and wastewater engineers will review available water usage and hydrological data, and will calculate stormwater runoff flows to appropriately size and locate the new lines to handle the storm and sanitary flows most efficiently, while complying with all WV DEP and local regulations and codes. Existing lines and structures will be utilized to the greatest extent possible to minimize construction costs. Sliplining, pipe bursting, and other trenchless methods will be considered for repairs and replacements to minimize cost and disruption. The contract work will include installation and complete testing of the newly installed lines, manholes, inlets and other structures as required.

2.3.4 Unit #80 Foundation:

GAI employs teams of professional structural and geotechnical engineers who will evaluate the existing conditions by core sampling the areas around this corner of the building and conducting a thorough structural inspection and evaluation. The cause of the movement will be determined, and depending on the nature of the problem, remediation of the problem will be included in the contract work. Options for correcting the building's structural movement and for preventing future movement as needed will be determined considering cost, level of disruption to the facility, and long-term effectiveness and presented to SMCC. An option for rehabilitation may include hydraulic pressure injection of grout to raise the existing structure, which would minimize disruption to the facility and thus minimize cost. GAI will include architectural and structural specifications for repairing cracked or damaged walls and structures that have been compromised by the settling.

2.3.5 Broken/Damaged Sewer Lines:

GAI would first recommend that the sanitary lines be evaluated utilizing CCTV video inspection. GAI will review this data, along with any available smoke testing information, to determine the extent and locations of damage and thus the best method for repair. Sanitary lines may be repaired be replacing small portions of the line where problems are isolated. Additional options for repair or replacement will also be considered including sliplining, trenchless point repair and curing, and/or pipe bursting which may prove to be more economical than complete removal and replacement. These non-excavation options minimize the impacts and disruptions to the work area, and enable the repairs to be completed more quickly than traditional methods.

2.3.6 Backflow Prevention:

GAI's water engineers will include specifications detailing the furnishing and installation of backflow prevention devices on the water lines where required. Reduced Pressure Zone backflow preventers, as required by the City of St. Mary's, will be specified to be installed in accordance with local regulations and AWWA standards.

3.0 GAI's Staffing and Resources

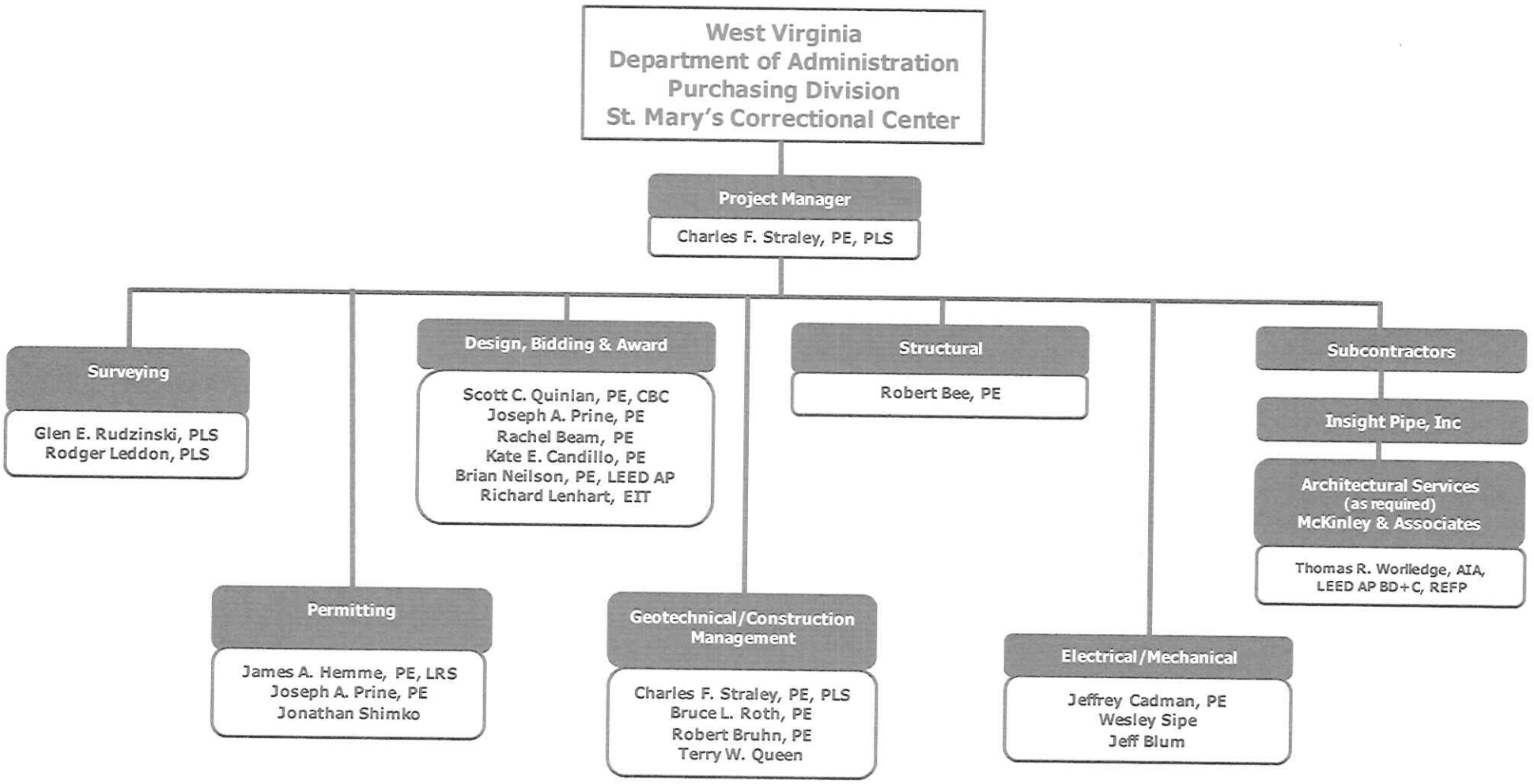
GAI has the personnel and experience to quickly, seamlessly, and successfully provide the Geotechnical, Structural, Civil, Electrical and Environmental Engineering resource needs of this project. GAI will prepare design drawings, specifications, contract, permitting plans and applications, and related documents and will provide construction administration and monitoring for the St Mary's Correctional Center Project.

GAI provides for all phases of engineering services for this multifaceted project from planning, investigative evaluation, development of best management practices, design, and construction. GAI's staff includes experienced hydrologists, geotechnical, civil, electrical, and structural professionally licensed engineers and construction management / administration / observation personnel. GAI is currently evaluating and preparing designs, construction drawings, construction specification for water and wastewater management projects at several sites in West Virginia. GAI's construction monitoring staff also is currently in the field at multiple sites in West Virginia, Ohio, Virginia, and Pennsylvania observing the construction of wastewater collection/treatment systems and stormwater management systems, and providing geotechnical and structural services.

The Organization Chart on the following page identifies the professional team for each of the major task areas associated with the St Mary's Correctional Center project. The key staff members assigned to this project are highly qualified. They represent the high level of professionalism that the GAI Team brings to this and every project. These individuals are committed to partnering with WVDOC for this capital improvements project.

The GAI team is very aware of WVDOC's need to receive quality services in a timely and cost-effective manner. Our team has the capacity to successfully perform this project utilizing local staff. The organizational chart shows the six discipline leaders with several other qualified, experienced professionals available depending on project needs. Resumes for the project team can be found in **Appendix A. Resumes**. Any member of the team assembled for this project is capable of functioning as a project or task assignment leader depending on the type of services required.

3.1 Organizational Chart



3.2 Program Management

Charles F. Straley, PE, PLS – Project Manager.

Overall project management responsibility for this project will be performed by Mr. Charles F. Straley, P.E., P.L.S. Mr. Straley's 24 years of experience in both public and private sector work has enabled him to focus keenly on issues of concern to the client. In the role of project manager, he will serve the DOC's interest by coordinating and managing all fiscal and personnel aspects of the project. He is the project manager for several projects with the WVDEP-AML and LCAP programs. Mr. Straley was project manager for the South Ruffner Stormwater Drainage project for the City of Charleston and Town of Gauley Bridge as well as numerous other water and wastewater management projects. Mr. Straley was involved in the Mill Creek Regional Water Supply Extension Project, Cow Creek-Sarah Ann Water Supply Extension Project and Godby Branch Water Supply Extension Projects. Mr. Straley has experience in construction management/ administration. He will be the project manager oversight and management of GAI's engineering and construction monitoring personnel. Mr. Straley has a Masters of Civil Engineering degree in Geotechnical Engineering.

Scott C. Quinlan, PE, CBC – Design, Bidding, and Award.

Mr. Quinlan specializes in water and wastewater engineering, water resource planning, alternative water supply and project funding. He has strong project management skills in addition to his process engineering capabilities. Mr. Quinlan is also responsible for client management, utility valuation, and development of municipal capital improvement programs for both water and wastewater systems. Mr. Quinlan has experience with WVDOC projects and is familiar with requirements of working in the corrections environment, as well as, design and project management requirement.

James Hemme, PE, LRS – Permitting.

Mr. Hemme specializes in site engineering, including planning, permitting, and stormwater management. Mr. Hemme designs stormwater management systems, site developments ranging from 1 acre to over 60 acres in size, and wetland mitigation areas. He prepares geotechnical reports, flood plain modeling, highway and roadway designs, right-of-way plans, detailed construction plans, and cost estimates for projects ranging from $10,000 to over $2 million in construction cost. Mr. Hemme is also competent in geotechnical engineering, environmental disciplines including NEPA compliance, and transportation services. He has worked extensively with private developers, architects, municipalities, and government agencies. Mr. Hemme has worked on landfills, quarries, mines, and industrial and commercial sites and facilities. He has performed numerous Phase 1 Environmental Site Assessments (ESAs) providing solid waste, industrial waste, and Erosion and Sediment (E&S) control permitting.

Joseph A. Prine, PE – Design, Bidding & Award.

Mr. Prine will coordinate the daily activities for the project. Mr. Prine has 10 years of experience related to infrastructure projects. He is correctly coordinating the existing projects for the WVDOC. Mr. Prine has provided similar activities for our other projects with the WVDOC.

Rachel Beam, PE – Senior Project Engineer.

Ms. Beam specializes in water resources engineering, including design and construction management for civil engineering projects. Her work has included analysis, permitting, specifications preparation, and contract administration. She has experience working with both public and private sector clients on various types of water resources jobs.

Bruce L. Roth, PE – Geotechnical Engineering

Mr. Roth specializes in foundation analysis and design, slope stability analysis and design, rock and soil mechanics, subsurface exploration, geophysical investigation techniques, and geo-synthetics. He provides geotechnical engineering services for dam and building foundations, and the geotechnical aspects of transportation projects. Mr. Roth specializes in earthquake induced permanent ground deformations and the effects on lifeline facilities. His research work at Cornell University included evaluating earthquake induced ground failure from soil liquefaction and surface faulting, and assessing buried lifeline response to large soil deformation.

Robert W. Bruhn, PE – Geotechnical Engineering

Mr. Bruhn specializes in geotechnical engineering, particularly subsidence above active and abandoned mines and in mining-related activities. He has studied subsidence above mines in Pennsylvania, West Virginia, Ohio, Kentucky, Illinois, Virginia, the United Kingdom, and India. Mr. Bruhn is a nationally recognized expert in subsidence engineering and has written numerous technical articles that have been published concerning subsidence, and its effects on structures and on the ground water regime.

Robert R. Bee, PE – Structural Engineering

Mr. Bee specializes in structural engineering design of buildings and other structures, and structural computer analysis and design, with over 20 years of experience. He also specializes in the design of structural components for highway and roadway structures including earth and water retention wall systems, stormwater control structures, tollbooths, and service plaza structures. Mr. Bee's professional experience covers construction of reinforced concrete on metal deck on steel joist, supported by structural steel beams and columns on spread footings; and construction of pre-stressed concrete roof planks on reinforced concrete masonry walls on spread footing.

Mr. Bee's experience with structures and structure components includes masonry buildings, steel decks, bar joint roof systems, pre-stressed joists, reinforced slab floor and roof systems, shear walls, ridge frame building systems of masonry, reinforced concrete and steel. His experience with bridge and retaining wall structures includes prestressed AASHTO beams, flat slab, pile caps, piling, slab, abutment. His experience with retaining wall structures includes masonry, sheet piling, reinforced concrete, reinforced earth, and gravity walls.

Wesley J. Sipe – Mechanical Design Manager

Mr. Sipe specializes in mechanical engineering support. He has designed customized industrial water and wastewater treatment solutions primarily for the power industry. Other clients included food/beverage manufacturing and microprocessor electronics industry.

Jeffrey G. Blum - Senior Project Electrical Technical Specialist

Mr. Blum specializes in electrical, electronic, and control systems engineering. He has extensive experience providing research, testing and development, and design for major manufacturing firms. PLC Systems by: Allen Bradley PLC-5, SLC100,150,500, Control Logix Series Controllers, Siemens, Mitsubishi, TI, and Siemens S7,S5, Allen Bradley, Mitsubishi and Siemens Drives. Alstom DC Drives, and Fip Level 1 systems. Networks: DH+, Siemens, H1, TCP/IP, RSLinx, and Melsecnet. Languages: C, Assembly, FORTRAN, and BASIC. Software: P-Spice, Tutsum, Siglab, Monarch, MatLab Wonderware MMI, Intilution iFix, RSView32, RSView Supervisory Enterprise, Studio, Factory Link, and Altom Pilot

Joseph J. Kuhel - Senior Lead Project Designer

Mr. Kuhel specializes in electrical and process systems for construction of industrial, commercial, mining, chemical, petro-chemical, nuclear, and coal power industries. He has developed construction drawings utilizing AutoCAD Version 2008 and MicroStation V8 from customer specifications and vendor information. Mr. Kuhel has prepared scopes of work, man-hour estimates, and material take-off requisitioning and purchasing for large industrial projects. He has 35+ years design experience.

Glen E. Rudzinski, PLS - Survey, Mapping.

Mr. Rudzinski oversees and directs GAI survey crews and personnel. His lengthy resume of survey projects includes a wide range of survey efforts from managing of smaller waterline replacement project surveys to directing a utility easement survey for a 16-mile discharge pipeline. Mr. Rudzinski specializes in preparing ALTA/ACSM Land Title surveys and subdivision plans for site development and rails to trails projects. He has office and field experience in construction stakeout, survey computations, cut sheets, and utility layout.

3.3 Subcontractors

GAI will team with:

+ **Insight Pipe, Inc.** to perform sewer video televising, mapping, and rehabilitation. Insight Pipe Contracting, L.P. is a full service, sewer maintenance contractor. The company has grown to over 40 employees and a headquarters second to none in the industry. Insight **specializes in Trenchless Rehabilitation:** Cured-in-Place Pipe Linings, Cured-in-Place Point Repairs, Fold and Form Pipe Linings, and Manhole Rehabilitation. Insight also will provide **Inspection and Cleaning Services:** Internal Video Inspection, Combination Vacuum/Jet Cleaning, Smoke and Dye Testing, Manhole inspection, and Mechanical Bucket Machines.
+ **McKinley & Associates** to provide Architectural Services, as required. Founded in 1981, McKinley & Associates is a multidiscipline full service Architectural & Engineering firm, offering comprehensive professional services in architecture, engineering, commissioning, interior design and construction administration. We have a broad range of skill and experience for projects involving governmental, judicial, commercial, educational, medical, religious and more.

GAI will competitively secure the services of qualified subcontracting services for any ancillary services needed such as core drilling.

4.0 Construction Management

Construction Management solutions have become a critical component to realizing project success. GAI's practical, comprehensive solutions are supported by over 50 years of experience and a multi-disciplined approach, which enables us to customize our work per client, per project. We help provide the protection required to ensure that our clients' projects are completed on time, under budget, and to a high degree of quality. Our broad range of engineering expertise in the water and wastewater, structural, geotechnical, civil, electrical, and environmental areas provides our team with the ability to work for a wide array of clients offering comprehensive services before the project has started, during the project's multiple phases, and after the project has been successfully completed. Specifically for the St. Mary's Correctional Project, we envision performing the following services:

+ Pre-construction condition surveys
+ Geotechnical investigation
+ Structural analysis
+ Sewer televising and mapping
+ By-Pass Pumping
+ Development of project/construction management plans
+ Bid evaluation
+ Resident and office engineering
+ Inspection
+ Scheduling and Cost estimating
+ Compliance monitoring and Document control
+ As-built documentation
+ Claims avoidance, analysis and mitigation
+ Project closeout

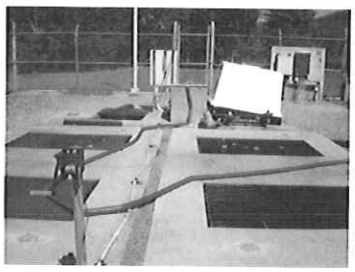
The GAI Team offers:

- Successful experience with previous projects including three for the Division of Corrections, State of West Virginia.
- A large local presence combined with our national resources. This includes a staff of 26 in Charleston, WV, near the Division of Corrections and approximately 100 miles from the project site.
- Extensive design experience in wastewater and stormwater systems.
- A highly qualified Geotechnical, Environmental, and Structural Engineering and Inspection team dedicated to complete projects on-time/on-budget and to a high degree of quality.

GAI has construction inspection staff that is experienced in providing oversight of construction and sewer infrastructure projects. Our personnel observe all phases of construction and project implementation to verify compliance with the provisions of contract documents and document materials and quantities for pay application review and evaluation of contractor change orders. Our field-staff work closely with our engineers in the event of difficulties or adjustments that must be made in the field because of unforeseen conditions. We also work closely with our clients and regulatory agencies to assure that projects are completed satisfactorily.

Planning throughout the project is based on the fact that construction projects are dynamic, ever changing business. GAI's ability to receive information quickly though multiple media (office phone, cellular, email, texts) sources enables our staff to make timely decisions as to the best alternatives or course of action. GAI provides our management services with the knowledge that a quick reaction is important to keeping a project on track.

5.0 Summary and Closing



Why GAI?

The GAI Team offers several distinct advantages associated with delivery of the services proposed herein.

+ GAI is familiar with needs and requirements, and has successfully completed the design of several projects for the Division of Corrections including:
  - Anthony Correctional Facility Potable Water Treatment Plant, Greenbrier County, WV
  - Anthony Correctional Center Sewage Treatment Plant Improvements, Greenbrier County, WV
  - Huttonsville Correctional Facility Waste Water Treatment Plant Improvements, Randolph County, WV
+ GAI has a highly experienced, multidiscipline engineering staff to provide the required quality on time-oriented tasks of this project as well as provide for design, CAD drawings, scheduling, permit requirements, construction monitoring, and construction/contract management.
+ GAI is client-focused with emphasis on quality, integrity, and ethical values.
+ The GAI Team's Project Implementation will specifically meet the unique needs of this project.
+ GAI's knowledge of working and developing specifications for "inside the fence" activities.

Thank you for your consideration!
We are prepared to begin work on the project immediately!

Appendix A

Resumes

Charles F. Straley, PE, PLS
Engineering Manager

Education

M.S. Geotechnical Engineering 1988, University of Akron

B.S. Civil Engineering 1986, University of Akron

Registrations/Certifications

Professional Engineer, WV, No. 11842
Professional Engineer, OH, No. E-59790,
Professional Engineer, KY, No. 19097

Professional Engineer, IN

Professional Licensed Surveyor, WV, No. 1888

Relevant Training/Courses

Leaders to Watch, GAI Consultants, Inc., 2011

Advanced Project Management Training, GAI Consultants, Inc., 2009

Troxler Certified

40-hour Health and Safety Training

8-hour Supervisor Health and Safety Training

Affiliations

National Society of Professional Engineers, Member

Society of American Military Engineers, Member

Professional Employment History

University of Akron, Private Consulting and Testing, 1986-1987

R&W Contracting and Excavating, Inc., Summers, 1982-1984

West Virginia University Library, 1981-1982

Professional Summary

Mr. Straley specializes in civil engineering with an emphasis in geotechnical engineering, including all aspects of subsurface exploration, laboratory testing, foundation and embankment design, slope stability, material and construction specifications, and construction administration, management and monitoring.

Professional Experience

Civil and Geotechnical Engineering

+ Assistance and management of wetland mitigation including determination of existing wetlands acreage disturbed and reconstruction of wetlands. Mettiki Coal Corporation
+ Assistance in reevaluating a plug and dike design to optimize construction by minimizing the number, length, and cross-sectional area without compromising structural integrity or limiting storage capacity. Americoal Development Company
+ Assistance with drawdown field test and well yields and/or recharge analysis for over 15 wells. Peabody Coal Company; Southern Ohio Coal Company; and Eighty-Four Mining
+ Assistance with identifying ground water and surface water monitoring points including discussions with the regulatory agencies for deep mines in Boone County, West Virginia and western Pennsylvania. Hobet Mining Company; Cyprus Emerald; and Cyprus Cumberland
+ Assistance with the Nile Stone Slurry Impoundment in Mingo County, West Virginia. Design consisted of grading channels, culverts, and roads. Old Ben Coal Company
+ Assistance with the preparation of construction documents for an earthen dam. Project includes evaluation of existing drainage structures, stormwater routing analysis, design of earth embankment, and design of a principle and emergency spillway. Lake Chaweva Homeowners Association
+ Assistance with the sampling of sludge ponds in Institute, West Virginia. Rhone Poulenc AG
+ Completed a permit revision application for additional area to be deep mined by long wall in Monongalia County, West Virginia. The application included geology, hydrogeology and subsidence control plan sections of a surface mine application. A ground water inventory and water samples were collected and analyzed for structures above the area to be mined. Eastern Associated Coal Corp. - Federal No. 2 Mine
+ Completed the geology and hydrogeology sections for a new deep mine permit application in Logan County, West Virginia. Completed stability analysis for various slopes in different portions of the permit application.

+ Evaluation of expansive slag problems. Citizen General Hospital and Armco
+ Godby Branch Water Supply Extension, Logan County, West Virginia. In charge of geotechnical investigation and foundation design for water supply structures for the Godby Branch Water Supply Extension project. Project included subsurface investigation; surveying; design of water tank, booster station, and approximately 2.5 miles of water line; preparation of technical specifications, drawings, and engineer's cost estimate; and participation in pre-bid and pre-construction meetings. Bid construction cost was approximately $680,000.
+ Kingwood 52/6 Water Extension in Preston County, West Virginia. The scope of work included design of 13 miles of waterline, one water storage tank, and one booster pump station, subsurface investigations, and special considerations for high pressures. Work included preparation of drawings, technical specifications, engineer's cost estimate, and preparation of applicable permit applications.
+ Managed a waste characterization study to determine the type of waste and per capita generation at four landfills in West Virginia. West Virginia Solid Waste Management Board
+ Managed, reviewed, and performed over 400 pre-subsidence and pre-blast surveys in West Virginia, Ohio, Maryland, and Pennsylvania. Green Valley Coal; Elk Run Coal; Peabody Coal; Eastern Associated Coal Corp.; Southern Ohio Coal Co.; Wyoming Pocahontas Coal; Mettiki Coal Corporation; and 84 Mining
+ Mill Creek Regional Water Supply Extension in Logan County, West Virginia. The scope of work included construction of water transmission lines, a water distribution system, two water storage tanks, a booster station, two hydropneumatic tanks, and a water treatment plant. The total length of water line to be constructed is approximately 34 miles. The project included design of: site drainage (including channels and culverts), site grading, redesign of West Virginia Route 12 (including approval from West Virginia Division of Highways), subsurface investigations, preparation five railroad crossing permits, West Virginia Division of Highways occupancy permit, West Virginia Division of Environmental Protection (West Virginia Department of Environmental Protection) permit, West Virginia Office of Environmental Health (WVOEH) permit, West Virginia Public Lands Corporation permit, and United States Corps of Engineers permit. Numerous meetings with the West Virginia Department of Environmental Protection, LCPSD, West Virginia Public Service Commission, and the WVOEH were required during the project. GAI coordinated water line alignment work with the LCPSD and numerous other utility companies to avoid conflicting the location of the existing utility lines and proposed water transmission line and distribution system The scope of work also included the design of a steel tank pre-sedimentation basin, adsorption clarification/filtration treatment units with a total 3,000 GPM capacity, a pretreatment chemical feed system (including metering pumps, chemical mixers, solution tanks, and in-line mixers), water intake pumps, a decant basin (including excavation, foundations, walls, piping, etc.), sludge drying beds, a post treatment chemical feed system, clearwell and baffle assembly, and the treatment plant building. The water treatment plant was designed to provide 400 GPM of potable water.

Karst

+ Geotechnical project engineer for the replacement of Easley Bridge in Mercer County. Responsibilities included management of subsurface investigation and foundation design. Included in the design was the investigation and stabilization of an abutment located on Karst limestone. West Virginia Division of Highways
+ Design of an upgrade and realignment for a county road in Garrett County, Maryland. Design includes alignment, drainage structures, wetland delineation, and quantities and cost estimate. Mettiki Coal Company
+ Design of foundations for the Williamstown-Marietta Bridge over the Ohio River in Wood County and Tygart Valley River Bridge on Corridor H in Barbour and Randolph Counties. West Virginia Division of Highways
+ Design of geotechnical concerns for a railroad alignment in Nicholas County, West Virginia. Design included recommendations for alignment, cut and fill slopes and retaining walls. The railroad included three stream crossings and foundation recommendations were prepared for each.

Scott C. Quinlan, PE, CBC
Director – Water Resources Engineering & Planning – Northeast Region

Education

M.S. Environmental Engineering 1988, University of Florida

B.S. Civil Engineering 1987, University of Florida

Registrations/Certifications

Professional Engineer, FL, PA

Certified Building Contractor, FL, No. CBC1255726

Real Estate Broker, FL, No. BK658659

Relevant Training/Courses

MSHA 24 Hour Surface & Construction Training, 2011

Leaders to Watch, GAI Consultants, 2010

Management and Leadership Skills Training, GAI Consultants, 2009, 2010

High Performance Management Training, GAI Consultants, 2009

Ultimate Project Management Training, GAI Consultants, 2009

Affiliations

American Society of Civil Engineers

Water Environment Federation

American Water Works Association

Engineers Society of Western PA

Southwestern PA Engineering Outreach

Pennsylvania Rural Water Association

Professional Employment History

IMS Construction, 2005-2008

Warner-Quinlan, Inc., 2003-2006

Quinlan & Associates, Inc., 1997-2003

Hartman & Associates, Inc., 1991-1997

Dyer, Riddle, Mills & Precourt, Inc., 1984-1991

Professional Summary

Mr. Quinlan specializes in water and wastewater engineering, water resource planning, alternative water supply and project funding. He has strong project management skills in addition to his process engineering capabilities. Also, Mr. Quinlan is responsible for client management, utility valuation, and development of municipal capital improvement programs for both water and wastewater systems.

Professional Experience

Energy

+ GenOn Energy, Conemaugh Power Plant Wastewater Engineering and Design in Indiana County, Pennsylvania for Kirkpatrick & Lockhart Preston Gates Ellis LLP. Wastewater plant engineering and design at GenOn's Conemaugh Generating Station. Assisted in the preparation of technical specifications and bid documents for competitive bidding. Provided construction management support and reviewed contractor submittals. Assisted in the preparation of final record drawing package and operation and maintenance documents for the completed system.
+ GenOn Energy, Keystone Power Station Wastewater Discharge Pipeline in Armstrong County, Pennsylvania. Permitting, design, construction monitoring, and construction management of 15-mile pipeline project. Provided system review and assistance with improving the performance of the "pig-catcher" filtration system resulting from changes in water quality.
+ Hatfield Power Station Sewage Treatment Study in Greene County, Pennsylvania for Allegheny Energy, Inc. Evaluation of on-site and off-site sewage treatment alternatives. Completed sewage treatment investigation including the feasibility of alternative sewage treatment methods and associated construction costs. This included consulting local publically owned treatment works and venders.
+ Allegheny Energy Supply Company, Inc. Feasibility study and conceptual design of a Containerized Filtration System to remove suspended solids from the Haul Road Stormwater Management Pond at the Fort Martin Power Station in Monongalia County, West Virginia. Provided system review of conceptual design documents prepared by TIGG Corporation, Oakdale, Pennsylvania for the system.
+ GenOn Energy. Alternatives assessment for the Bangor Ash Disposal Site in Northampton County, Pennsylvania. Currently developing an alternatives assessment aimed at increasing water quality and decreasing water quantity at the disposal site to meet more stringent permit requirements. Alternatives include various stormwater management strategies, wastewater treatment technologies, outfall relocation, and modifications to existing operating procedures.

+ E.ON U.S. and Louisville Gas and Electric (LG&E), Trimble County Generating Station Landfill. Currently assisting with the design and permitting of a new 240 acre landfill for storage of coal combustion products (CCPs) produced at the Trimble County Generating Station. Managing the development of a passive leachate and sediment wastewater treatment system to meet Kentucky Division of Water permit requirements for discharge of these wastewaters.

Wastewater

+ Allegheny County Sanitary Authority (ALCOSAN), Dooker Hollow Stream Mitigation Project, Allegheny County, Pennsylvania. Developed a design plan for removing the AMD from the combined sewer system and remediating the AMD for reuse as irrigation water for the golf course. As part of this project, the team is designing an alternative energy supply source for the golf course and evaluating the installation of a wind-driven generator to power the facility. Additionally, a micro-hydroelectric generator, driven by AMD is being evaluated for feasibility.
+ Cresson Acid Mine Drainage Project, Pennsylvania Department of Environmental Protection. Bureau of Abandoned Mine Reclamation (BAMR). Project Manager on a team performing process evaluation and preliminary design for a 10.0 MGD AMD Wastewater Treatment Plant. This project involves removing excess stream flows during the rainy season, storage in a n abandoned mine and then withdrawn to augment river flows and promote fisheries.
+ West Virginia Division of Corrections (WVDOC), Anthony Correctional Center STP, White Sulfur Springs, West Virginia. Evaluation of the wastewater collection system and sewage treatment plant. Following a notice of violation by the West Virginia Department of Environmental Protection (WVDEP), GAI was contacted to evaluate the problems at the facility. Upon inspection of the facility, it was determined that the wastewater collection system had numerous points of inflow and infiltration into the system as well as a failing pump station and the sewage treatment plant had numerous operational, maintenance and safety deficiencies. GAI negotiated a program and schedule to correct the deficiencies at the facility with the WVDEP.
+ City of Mulberry Wastewater Treatment Facility Improvements and Collection System Infiltration/Inflow Reduction. This design included the addition of a wastewater influent equalization basin at the WWTF to attenuate flow surges to the wastewater reactor basins and/or addition of equipment and reconfiguration of flow basins, reconfiguration of the WWTF existing basins for optimal treatment efficiency, and addition of instrumentation for process monitoring at the WWTF. The existing biological treatment was enhanced through the monitoring of dissolved oxygen and/ or SBR cycle times. The design also included the addition of solids modifications at the WWTF by conversion of the existing chlorine tank to a solids holding tank and the design of a rotary drum thickener with the appropriate instrumentation. Additionally, a collection system infiltration/inflow reduction program consisting of several repair methods including pipe lining, joint repair, manhole & lift station repair, etc. was developed. Mr. Quinlan acted as client liaison and provided QA/QC review.
+ project included forced mains, pump stations, reuse mains and a 6 MGD Advanced WWTP. At the time of bidding, this was one of the cost effective advanced WWTP in the state. Mr. Quinlan was the engineer of record for this project.
+ The Utilities Commission City of New Smyrna Beach. Using an existing 6-inch monitoring well, reclaimed wastewater was injected into a brakish zone in the intermediate aquifer, held, and then withdrawn to determine its suitability for development of an aquifer storage and recovery well. Funding, permitting, hydro-geological studies, design of pilot testing facilities, field testing, and monitoring were completed for the project.

James A. Hemme, PE, LRS

Senior Engineering Manager / Assistant Office Manager

Education

M.B.A. Point Park University, Currently Enrolled

B.S. Civil Engineering 1989, West Virginia University Institute of Technology

Marshall University Graduate College, Environmental Engineering Coursework

Registrations/Certifications

Professional Engineer: WV, No. 12195; KY, No. 25437; OH, No. 72851; IN, No. 10809277; PA, No. 75494; NY, No. 85794

Licensed Remediation Specialist, WV, No. 003

Relevant Training/Courses

Harvard Leadership Development Training, GAI Consultants, Inc., 2010

Advanced Project Management Training, GAI Consultants, Inc., 2009

Leaders to Watch Program, GAI Consultants, Inc., 2008

OSHA 40 hour HAZWOPER Training

NICET 1 Geosynthetics Installation Inspection (expired)

Nuclear Density Gage Training, DOT and NRC (expired)

MSHA Safety Training (expired)

Professional Employment History

Environmental Design Group, 2000-2006

Potesta and Associates, 1997-2000

Terradon Corporation, 1995-1997

Joyce Engineering, 1990-1995

Dewberry and Davis, 1989-1990

Professional Summary

Mr. Hemme specializes in site engineering, including planning, permitting and stormwater management, with emphasis on parks and recreation areas and streetscapes. He brings a multi-disciplinary background to projects and this enables him to see the "big picture" of what will be needed to take a project from start to finish. Mr. Hemme is also competent in geotechnical engineering, environmental disciplines including NEPA compliance, and transportation services. He has worked extensively with private developers, architects, municipalities and government agencies.

Mr. Hemme has worked on landfills, quarries, mines, industrial and commercial sites and facilities. He has performed numerous Phase 1 Environmental Site Assessments (ESAs) providing solid waste, industrial waste, and Erosion and Sediment (E&S) control permitting. Mr. Hemme designs storm water management systems, site developments ranging from 1 acre to over 60 acres in size, and wetland mitigation areas. He prepares geotechnical reports, flood plain modeling, highway and roadway designs, right-of-way plans, detailed construction plans, and cost estimates for projects ranging from $10,000 to over $2 million in construction cost.

Mr. Hemme volunteered his time and knowledge to assist with preparation of the Greater Charleston Greenway Initiative by the West Virginia Land Trust Company in Charleston, West Virginia. He authored the analysis section of the report and peer-reviewed the entire document. Mr. Hemme is a current volunteer with the Riverside South Committee, which is working with the Charleston Land Trust to beautify and possibly promote pedestrian access on the south side of the Kanawha River. He has developed schematic plans and reviewed narratives for inclusion into several progress updates to the Land Trust.

Professional Experience

Civil Engineering and Permitting

+ Site Design for over 100 different projects throughout West Virginia, Ohio, Kentucky and Pennsylvania. NEPA compliance for wetlands, streams, cultural resources, and endangered species. Phase 1 Environmental Site Assessments for a wide range of facilities.
+ Designed over 50 stormwater management systems including run-on and run-off control utilizing ditches, berms, sumps, sediment ditches, storm sewers, culverts, drop structures, ponds, energy dissipaters, etc. Work included technical specifications, cross sections, profiles, site grading detail development and hydrologic and hydraulic modeling.
+ Developed detailed designs for over 100 different ponds at multiple sites throughout West Virginia and other states, including sediment ponds, treatment ponds, leachate storage ponds, and stormwater detention

ponds. Work included hydrologic and hydraulic routing calculations, volume estimates, embankment design, treatment efficiency, dewatering calculations, etc.

+ Prepared over 50 detailed Erosion and Sediment (E&S) Control Plans for various sites throughout West Virginia, including coal mines, quarries, highways, landfills and site developments. Work included technical specifications, re-vegetation plans, temporary control details and sequencing plans.
+ Prepared numerous National Pollutant Discharge Elimination System (NPDES) Construction Stormwater Permit Applications for sites throughout West Virginia and Ohio.
+ West Virginia State College. Design of a revised stormwater system around the student union to help alleviate basement flooding issues.
+ Melinda Street Stormwater Improvements. Underground stormwater detention system and storm sewer improvements design for the City of Parkersburg, West Virginia.

Site Development and Planning

+ Coldwater Creek Distribution Center in Parkersburg, West Virginia. Wetland mitigation for a 7.5-acre area that required a detailed planting plan, pavement design and an engineers' cost estimate.
+ Ft. Boreman Development in Parkersburg, West Virginia. Utility master planning, site preparation, roadway design, permitting, and stormwater management for the proposed 170-acre Fort Boreman mixed-use development near Martown Road interchange off U.S. Route 50 in Parkersburg.
+ Chesapeake Energy Regional Headquarters in Charleston, West Virginia (LEED Project). Chesapeake Energy Field Offices in Jane Lew, West Virginia; Mount Morris, Pennsylvania; and Honey Branch, Kentucky.
+ The Pines Country Club in Morgantown, West Virginia.
+ Dow Chemical South Charleston Plant Entrance, Parking and Pedestrian Improvements in West Virginia.
+ Tamarack Phase 2 Expansion in Beckley, West Virginia.
+ Morgan County Courthouse Replacement in Berkeley Springs, West Virginia. Greenbrier County Courthouse Annex and Expansion in Lewisburg, West Virginia.
+ Marshall University Clinical Outreach and Education Center, Huntington, West Virginia.
+ Cheat Landing Office Park in Morgantown, West Virginia. The Villages at Cheat Landing in Morgantown, West Virginia
+ Almost Heaven Habitat for Humanity, South Fork Crossing Subdivision, Pendleton County, West Virginia.

Waste Water and Potable Water Design

+ National Radio Astronomy Observatory. Designed unique, non-mechanical, award-winning treatment system that uses no electricity and treats the entire campus wastewater load.
+ Manufactured Housing Development Waterline Replacement. Designed over 5 miles of water line within an existing 1000+-unit manufactured housing development.
+ Huttonsville Correctional Facility. Provided retrofit design for temperature, grease and trash issues.
+ Anthony Correctional Center. Designed package water treatment plant for correctional facility.
+ St. Mary's Correctional Facility. Retrofit design to address trash and grease issues.

Project Awards

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

Joseph A. Prine, EI
Project Engineer

Education

B.S. Engineering Technology, Civil Emphasis 2001, West Virginia University Institute of Technology

A.S. Drafting and Design 2001, West Virginia University Institute of Technology

A.S. Civil Engineering Technology 2001, West Virginia University Institute of Technology

Engineering Management Coursework, Marshall University

Registrations/Certifications

Engineering Intern No. 8334

NICET Certified, Engineering Technology, No. 103538

Military Awards

First Coalition Force Design Team, Commander, Tallil Air Base, Iraq

Relevant Training/Courses

Advanced Project Management Training, GAI Consultants, Inc., 2009

OSHA 40 hour HAZWOPER Training

OSHA 10 hour Construction Industry Training Program

Professional Employment History

Shaw Environmental & Infrastructure, 2006-2007

Environmental Design Group (now Floyd Browne Group), 2001-2006

Professional Summary

Mr. Prine specializes in civil engineering and site development including streetscape design and planning. He has worked with private developers, architects, municipalities and government agencies. Mr. Prine has contributed to planning and design efforts for several community improvement and streetscape projects. He provides designs for large and small sites ranging in size 1 to 40+ acres, and highways and roadways, and assists in the preparation of design and construction plans, reports and cost estimates.

Mr. Prine specializes in environmental engineering including Phase 1 reports, environmental monitoring, permitting, and design. His civil engineering/site design experience includes stormwater management system design, earthwork estimating, and water and sewer line extensions. Mr. Prine has substantial experience in site engineering and stormwater management. He has worked on various construction project sites including landfills, abandoned mines, and industrial and commercial facilities.

Professional Experience

Environmental Engineering

+ Anthony Correctional Center. Design of package water treatment plant for correctional facility.
+ Richard Mine AMD Flow Monitoring Study in Morgantown, West Virginia.
+ Spill Prevention Control and Containment (SPCC) Plans, CSX Railroad National Contract.
+ Facility Response Plans (FRP) Plans, CSX Railroad National Contract.
+ Rockport Terminal Tampa, Florida Storm Water Management Redesign, CSX Railroad.
+ Oil Discharge Contingency Plans for State of Virginia, CSX Railroad National Contract.
+ Facilities upgrade design for Homeland Security, CSX Railroad National Contract.
+ Redesign of CSX Railroad Waste Water Treatment Plant in Clifton Forge, Virginia.
+ Environmental Emergency Responder to Train Derailment in Handley, West Virginia.
+ Site Monitoring and Cap Design for Remediation Site in Huntington, West Virginia.
+ QA/QC for Installation of New Groundwater Monitoring Wells in Scary Creek, West Virginia.
+ Brownfield Way Ground Water Monitoring Reports in South Charleston, West Virginia.

+ Nicholas County Landfill Design and Permitting: New Landfill Cells and General Site Engineering.

Land Development / Site Planning

+ Chesapeake Energy Regional Headquarters in Charleston, West Virginia, Leadership in Energy and Environmental Design (LEED) Project.
+ Chesapeake Energy Field Offices in Mount Morris, Pennsylvania, and Honey Branch, Kentucky
+ Detailed Site Design Aspen Village in Davis, West Virginia.
+ Ft. Boreman Development Master Plan Site Preparation and Roadway Design in Parkersburg, West Virginia.
+ Golf Club House and Lodge Site Development in Stonewall Jackson State Park, West Virginia.
+ Family Carpet Plaza-Site Design and Permitting in Parkersburg, West Virginia.
+ Storm Water Detention System, Melinda St. in Parkersburg, West Virginia.
+ Site Design for Schools Hannan, Wahama, New Haven, and Pt. Pleasant in Mason County, West Virginia.
+ Design of Storm Water Management System, Western Management in Parkersburg, West Virginia.
+ Preparation of Detailed Erosion and Sediment Control Plans.
+ Preparation of NPDES Construction Stormwater Permit Applications.

Streetscape and Trails

+ City of Mount Hope Streetscape in West Virginia.
+ East End Design Charrette, City of Charleston, West Virginia.
+ Florida Street Master Plan for the West Side Neighborhood Association, City of Charleston, West Virginia.
+ City of Richwood, West Virginia Streetscape Master Plan and Phase 1 Construction.

Rachael J. Beam, PE
Senior Project Engineer

Education

B.S. Civil and Environmental Engineering 1996, Cornell University

M.E. Engineering Management 1997, Cornell University

Registrations/Certifications

Professional Engineer, PA

Affiliations

American Water Works Association

Professional Employment History

Bankson Engineers, Inc., 2001-2012

FedEx Ground Corporation, 2000-2001

General Motors Corporation, 1997-2000

Professional Summary

Ms. Beam specializes in water resources engineering, including design and construction management for civil engineering projects. Her work has included analysis, permitting, specifications preparation, and contract administration. She has experience working with both public and private sector clients on various types of water resources jobs.

Professional Experience

+ Assisting with Joint Permit Applications for Acid Mine Drainage rehabilitation projects for GenOn Energy, Inc. and ALCOSAN.
+ Developing a compliance plan and schedule for Notice of Violation of UPMC's Montefiore Hospital Industrial Discharge Permit.
+ Designed over 100,000 L.F. of water mains and force mains and assisted with design of over 20,000 L.F. of sanitary sewer mains.
+ Designed a $2 million water line replacement project within an expedited Pennsylvania Infrastructure and Investment Authority time frame and completed within budget.
+ Designed water line replacement and extension systems that resulted in improved operations and efficiency and reduced leakage and loss.
+ Experience preparing Joint Water Obstruction and Encroachment, NPDES Industrial Discharge, Water Allocation, Public Water Supply, and other environmental permits.
+ Experience with design and permitting of numerous water pump stations, treatment facilities, and storage tanks.
+ Initiated a design modification of a 16.1 million gallon per day water treatment plant expansion in Greene County which resulted in a 50% reduction of building space requirements.
+ Secured 25% in additional grant funding for water line extension in Fayette County by collaborating with a Deputy Secretary of Pennsylvania DEP and local Senator's office.
+ Developed a water treatment plant security system that resulted in heightened security and saved over 300 operating hours annually, resulting in approximately $18,000 - $20,000 savings.
+ Reviewed various change order requests totaling over $400,000 to reduce the amount owed up to 75%.
+ Over 11 years of client service to municipal authorities and municipalities on water and wastewater projects.
+ Regularly interfaced with PA DEP, County Conservation Districts, PennDOT, funding agencies, and contractors to ensure projects are within budget, on time, and exceed client expectations.

+ Performed optimization of large transportation networks for FedEx Ground and General Motors and provided recommendations for cost savings ranging from $100,000 - $30 million

Brian Neilson, PE, LEED AP
Engineering Manager

Education

B.S. Environmental Resource Engineering, with honors, 1985, Humboldt State University

Registrations/Certifications

LEED Accredited Professional (AP), 2009

Professional Engineer, IN

Awards

Indiana Water Environment Association (IWEA) 20-Year Award, 2007

IWEA Tumblebug Award, 1997

IWEA Collection System "Person of the Year" Award, 1994

Affiliations

Water Environment Federation

Indiana Water Environment Association: Government Affairs Committee, Water-for-People Committee

American Society of Civil Engineers (ASCE) Environmental & Water Resource Institute (EWRI)

Marion County Soil & Water Conservation District, Chair

Upper White River Watershed Alliance

Professional Employment History

EMH&T Engineers, 2007-2011

JFNew, 2003-2007

Triad Engineering, Inc., 1999-2003

ADS Environmental Services, 1997-1999

City of Indianapolis, 1987-1996

Boyle Engineering Corp., 1985-1987

Professional Summary

Mr. Neilson specializes in sewer and stormwater projects for Private and Public Works, including sanitary and storm system evaluation, sanitary trunk and interceptor design and public works construction management and observation. As a LEED Accredited Professional, Mr. Neilson is also experienced in Sustainability / Low Impact Development (LID) cost effective design integration.

Professional Experience

Combined Sewer Overflow

Alternative Green Infrastructure

+ Pleasant Run Deep Tunnel Facility Plan (PRDT) LID Optimization Analyses For CSO Abatement for the Indianapolis Department of Public Works in Indianapolis, Indiana. Project manager and engineer for the CSO watershed modeling and analyses for the cost effective use of Low Impact Development (LID) abatement alternatives throughout the 55 Pleasant Run sub-watershed overflow impact areas. As part of the City's PRDT facility planning team, utilized existing soils and GIS land use data to evaluate the cost-benefit potential for block-by-block LID opportunities for each designated land use within the watershed. In order to maintain consistency with the City's consent decree compliance SWMM model platform, established a direct hydraulic data translation of LID output WinSLAMM-to-SWMM input procedure for pre- and post data evaluation.
+ Lower Pogues Run Deep Tunnel (LPgRT) Facility Plan - LID Analyses For CSO Abatement for the Indianapolis Department of Public Works in Indianapolis, Indiana. Project manager and engineer for design and cost estimating of Low Impact Development (LID) alternatives for CSO abatement. The evaluation focused only within the public right of way for the downtown ultra urban CSO watershed. Working with the City's LPgRT facility planning team, performed a comprehensive evaluation of the targeted CSO sub-basins' land use, geology, soils and hydrologic conditions. LID designs optimized through public-private partnerships with major downtown corporate campuses to better leverage private funding resources for large impact entities within the watershed.
+ RiverSouth Downtown Revitalization & CSO Abatement for the City of Columbus in Columbus, Ohio. Project engineer providing engineering, design support and QA/QC for the use of Green Infrastructure for CSO Abatement. The Green infrastructure includes opportunities for design variation of bioretention, tree wells and permeable pavement. The combination provides an extremely cost effective water quality and quantity component within the streetscape design.

Conventional

+ Cliff Drive Interceptor and Equalization CSO Basin Project for the Logansport Municipal Utility in Logansport, Indiana. Project Engineer for the design and construction administration services of 48-inch relief interceptor, CSO EQ basin, wet weather lift station and relief trunk sewers for wet weather storage. Flow was captured to a 10-year storm interval before overflow occurs. The EQ basin transports flow to the WWTP through a new lift station as capacity becomes available. Utilization of a combination of cast-in-place and pre-cast concrete construction methods provides estimated savings of over $500,000.
+ Combined Sewer Rehabilitation and CIPP Sewer Lining for the Logansport Municipal Utility in Logansport, Indiana. Project manager and engineer for the design and inspection services of cured in place pipe (CIPP) trenchless lining construction techniques to seal combined sewer interceptors and trunk lines. Located within the high-water influence zone of the Wabash and Eel Rivers, the project is estimated to reduce system inflow and infiltration significantly, thus reducing wastewater treatment plant (WWTP) operations costs.
+ Rabbit Run Lift Station and CSO Equalization Basin Project for Huntington Public Works in Huntington, Indiana. Project manager and engineer for the CSO Long Term Control Plan design of a new 55 mgd lift station, influent screen, and 18" forcemain to a CSO equalization basin. The EQ basin holds wet weather flow for transport back to the plant for treatment once capacity becomes available. Design to accommodate future constructed wetlands for stored CSO flow treatment.

Wastewater Collection and Treatment Engineering

+ Linden Avenue CSO Inerceptor Replacement for the Logansport Municipal Utlity in Logansport, Indiana. Project manager and engineer for the design and construction administration services for the replacement and upsizing of combined sewer interceptor. Utilizing the existing construction trench, the increased interceptor capacity potentially eliminates CSO overflows at 4 upstream overflow points. Field information verification by GAI surveyors provided for a reassessment of interceptor bottleneck locations.
+ Wastewater Treatment Plant Improvements for the Public Works in Huntington, Indiana. Project engineer for the design improvements that include septage receiving, influent screening, and conversion of the aeration basins into and integrated fixed film activated sludge (IFAS) process. Design also included evaluation of trickling filter towers in comparison to IFAS technologies.

Public Works Engineering

+ Indianapolis Engineering Planning Section for Public Works/Capital Asset Management in Indianapolis, Indiana. Managed 10 technical employees plus support staff of the DPW Planning group for Sanitary Sewer, Combined Sewer, Wastewater Treatment Plants, and Drainage/Flood Control short and long termed planning, studies and design. The Section team managed multiple consultants in various stages of studies and infrastructure design projects. During this time, also managed various sanitary sewer evaluations (SSES) and the City's CSO study. Managed the successful implementation of the Mayor's $130,000,000 Capital Improvement Program for storm, wastewater conveyance, wastewater treatment and combined sewer system improvements. Responsible for maintaining oversight of DPW review and permitting personnel for all private development within the City of Indianapolis/Marion County.
+ SSO Agreed Order Compliance Program for Public Works in Greencastle, Indiana. Project manager and engineer for developing and implementing cost effective flow monitoring and sanitary and storm sewer evaluation studies to identify immediate and long termed system repairs, rehabilitation, and operations and maintenance to remain in compliance with and close the Indiana Department of Environmental Management (IDEM) Agreed Order for SSO activity due to excessive Rain Dependent Inflow and Infiltration (RDII). Facilitated the City's public education, contractor certification and ordinance revisions for long-term private I/I removal using the City's real estate and plumbing industries.

Robert R. Bee, PE

Project Manager

Education

B.S. Structural Design and Engineering Technology, Pennsylvania State University, 1983

Registrations/Certifications

Professional Engineer, Pennsylvania, No. PE056941E

Relevant Training/Courses

ASFE Fundamentals of Professional Practice, 2003

Professional Summary

Mr. Bee specializes in structural engineering design of buildings and other structures, and structural computer analysis and design, with over 20 years experience. He also specializes in the design of structural components for highway and roadway structures including earth and water retention wall systems, stormwater control structures, tollbooths, and service plaza structures. Mr. Bee's professional experience covers construction of reinforced concrete on metal deck on steel joist, supported by structural steel beams and columns on spread footings; and construction of pre-stressed concrete roof planks on reinforced concrete masonry walls on spread footing.

Mr. Bee's experience with structures and structure components includes masonry buildings, steel decks, bar joint roof systems, pre-stressed joists, reinforced slab floor and roof systems, shear walls, ridge frame building systems of masonry, reinforced concrete and steel. His experience with bridge and retaining wall structures includes prestressed AASHTO beams, flat slab, pile caps, piling, slab, abutment. His experience with retaining wall structures includes masonry, sheet piling, reinforced concrete, reinforced earth, and gravity walls.

Professional Experience

+ Keeler Central Energy Plant in Biloxi, Mississippi, $17M design build project as a subconsultant to VOA Associates, Inc.
+ SR 9A Bridge in Jacksonville, Florida, $26M design build project for the Florida Department of Transportation.
+ City of Orlando, Fire Station No, 1, $4.5M design build project in Orlando, Florida.
+ City of New Smyrna Beach Fire Station Nos. 51 and 52, in Florida. Structural engineering and design project.
+ Florida A&M College of Law, $26M structural design and threshold inspection project.
+ Hurricane Protection Areas Enhancement Project for Orange County. Structural/adequacy study and report of thirteen existing Orange County Public School buildings to be used as hurricane shelters.
+ Ocoee Middle School in the City of Ocoee, Florida. Structural design of new administration building and new arts building.
+ Apopka Middle School in Apopka, Florida, rehabilitation and improvement of twelve existing structures and design of seven new buildings.
+ Tuskawilla Middle School in Oviedo, Florida, fast-track structural design and construction phase services to repair damage, by arson, of media center and main classroom building.

+ Parramore Charter School in Orlando, Florida, Phase I design of two-story classroom building and renovation of two existing structures.
+ Audubon Park Elementary School in Orlando, Florida, continuing building settlement monitoring study of various campus structures using settlement monitoring gauges and site survey.
+ Portable Classroom Modular Units structural design to retrofit classroom modulars to meet U.S. Department of Energy (DOE) hurricane wind load requirements.

Jonathan D. Shimko
Senior Project Environmental Specialist

Education

B.S. Environmental Science 2003, Slippery Rock University

Registrations/Certifications

Pennsylvania Certified Wastewater Systems Operator, Class C, E, 1, 2, 3, 4; No. 221238, Obtained 2005, Expires 2013

Pennsylvania Certified Water Systems Operator, Class A, E, 1, 12, 13; No. 221238, Obtained 2006, Expires 2012

Relevant Training/Courses

Client First, GAI Consultants, Inc., 2011

Leaders to Watch, GAI Consultants, Inc., 2011

Leadership and Management Skills Training, GAI Consultants, Inc., 2011

High Performance Management Training, GAI Consultants, Inc., 2009

Mechanical Engineering Courses, Geneva College

OSHA Permit Required Confined Space Entry Training

OSHA 40-hour Hazardous Waste Operations and Emergency Response

FEMA Incident Command System, ICS-100, ICS-200

MSHA 24-hour New Surface Miner Training

Professional Employment History

Sci-Tek, Inc., 2007-2008

U.S. Department of Agriculture, Forest Service, 2001-2006

Professional Summary

Mr. Shimko specializes in water and wastewater treatment process, design, implementation and operation. He has installed, maintained, and operated multiple pump stations, conveyance systems, blower systems, monitoring equipment, and process equipment. He is experienced in environmental permitting including NPDES, Water Quality Management, Waste Management, and Erosion and Sedimentation Control. Mr. Shimko has considerable experience in flow monitoring including sanitary and storm drainage, and streams. He also specializes in water and wastewater sampling and testing.

Professional Experience

Energy

+ GenOn Energy – Conemaugh Power Plant Wastewater Engineering and Design in Indiana County, Pennsylvania for Kirkpatrick & Lockhart Preston Gates Ellis LLP. Wastewater plant engineering and design at GenOn's Conemaugh Generating Station. Developed preliminary design of a wastewater treatment system for cooling tower blowdown. Coordinated design and treatability work with subconsultants. Prepared Water Quality Management Permit Application and Design Engineer's Report. Prepared modification documents for the Station's NPDES Permit. Assisted in the preparation of technical specifications and bid documents for competitive bidding. Coordinated the completed construction package issued to the winning contractor awarded the job. Provided construction management support and reviewed contractor submittals. Coordinated the development of the final record drawing package and operation and maintenance documents.
+ RRI Energy – Keystone Power Station Wastewater Discharge Pipeline in Armstrong County, Pennsylvania for Keystone Conemaugh Projects. Permitting, design, construction monitoring, and construction management of a 15-mile pipeline project. Assisted in the design for a filtration system used in the pipeline pigging process. Design work included calculations, cost estimates, and design drawings.
+ Allegheny Energy Supply Company – Hunlock Gas Turbine National Pollutant Discharge Elimination System (NPDES) Permit Application in Lucerne County, Pennsylvania. Hunlock Gas Turbine Discharge Rerouting, Treatment Evaluation, and NPDES Permit. Assisted in evaluating treatment alternatives for wastewater associated with cooling tower blowdown and preparation of investigation report. This included preparing costs associated with alternatives and consulting local publicly owned treatment works and vendors. Performed sample collection for laboratory analysis in order to establish treatability.

+ GenOn Energy – Alternatives assessment for the Bangor Ash Disposal Site in Northampton County, Pennsylvania. Developed an alternatives assessment aimed at increasing water quality and decreasing water quantity at the disposal site to meet more stringent NPDES permit requirements. Alternatives included various stormwater management strategies, wastewater treatment technologies, outfall relocation, and modifications to existing operating procedures.
+ GenOn Energy – Conemaugh Station Outfall Investigation. Assisted in evaluating NPDES outfalls at the Station in order to develop a comprehensive NPDES modification. The evaluation involved identifying new discharges and reviewing existing discharges and intake structures. Prepared NPDES Permit documents for consideration by the PADEP.
+ E.ON-U.S. and Louisville Gas and Electric (LG&E) – Trimble County Generating Station Landfill. Currently assisting with the design and permitting of a new 240 acre landfill for storage of coal combustion products (CCPs) produced at the Trimble County Generating Station. Managing the development of a passive leachate and sediment wastewater treatment system to meet Kentucky Division of Water permit requirements for discharge of these wastewaters.
+ Alpha Natural Resources – Cumberland and Emerald Mines. Performed an evaluation of existing water resources in order to improve efficiency and reduce wastewater that would require expensive treatment to meet NPDES discharge limits. Evaluated wastewater treatment technologies proposed by multiple vendors in order to assist Alpha with selection of proper technologies to achieve proper treatment efficiently.
+ GenOn Energy – Conemaugh Station Underground Utility Drawing. Coordinating the effort to provide GenOn with a comprehensive electronic drawing file that includes all underground utilities at the Conemaugh Station.
+ Marcellus Shale Coalition (MSC) – Participant in the MSC Gas Management Task Force. Assisted in the development of Best Management Practices for Pre-Drilling Water Purveyor Surveys associated with drilling activities in the Marcellus Shale.

Wastewater Treatment

+ Allegheny County Sanitary Authority (ALCOSAN) – Dooker Hollow Stream Mitigation Project. Assisting Sci-Tek Consultants, Inc. (Sci-Tek) to develop a design plan for removing the Acid Mine Drainage (AMD) from ALCOSAN's combined sewer system and remediating the AMD for reuse as irrigation water for the golf course. Assisting with development of feasible treatment alternatives, construction specifications, and opinion of probable construction costs, and permit documents.
+ West Virginia Division of Corrections (WVDOC) – Assisted with design and development of construction documents for the implementation of improvements to the Huttonsville and Anthony Correctional Centers. Provided wastewater treatment plant operator guidance to improve wastewater treatment at the facilities.
+ Stormwater Quality Remedial Evaluation in Florence, South Carolina for Koppers, Inc. Evaluated methods for managing stormwater quality from plant yard areas. Developed an alternatives analysis of remediation options. Prepared and implemented a sampling plan and designed a pilot remediation system to treat stormwater runoff.
+ Storage Tank Open End Contract for the Pennsylvania Turnpike Commission (PTC). Open End contract for various storage tank program services. Performed various wastewater related tasks for the PTC including permitting, design, and water sampling.
+ Hatfield Power Station Sewage Treatment Study in Greene County, Pennsylvania for Allegheny Energy, Inc. Evaluation of on-site and off-site sewage treatment alternatives. Completed sewage treatment investigation including the feasibility of alternative sewage treatment methods and associated construction costs. This included consulting local publically owned treatment works and venders.
+ Jonathan Run Acid Water Treatment Plant Design in Centre County, Pennsylvania for the University of Pittsburgh. Design of treatment system. Assisted in design of an active treatment system for the project, including design recommendations, calculations, and writing of specification package.

Kate E. Candillo, PE
Project Engineer

Education

B.S. Physics 2002, Appalachian State University

M.S. Environmental Engineering 2004, University of Arizona

Registrations/Certifications

Professional Engineer, AZ, No. 49964

Certified Construction Document Technician

Relevant Training/Courses

OSHA 40 hour HAZWOPER Training

Professional Employment History

Malcolm Pirnie, 2005-2011

U.S. Army Corps of Engineers, 2004-2005

University of Arizona, 2002-2004

Professional Summary

Ms. Candillo specializes in environmental engineering, permitting, compliance management, and Brownfield remediation projects while at GAI and through previous employment. She has worked extensively with the energy and chemical industries, and governmental agencies. Ms. Candillo has managed and implemented customized compliance management systems; designed remediation plans for contaminated sites; wrote various plans for industries and utilities; prepared construction documents for remediation projects.

Professional Experience

+ Permitting and Wetland Audits for Confidential Client in West Virginia. GAI provided consulting services to review existing and proposed Marcellus well and supporting facilities. Reviewed Wetland Delineation and Stream Identification Reports for various unbuilt facilities.
+ West Virginia Higher Education Policy Commission - Allied Health Edition Environmental Assessment. NEPA study that analyzes biodiversity, environmental justice, wetlands, air and water pollution, traffic, geotechnical risks, public safety issues, and hazardous substance issues.
+ Managed the development and implementation of an online compliance management system for water permits, air permits, and hazardous waste management.
+ Storm Water Pollution Prevention Plans
+ Spill Prevention Control and Countermeasures Plans
+ Sampling and Analysis Plans
+ Phase 1 Environmental Site Assessments
+ NEPA Environmental Assessments and Environmental Impact Statements

Brownfield Remediation

+ Developed excel-based computer model for radiological Brownfield remediation project that allowed for the optimization of reused material in excavation backfill. The model used AAR Method depth dependant release criteria to determine if the backfilled excavation passed NRC final status test.
+ Developed Mobile Radiation Mapping System (MRMS) which was a series of GPS systems connected to gamma measurement instrumentation all mounted on a unit that traversed and scanned an excavation area recording data points every second.
+ Designed backfill plans for radiological excavations utilizing reusable material from the excavation.
+ Prepared closure reports summarizing the excavation and remediation of excavation areas.

Publications / Presentations

2007 Combining GIS and GPS Technology to Enhance an Environmental Site Cleanup. Malcolm Pirnie Technical Symposium.

2004 Gas-Phase Catalytic Dehalogenation of Volatile Organic Compounds. University of Arizona.

Robert W. Bruhn, PE
Director - Engineering

Education

B.S. Geology 1967, University of Wisconsin-Milwaukee

M.S. Civil Engineering 1969, Massachusetts Institute of Technology

A.B.D. Civil Engineering, Carnegie Mellon University

Registrations/Certifications

Professional Engineer, PA 1982, No. 031019-E

Relevant Training/Courses

Advanced Project Management Training, GAI Consultants, Inc., 2009

Affiliations

American Society of Civil Engineers (ASCE), Member

ASCE Publications Committee, Journal of Engineering Technology, Past Member

Society of Mining Engineers (SME), Member

American Society of Rock Mechanics, Member

Association of Engineering Geologists (AEG), Member

AEG Allegheny-Ohio Section, Past Chairman

Geological Society of America (GSA), Member

Professional Employment History

U.S. Army Corps of Engineers, Baltimore District, 1972-1974

U.S. Army Corps of Engineers, Missouri River Division, 1969-1972

Professional Summary

Mr. Bruhn specializes in geotechnical engineering, particularly subsidence above active and abandoned mines and in mining-related activities. He has studied subsidence above mines in Pennsylvania, West Virginia, Ohio, Kentucky, Illinois, Virginia, the United Kingdom, and India. Mr. Bruhn is a nationally recognized expert in subsidence engineering and has written numerous technical articles that have been published concerning subsidence and its effects on structures and on the ground water regime. This experience extends to the stabilization of abandoned underground mine workings and to the control of mine fires in such mine workings. Mr. Bruhn designs and interprets subsurface rock instrumentation and testing programs for dams and tunnels, rock cuts, and mines. He prepares specifications and design memoranda on field instrumentation of rock, and rock testing and support; and geologic mapping of joints, faults, and rock types in rock slopes and tunnels.

Mr. Bruhn's background in soil and rock mechanics has led to extensive involvement in slope stability analysis and design, foundation and ground water investigations, field surveys of subsurface conditions, geophysics, and field and laboratory instrumentation and testing. He has prepared numerous expert reports on geotechnical matters and provides court testimony on the subject. Mr. Bruhn performs building distress investigations. He has investigated lateral deflection and cracking of subgrade walls due to excessive earth pressures, slab-on-grade floor uplift due to the presence of expansive subgrade materials, wall distortion and cracking due to settlement of compressible fill and mine subsidence, and wall cracking attributed to surface mine blasting and detonation at an explosives factory. Mr. Bruhn has been involved in numerous investigations of mine-related ground movement and mine fires in Pennsylvania, Ohio, Kentucky, and Michigan for the U.S. Office of Surface Mining (OSM), and was the principal author of The Guidance Manual on Subsidence Control prepared for the OSM.

Professional Experience

Foundations and Slope Stability

+ Geotechnical Engineer providing engineering studies for design of commercial and industrial buildings, bridges, retaining walls, petroleum and chemical storage tanks, and microwave towers for a variety of clients.
+ Geotechnical Engineer providing geotechnical engineering for planned state roadway improvements on SR 0088, Sections A04 and A09, for the Pennsylvania Department of Transportation, District 11-0, and for

design of the Erie bypass for PennDOT District 1-0, and for rehabilitation of a section of Interstate 79 near Canonsburg for PennDOT District 12-0.

+ Developed foundation plans and specifications for construction of a power plant in central Pennsylvania underlain by Karstic limestone where grouting was required to address the void issue. Developed foundation plans and specifications for construction of a power plant in Westmoreland County, Pennsylvania. The site was mantled by colluvium and augercast piles were required to address the soil settlement issue. The potential for subsidence of underlying abandoned mine workings also had to be taken into account.
+ Developed earthwork plans and specifications to stabilize an existing non-engineered sidehill embankment of loose/soft residual coal waste underlain by a series of abandoned underground mine workings for construction of a series of multi-story residential structures atop the embankment.
+ Investigated a shopping mall, and developed mitigative measures to counter the differential uplift of walls, foundations, and floors of the shopping mall in eastern Ohio built upon a bed of expansive carbonaceous shale. Developed foundation recommendations for two new "big box" stores at the mall to deal with the potential uplift condition as well as potential subsidence due to the presence of abandoned underground mine workings at shallow depth.
+ Developed foundation recommendations for a major warehouse distribution center in the Wilkes-Barre/ Scranton area of Pennsylvania incorporating columns that could be jacked to accommodate settlement of underlying non-engineered fill and potential subsidence from abandoned underground mine workings in a series of anthracite seams.
+ Monitored construction of a large tie back retaining wall at McKeesport Hospital in McKeesport, Pennsylvania, immediately in front of a hospital high-rise building with patient's rooms and emergency room facilities.

2003 Miller, S. S., Bruhn, R. W., and Patton, M. E.. Structural Evaluation and Rehabilitation of a Conference Center Subjected to Heaving Caused by Electric Arc Furnace Slag. Presented at the Soil and Rock America 2003 Conference, Boston, Massachusetts, June 2003.

1999 Bruhn, R.W. and Roth, B. L. The Design, Construction and Performance of a Water Supply Dam Located Above Abandoned Mine Workings in Pennsylvania's Western Coal Field, presented at the Association of State Dam Safety Officials (ASDSO) Annual Conference, October 10-13, 1999, St. Louis, MO.

1992 Bruhn, R. W. The Tolerance of Structures to Movements--Some Considerations. In Proceedings of the Third Subsidence Workshop on Subsidence Due to Underground Mining, West Virginia University, Morgantown, June 1992.

1991 Bruhn, R. W., and Turka, R. J. Guidance Manual on Subsidence Control. Report prepared for U.S. Department of the Interior, Office of Surface Mining Reclamation and Enforcement, Pittsburgh, Pennsylvania, under Contract J5140119, January 1991. (Available from NTIS, PB 91-228403)

1989 Gray, R. E., and Bruhn, R. W. The Angle of Draw in Mine Subsidence. Presented at the 28th International Geological Congress, Washington, D. C., July 1989. (Abstract)\

1988 Bruhn, Robert W. Slope Stability and Landslides. In Proceedings of the 10th AML Conference, Pennsylvania Department of Environmental Resources, Wilkes Barre/Poconos, Pennsylvania, October 1988.

1980 Bruhn, R. W. Mine Subsidence in the Pittsburgh Area. Guidebook for the 45th Annual Field Conference of Pennsylvania Geologists. Harrisburg, Pennsylvania: Department of Environmental Resources, Bureau of Topographic and Geologic Survey, 1980.

Bruce L. Roth, PE
Engineering Manager

Education

B.S. Geological Engineering 1985, University of Arizona

M.S. Civil and Environmental Engineering 1991, Cornell University

Registrations/Certifications

Professional Engineer, PA 1994 No. PE045910E; NC No. 036727; VA 0402047094

Relevant Training/Courses

Leaders to Watch Program, GAI Consultants, Inc., May 2009

Advanced Project Management Training, GAI Consultants, Inc., 2009

High Performance Management Training, GAI Consultants, Inc., October 2008

ASFE Fundamentals of Professional Practice, 2001

Troxler Moisture-Density Gauge Operation

Commonwealth of Pennsylvania Drilling Inspector Level 2

Affiliations

American Society of Civil Engineers (ASCE), Director

American Society of Civil Engineers, Geotechnical Engineering Group, Past Chairman

Professional Employment History

Cornell University, 1988-1990

Western Technologies, Inc., 1985-1988

Professional Summary

Mr. Roth specializes in foundation analysis and design, slope stability analysis and design, rock and soil mechanics, subsurface exploration, geophysical investigation techniques, and geosynthetics. He provides geotechnical engineering services for dam and building foundations, and the geotechnical aspects of transportation projects.

Mr. Roth specializes in earthquake induced permanent ground deformations and the effects on lifeline facilities. His research work at Cornell University included evaluating earthquake induced ground failure from soil liquefaction and surface faulting, and assessing buried lifeline response to large soil deformation. Mr. Roth studied case histories of the 1971 San Fernando and 1979 Imperial Valley earthquakes. He participated in post-earthquake site investigations in San Francisco and the epicentral area after the 1989 Loma Prieta earthquake.

Professional Experience

Structure Foundations

+ Project Monarch Geotechnical Services for FBI Renovation. Project manager responsible for the subsurface investigation at Bayer New Martinsville, West Virginia.
+ Transmission Line Upgrading near Petersburg, Virginia. Performed subsurface investigation, evaluated the grillage foundations, and conducted full-scale load tests for the uprating.
+ Korean Electric Power Research Institute. Conducted a short course on pole foundations for the institute.
+ Bristers to Gainesville, Virginia City to Clinch River, and Meadowbrook to Loudon Transmission Lines Foundation Investigations. Project manager responsible for the foundation evaluations.
+ Pruntytown-Mt. Storm Transmission Tower in Grant and Tucker Counties, West Virginia for Island Creek Coal Corp. Structural integrity investigation project for a 125'-high, 500 kV steel lattice tower immediately above chain pillars separating two longwall panels of a mine 300 feet below the surface. Geotechnical engineer.
+ Geotechnical engineer responsible for foundation recommendations for West Virginia cellular towers.
+ Radio Transmission Towers in Reserve Township, Pennsylvania. Geotechnical engineer responsible for foundation recommendations for two radio transmission towers.
+ Brine Storage Tank in Nitro, West Virginia. Geotechnical engineer responsible for foundation and site preparation recommendations for a brine storage tank.
+ Foundation design for several buildings in Pennsylvania and Arizona.

+ Subsurface investigation project to determine the subsurface conditions of several alternative foundation systems for a chemical storage tank in West Virginia. Geotechnical engineer responsible for investigating subsurface conditions and analyzing the alternative foundation systems.
+ Mead-Phoenix Transmission Line in Arizona for the Salt River Project. Geotechnical investigation project for a 255-mile, 500 kV transmission line to provide review services associated with foundation load tests and related matters for design based on the full-scale uplift test data enabling a substantial construction cost savings. Geotechnical engineer responsible for evaluating lateral and uplift loads on drilled shaft foundation for the Salt River Project transmission tower foundations.
+ Light Tower Foundations on SR 6060 in Allegheny County for the Pennsylvania Department of Transportation, District 11-0. Foundation evaluation project to determine lateral and uplift loads on drilled shaft foundations for high mast light tower foundations.

Dams, Power Plants, Disposal Sites

+ Bradford Dams in Bradford City, Pennsylvania for Bankson Engineers on behalf of the Bradford City Water Authority. Geotechnical engineering services to evaluate the stability of dam Nos. 2, 3, and 5 (44'- 47'-, and 68'-high) in accordance with the Pennsylvania Division of Dam Safety. The project included rehabilitation measures for Dam No. 3. Responsible for embankment stability and drainage design for the dam rehabilitation project.
+ Brookville Water Works Dam in Jefferson County, Pennsylvania for Brookville Municipal Authority. Dam rehabilitation to repair damages incurred by flood-induced overtopping of the dam. Geotechnical engineer.
+ Warren Ohl Dam in Lock Haven, Clinton County, Pennsylvania for the City of Lockhaven. Geotechnical engineer for emergency project to repair the 55'-high, 915'-long dam's 600'-long emergency spillway.
+ H.B. Norton Dam in Ridgway, Elk County, Pennsylvania for Hill Engineering, Inc. Stability analyses for a 30'-high earth dam to determine artesian groundwater pressures discovered during geotechnical studies for new water treatment plant facilities below the dam. Geotechnical engineer responsible for evaluating the stability of dam considering the effects of artesian ground water pressures.

Site Development

+ Pennsylvania State Police Barracks on the Mon/Fayette Expressway, Section 52J, in Jefferson Hills, Allegheny County, Pennsylvania for Johnson, Schmidt and Associates, for the Pennsylvania Turnpike Commission. Site design project to develop a state police barracks facility, requiring an access road, utilities, and infrastructure. Geotechnical engineer.
+ PNC Park Bulkhead Wall in Pittsburgh, Pennsylvania for L.D. Astorino & Associates, Ltd. Structure final design and construction monitoring for a 1,110'-long anchored sheet pile wall to support a river walk area between the PNC Baseball Park and the Allegheny River, including a tieback system consisting of 142 inclined soil anchors at 8-foot intervals, each with a 42-ton capacity and embedded 51 feet into the soil. Geotechnical engineer.
+ Fort Steuben Mall in Steubenville, Ohio for The Goodman Co. Construction and renovation activities spanning 15+ years at a shopping mall requiring extensive geotechnical and structural engineering services to repair problems with expansive shale. Geotechnical engineer.

Research

+ Geotechnical engineer responsible for experimental product evaluation of SAFE foundations for use in Pennsylvania.
+ EPRI Coal Ash Disposal Manual: Third Edition for Electric Power Research Institute. Research project to develop a State of Practice Manual on the technical, environmental, and economic factors related to disposal. Preparation of geotechnical engineering chapter in EPRI fly ash disposal manual, and EPRI MFAD Manual.

Jeffrey S. Cadman, PE
Director – Engineering / Office Manager

Education

M.B.A. Point Park University, Currently Enrolled

BSEL Chapman University

Registrations/Certifications

Professional Engineer, PA, No. PE-054013-E

Professional Engineer, NJ, No. 24GE04594200

Certified Vibration Analyst

Certified QA/QC Inspector

Certified Microminiature Electronics Repair Technician

Relevant Training/Courses

Harvard Leadership Development Training, GAI Consultants, Inc., 2011

Affiliations

Mon Valley Food Bank, Executive Board Secretary

Glassport Zoning Officer, 2 Years

Professional Employment History

River Consulting, LLC, 1989-1991, 1999-2006, 2008

HydroGen, LLC, 2006-2008

Vulcan Engineering, 1995-1999

USX Corporation, Clairton Works, 1991-1995

United States Marine Corps, 1982-1989

United States Steel, National – Duquesne Works, 1977-1982

Professional Summary

Mr. Cadman specializes in engineering, engineering management and project management. His experience includes utility and industrial power distribution, commercial and industrial automation, instrumentation, process and control systems design and design management. Mr. Cadman has been responsible for program and project management, government project liaison, engineering, construction management, and regulatory code compliance and interpretation.

Professional Highlights

+ Facilitated Department and Project Managers in multidiscipline engineering, procurement and construction management activities.
+ Directed engineers and designers in technical innovation and QA/QC of their designs.
+ Highly skilled in the architectural and hardware design, installation oversight and testing of automation and digital communications networks.
+ Acted as governmental liaison with the Pennsylvania Department of Environmental Protection (PADEP) in the application for, and oversight of, alternative energy research grants.
+ Well developed process control, instrumentation, automation and power distribution design skills and design team leadership and coordination.
+ Wrote and qualified specifications for major electrical distribution equipment in utility and industrial environments from DC up to 138kV.
+ Qualified in the evaluation of grounding systems and in the design of the same for minimization of step and touch shock hazards, effective shunting of lighting and stray static charges, control of power system harmonics and noise, and compliance with regulatory and utility requirements.
+ Extensive experience in the design, installation and commissioning of electrical systems within both Class I and Class II hazardous environments including instrumentation, lighting, control, monitoring and power distribution.
+ Experienced in working with multi-disciplinary and multi-national engineering and construction teams as a team player, facilitator and leader.
+ As a Code Official of his residential Municipality, Mr. Cadman worked with inspectors and local jurisdictional authorities in pre- and post-construction plan approvals and inspections.

Professional Experience

+ Manages a department of up to 70 engineers, designers and CADD personnel on industrial and energy design projects utilizing Civil,

Structural, Electrical & Instrumentation, Mechanical and Chemical Engineers. Project design includes complete balance of plant and structural design for water and waste water treatment, boiler and steam turbine steam piping, fuel system and instrumentation systems, building and concrete design for large industrial and power plant structures and cross country pipeline and substation & distribution design.

+ Managed multiple departments of engineers, specifically Process Engineering and E&I Department that included engineers, designers and CADD personnel. Projects focused on bulk material storage and handling (primarily petroleum products) including truck, rail and ship/barge loading and unloading facilities; complete facility upgrade of automation and communications systems, chemical and food processing, fuel processing and electrical substations. Designed and oversaw construction of the balance of plant equipment for 2 hydrogen fuel cell facilities. One very large (500kW) and one for manufacturing testing (3.9kW). Heavy field construction oversight and inspection of electrical, instrumentation and piping systems. In this position, Mr. Cadman was directly involved with the specification and installation of many large pumping systems including 480vac horizontal and vertical pumps and motors up to 300hp, and 4,160vac horizontal and vertical pumps and motors up to 800 hp.
+ Managed the E&I department of an Integrated Engineering Company. Department personnel provided design and commissioning services for boiler and steam instrumentation and control, robotic machinery automation, chemical process and manufacturing equipment automation, facility power distribution, lighting, grounding and lightning protection.
+ Chief Electrical Engineer oversaw the design of several electrical motion control systems used in the primary side of steel production. Design included positioning, speed and direction control and was achieved using both ac and dc motors using reduced voltage, across the line and variable speed drive controllers. Oversaw the design of cooling water and oxygen delivery system instrumentation and dense phase pneumatic transport design for use in the treatment of raw iron and production of steel. Extensive PLC and Networking programming work completed. Oversight, commissioning and inspection of facilities construction performed domestically and extensively overseas in Europe, Asia and South America.
+ Maintenance Manager for large integrated steel maker. Area of responsibility was the chemical recovery area and motor repair shops. While manager of the motor repair facility, Mr. Cadman initiated programs to increase the operational times for very large 4,160 and 13,800vac motors (1,500hp and 3,000hp respectively) that involved a redesign of the end bells and plates of the fabricated frame motors to mitigate resonant vibrations, added tilt pad bearings, and revamped the oil system to include degassing and dehydration to improve the tribology of the lubricant.
+ Instrumentation Engineer in an integrated engineering and construction firm. Selected and specified flow, pressure, temperature, analysis and safety instrumentation. This included process compatibility of materials and suitable service conditions. Performed field start-up assistance of instrumentation systems. Specified, designed and programmed PLC and HMI equipment.
+ PLC Experience
  Allen Bradley, Modicon, Siemens, GE FANUC, Mistubishi, Honeywell
+ Software Experience
  RS Logix, Step 7, Intellution, Wonderware, FactoryTalk, Visual Basic, CenterOne, Lighthouse, SKM, ETAP
+ MCC and Switchgear Experience, Including Protective Devices
  Allen Bradley, Square D, Cutler Hammer, GE, Siemens, ABB, Furnas, Westinghouse, S and C, Mistubishi, Schweitzer Laboratories, Basler
+ Network Experience
  Ethernet, Profibus, Modbus, Foundation Fieldbus, CAN Bus (DeviceNet), ControlNet, ASI Bus, Cisco
+ Instrument Experience
  Honeywell, Rosemount, Bailey, Bristol Babcock, Wobe, Masoneilan, Fisher, SAAB, ABB, Siemens, Endress Hauser, Samson, Mueller, Moore, Leslie Controls
+ VFD Experience
  Toshiba, Mitsubishi, Allen Bradley, Dutch Electric, ABB, Square D, Saftronics, Siemens, Robicon

Joseph J. Kuhel
Senior Lead Project Designer

Relevant Training/Courses

Two years in Engineering Graphics, Westmoreland County Community College

Miscellaneous courses in wiring design, lighting design and seismic design (Class 1E...nuclear)

AutoCAD, Triangle Technical School

Professional Employment History

River Consulting Inc., 1997-2010

Raytheon Engineers & Constructors, 1996-1997

Trimark Engineers, 1988-1993, 1995-1996

Gluco, Inc., 1993-1994

Sargent Electric Company, 1982-1987

Stearns-Roger Engineering Corporation, 1979-1981

Elliott Company, 1978-1979

Dravo Corporation, 1974-1977

Lehigh Design Company, 1974

Professional Summary

Mr. Kuhel specializes in electrical and process systems for construction of industrial, commercial, mining, chemical, petro-chemical, nuclear and coal power industries. He has developed construction drawings utilizing AutoCAD Version 2008 and MicroStation V8 from customer specifications and vendor information. Mr. Kuhel has prepared scopes of work, man-hour estimates and material take-off requisitioning and purchasing for large industrial projects. He has 35+ years design experience in the following:

+ Low voltage and medium voltage power systems design that includes one line and control elementary wiring diagrams, schematics, underground routing, motor hookups, grounding, panel fabrication and pole wiring.
+ Lighting work including calculations utilizing Lite Pro software, design of high bay, low bay, floodlighting, fixture schedules and panel schedules.
+ Communications systems with the design & integration of Fiber Optics, Ethernet, ControlNet, DeviceNet & Foundation Field Bus Systems.
+ Design of Process Control systems utilizing Programmable Controllers (Allen Bradley, Modicon, Texas Instrument & Gould) Fisher Provox, and uninterrupted power supplies to include I/O elementary diagrams, interconnection diagrams, instrument plans, control loops for valves and pumping systems and installation details.

Design of conduit, cable duct and cable tray systems in the following areas: non-hazardous, hazardous (Class I, II and III locations), underground and seismic (Class 1E...nuclear) installations.

Mr. Kuhel's field experience includes assessments of plant conditions, planning approach to construction, field checkout and start-up of electrical and mechanical equipment. He has intimate knowledge through experience in safety training, pre and post commissioning punch lists, start-up scheduling for contractors, vendors and specialized field technical representatives and can establish a good working rapport with both professionals and skilled labor trades.

Professional Experience

+ Lead Designer, Electrical Control Systems. Responsibilities involved design and layout and checking of electrical and control systems for commercial, industrial, petroleum, steel, chemical and power plant applications. Provided project construction management and start-up. Responsible for the design of several ship, barge, rail, and truck loading and unloading systems that encompassed multipump source and destination manifolding systems that included instruments valves, network control (including variable frequency motor drives at 480 and

4,160vac) and safety systems, and inventory management that could deliver up to 126,000 gpm (181 Mgpd).

+ Senior Designer, Electrical and Control Systems. Responsible for chemical plant and bulk mail facilities electrical and control system design and estimating.
+ Senior Designer, Control Systems. Responsibilities involved the design and layout of control systems for chemical, cement and iron ore reduction facilities.
+ Electrical and Process Control Systems Designer. Responsible for the design of electrical and process control systems for injection, compression and transfer molding machines to include review of specifications and codes.
+ Senior Designer, Control Systems. Responsibilities involved the design and layout of instrument systems for chemical plants.
+ Electrical Field Design Technician. Design and layout of seismically qualified installations within the reactor containment and control buildings.
+ Electrical Design Technician II. Design and layout of electrical and instrumentation installation for oil refineries and chemical plants.
+ Instrumentation and Electrical Draftsman. Design and layout of compressors, gas turbines, steam turbines and control panels. This included explosion proof, waterproof and high heat systems.
+ Electrical Draftsman. Design and layout of pelletizing plants, coal storage areas, steel mills, foundries, fuel pump stations, warehouses, and office buildings.
+ Mechanical Draftsman. Drafting and detailing of various parts for atomic reactors and shipping modules.

Wesley J. Sipe
Design Manager

Education

B.S. Aerospace Engineering 1987, The Pennsylvania State University

Professional Employment History

Senior Project Engineer at Siemens Water Technologies, 2009-2010

General Manager Heat Transfer at IPEG, 2007-2009

Process and Product R&D at IPEG, 2003-2007

Product Development Engineer at IPEG, 2001-2003

Engineering Manager at IPEG, 1999-2001

Project/Product Engineer at IPEG, 1997-1999

Product Engineer at IPEG, 1989-1997

Professional Summary

Mr. Sipe is Project/Product Engineering professional with proven track record of leading projects and delivering results. Quickly integrates broad industry experience into any business situation. He has the ability to manage multiple million dollar projects/products – successfully and holds a strong work ethic.

Professional Experience

+ Provided senior project/mechanical engineering support for $100M engineering products company specializing in customized industrial water and wastewater treatment solutions primarily for the power industry. Other clients included food/beverage manufacturing and microprocessor electronics industry. Work included engineering design and analysis of process mechanical systems as well as training/mentoring new graduates.
+ Directly responsible for all fluid heat transfer products with respect to engineering, manufacturing, profit margin, development and sales. Developed and implemented the first Global Heat Transfer Council with members from China, India, Europe, Mexico and the US to determine the global market and implement global products. Product responsibility included Temperature control units ($5M), Mechanical refrigeration portable chillers ($1M) and plant central cooling systems ($4M)
+ Responsible for advanced product enhancement concepts which included automated material selection valve stations, Gravimetric dosing material feeders and compressed air / membrane plastic pellet dryers, Management responsibilities included supervision, coaching and mentoring engineers, laboratory technicians, and SolidWorks CAE/CAD designers. Work included new product/ process testing for the Plastics and Heat Transfer industries. Responsible for Engineers, Designers, Laboratory and Lab Technicians who develop and test new processes and products for the Plastics and Heat Transfer Industries. Advance piping analysis for sizing, pressure drop and material transfer rates in both liquid and dilute phase material vacuum conveying.
+ Developed innovative products to meet specific market segment needs. Designed high ambient air-cooled chillers and Optical disk manufacturing cell temperature control units. Designed open architecture, low cost control systems. That allowed a 25% decrease in cost and increased flexibility in meeting application requirements. Designed niche market, air heating products to build credibility in industry, designed cost-reduced products to increase margin and profit and designed "disruptive" TCU to capture increased market share.

+ Managed, supervised and trained engineering design office consisting of eight project engineers and draftsmen who annually supported a sales volume of $10Million representing hundreds of clients and projects. Responsibilities included training corporate sales force of 13 representative agencies across the country to provide applications engineering services to customers in the field/across the country. Provided engineering sales presentations and internal/external product specific training.
+ Provided engineering support to customers, sales engineers, and project engineering. Activities included multiple product line maintenance including drawing markups, revisions and analyses for fluid heat transfer units. Responsible for maintaining and modifying a complete line of temperature control units (TCU) in the plastics industry, including portable chillers, cooling towers, central chillers, pump tanks and controls. Moved product line in a corporate consolidation from Chicago to Pittsburgh.
+ Designed electromechanical fluid heat transfer units, including pressure vessels, multiphase pressure piping, three phase and control voltage control systems including PLCs and VFDs, Completed component specification, bills of material, AutoCAD drawings and ASME design calculations for customer specific orders to meet time and budget constraints. Responsibilities included Quality Control and Functional Testing of high temperature skid packages.

Jeffrey G. Blum
Senior Project Electrical Technical Specialist

Education

B.S. Electrical Engineering 1993, University of Pittsburgh

A.D. Electronics 1974, Penn Technical Institute

Professional Employment History

HydoGenLLC, a Fuel Cell Company, 2006-2009

United States Steel, Mon Valley Works, 2002-2006

Bricmont, Inc., an Inductotherm Company, 1997-2002

ITT Technical Institute, 1994-1996

Westinghouse Electric Company, NATD/Advanced Energy Systems Division, Fuel Cell Test Facility, 1984-1992

Westinghouse Instrument Service Company Westinghouse Nuclear Services Division, 1982-1984

General Electric Company, 1978-1981

General Electric Company, Heavy Military Electronics Division, 1974-1976, 1977

General Electric Company, Management and Technical Services, Space Division, 1976-1977

Professional Summary

Mr. Blum specializes in electrical, electronic, and control systems engineering. He has extensive experience providing research, testing and development, and design for major manufacturing firms.

Mr. Blum is proficient of the following systems:

Hardware: IBMPC (MSDOS6.2, Microsoft Windows 3.11/95/98/NT/2000/XP/Vista), DEC VAXstation 3100 (VMS 5.1), and DEC DECstation (Ultrix 4.2)

PLC Systems by: Allen Bradley PLC-5, SLC100,150,500, Control Logix Series Controllers, Siemens, Mitsubishi, TI, and Siemens S7,S5

Allen Bradley, Mitsubishi and Siemens Drives. Alstom DC Drives, and Fip Level 1 systems

Networks: DH+, Siemens, H1, TCP/IP, RSLinx, and Melsecnet

Languages: C, Assembly, FORTRAN, and BASIC

Software: P-Spice, Tutsum, Siglab, Monarch, MatLab Wonderware MMI, Intilution iFix, RSView32, RSView Supervisory Enterprise, Studio, Factory Link, and Altom Pilot

Professional Experience

+ HydoGenLLC, a Fuel Cell Company, Manager Test Operation/Test Engineering Supervisor. Utilized past knowledge and experience gained at Westinghouse in the testing of phosphoric acid hydrogen fuel cells. Designed, constructed and commissioned testing facilities for phosphoric acid hydrogen fuel cells. Led and educated testing engineers and technicians in the correct operation and testing of fuel cells manufactured at HydroGenLLC. Provided field support to the company's projects group in Ohio.
+ United States Steel, Mon Valley Works. Responsibilities: Maintained the automation systems for the Cold Reduction Mill. This entailed the drives, PLC's, PLC software, MMI software, and mechanical systems. Equipment by Alstom/Cegelec/GE.
+ Bricmont, Inc., an Inductotherm Company, Control Systems Engineer. Responsibilities: Designed and programmed control systems software for industrial applications in the metals and emissions areas, using PLC's, VFD drives, and MMI application software and hardware. Responsible for installation and site commissioning after development of software at customer sites worldwide.
+ ITT Technical Institute, Instructor in a post-High School Teaching Institute. Responsibilities: Presented analog and digital circuit theory and the construction of these circuits in a laboratory setting to present

their operating properties to the students as practice for true industry applications.

+ Westinghouse Electric Company, NATD/Advanced Energy Systems Division, Fuel Cell Test Facility. Responsibilities: Tested and supported a Hydrogen Phosphoric Acid Fuel Cell consisting of a 4 gas, closed process control loop system. Gas mixture analysis using a chromatograph.
+ Westinghouse Instrument Service Company, Westinghouse Nuclear Services Division. Responsibilities: Developed, tested and serviced specialized robotic tooling equipment for sleeving and tube end repair on commercial nuclear power generators.
+ General Electric Company. Responsibilities: Advised purchasing for the Advanced Lightweight Torpedo project. Performed automatic fault insertion testing for the Trident Submarine Fire Control System. System and software design for an IC analyzer based on a Tektronix component tester. Software design for the General Electric Training System.
+ General Electric Company, Heavy Military Electronics Division, Court Street Plant. Responsibilities: Supervised maintenance for the AN/FPS-80 satellite tracking radar. The areas covered were the transmitting, receiving, and signal processing equipment of the radar. This servicing included alignments, modifications, and preventative maintenance using various testing equipment found in the RF field through Tektronix, Hewlett-Packard, Wavetek, Systron/Donner, Alfred, etc.
+ General Electric Company, Management and Technical Services, Space Division. Responsibilities: Research and development of Magneto-hydrodynamic Power (MHD). Repair, modifications and calibrations of combustors, coal handling systems, air compressors, water cooling systems, and control instrumentation.
+ General Electric Company, Heavy Military Electronics Division, Court Street Plant. Responsibilities: Maintenance, modifications and repair for the AN/FPS-80 satellite tracking radar. Field Service Position in Shemya Aleutian Islands, Alaska.

Glen E. Rudzinski, PLS
Senior Survey Manager

Education

A.S. Civil Engineering/Survey Technology 1986, The Pennsylvania State University

Registrations/Certifications

Professional Land Surveyor, PA 1999, SU-051253-E

Relevant Training/Courses

Leaders to Watch Program, GAI Consultants, Inc., May 2009

Advanced Project Management Training Program, GAI Consultants, Inc., 2009

ALTA/ACSM Land Title Survey Seminar

Trimble Land Survey and Mapping GPS and RTK Seminar

Affiliations

Pennsylvania Society of Land Surveyors, Member

Professional Employment History

Monaloh Basin Engineers, 1999-2001

Senate Engineering Company, 1996-1999

ES Technologies, 1993-1996

GAI Consultants Inc., 1990-1993

Kiddie Consultants (KCI), 1987-1990

Gateway Engineers, 1985-1986

Professional Summary

Mr. Rudzinski's professional experience is comprised of ALTA/ACSM Land Title Surveys, subdivision plans, property, existing conditions for site development, rails to trails projects, engineering surveys for highways related to design, right of way, bridges and street rehabilitation, industrial surveys for coal and hydro-electric plants, and multiple monitoring surveys. Mr. Rudzinski has over 25 years of professional surveying experience. He manages the survey department, overseeing office and field staff personnel.

Professional Experience

Survey Manager / Survey Project Manager

+ Independence Excavating, Inc., Indiana Township, Pennsylvania. Survey for 20 acres of commercial property. The survey included utility investigation, courthouse research, field investigation, topography survey and an ALTA/ACSM Land Title Survey for a real-estate transaction.
+ Castalia Trout Club, Castalia, Erie County, Ohio. Survey for a new fish hatchery for a private club that included field surveying the existing site features, stream, natural spring including the water feed from the "Blue Hole".
+ Port Authority of Allegheny County, Pittsburgh, Pennsylvania. Monitoring survey of a ramp for horizontal and vertical displacement. Monitoring points were established to track movement of the road surface and jersey barriers. The survey is performed monthly which entails traversing, level loops, and the surveying of 53 monitoring points.
+ UPMC East Hospital Complex in Allegheny County, Pennsylvania for BBH Design of PA. Civil Site Engineering, Design & Survey Services. GAI participated in the design of a new hospital on approximately 19 acres of land in Monroeville, Pennsylvania. The site is located at the southwest corner of State Routes 48 and 22, the second busiest intersection in the state. Survey Manager for the project.
+ Settlers Ridge in Robinson Township, Allegheny County, Pennsylvania for Faison Enterprises, Inc. Site development project for a shopping complex on a 79-acre parcel of strip-mined property. The project included surveys for property, aerial mapping, multiple ALTA/ACSM Land Title Surveys, subdivision plan, construction layout, record surveys, and right of way plats. Survey project manager responsible for the all the survey aspects of the overall project.
+ Wind Energy Project in Bradford and Tioga Counties, Pennsylvania for the AES Corporation. GAI was contracted to obtain LiDAR mapping, perform property and ALTA/ACSM Land Title Surveys, and establish a

GPS network and supplemental topography surveys. The overall project site consisted of approximately 12,000 acres involving over 140 property tracts.

+ Station Square Retail/Entertainment Complex in Allegheny County, Pittsburgh, Pennsylvania for Forest City Commercial Development. Retail development project for a gaming and entertainment facility at the Station Square shopping and entertainment complex located in the City of Pittsburgh. Survey project manager responsible for base mapping, utility investigation and ALTA/ACSM Land Title Survey.
+ Program Management Services for Redevelopment Authority of Allegheny County Projects. Jamison Lane Alternatives Study, 8th Avenue Reconstruction Project and Carrie Furnace Development. Survey Manager for the projects.
+ Allegheny Power Spill Prevention, Control, and Countermeasure (SPCC) Retrofit in Pennsylvania, West Virginia and Maryland for Allegheny Energy, Inc. GAI was contracted for a Design/Build Project to provide all engineering, design, material procurement, construction, and project management related to design and installation of secondary containment systems within approximately 60 high voltage substations. The project included surveying for topography, aerial mapping and property data of substation sites. Survey Project Manager for the project.
+ Waterline Replacement Project in Pennsylvania for the Municipal Authority of Westmoreland County. Engineering services for 13,000'-long 48"-diameter water line. Survey Project Manager for the project.
+ Pennsylvania Department of Transportation, District 11-0 Engineering and Environmental Services Agreement. A wide range of environmental studies and engineering efforts for the following anticipated projects: bridge project reviews, small bridge replacement/rehabilitation projects, roadway projects, and environmental studies. Survey Project Manager for the project.
+ Monitoring Movement Survey for Allegheny Energy Service Corporation. Performed quarterly surveys to monitor movement on the Lake Lynn Power Station for the Alkali-Aggregate Project. The initial survey included setting permanent monuments along the top of the dam and establishing a set of coordinate values for each. The quarterly surveys performed established a set of coordinate values which were compared to the initial set of coordinate values. A table was generated identifying any change in Delta X and Delta Y values for each survey.

Project Manager

+ Interstate 79 Industrial Park Survey in Alleppo Township, Allegheny County, Pennsylvania for The Rubinoff Company. ALTA/ACSM Land Title Survey for an industrial park development. Project Manager responsible for the scheduling, overseeing the project, reviewing the title report and preparation of drawing.
+ Pressley Ridge Property Survey in Fayette County, Pennsylvania for the Western Pennsylvania Conservancy. Project Manager responsible for the project.
+ Survey for Aerial Mapping Targets in Allegheny County, Pennsylvania for Keddal Aerial Mapping. Project Manager responsible for the project.
+ Allegheny Ludlum WFR Building Subdivision in Washington, Pennsylvania for Allegheny Technologies Inc. Subdivision survey for the WFR building at the Allegheny Ludlum plant. Project Manager responsible for the project.
+ Survey for Catholic Institute at Hanky Farms in Allegheny County, Pennsylvania for the Diocese of Pittsburgh. Property and topographic survey services. Project Manager responsible for the project.
+ Global Positioning System (GPS) Aerial Control Project in Butler County, Pennsylvania for Keddal Aerial Mapping. Project Manager responsible for the project.
+ Veterans Administration Facilities in Aspinwall, Allegheny County, Pennsylvania for Alpha Corporation. Survey services project. Project Manager responsible for the project.
+ Penn Crossing Commercial Development in Harrison City, Westmoreland County, Pennsylvania for Lorasen Holdings, Inc. Site development project for a commercial and residential development that included property, topography and record surveys, and subdivision plans. Survey project manager responsible for the preparation of drawings, directing staff and approving survey related drawings.

Rodger K. Leddon, PLS

Survey Project Manager

Education

A.D. Mechanical Engineering Technology, Pennsylvania State University

A.D. Architectural Engineering Technology, Pennsylvania State University

Registrations/Certifications

Professional Land Surveyor, PA 1998, SU-051695-E

Affiliations

Pennsylvania Society of Land Surveyors, Member

Professional Employment History

Partridge Venture Engineering, PC, 2007-2008

Leddon Surveying, 2006-2007

Jackson Township, Butler County, Pennsylvania, 2003-2006

Leddon Surveying, 2001-2003

Bach, Leddon and Associates, Inc., 1986-2001

Richard G. Bach and Associates, PC, 1986-1998

Pittsburgh Pacific Processing, Subsidiary of INMETCO, INCO LTD, 1981-1986

Townsend/TRS, Division of Textron, 1976-1980

Professional Summary

Mr. Leddon specializes in managing all facets of surveying projects, including ALTA/ACSM land title surveys and subdivision plans. He has supervised field crews, performed property and construction stake-outs and prepared site plans, plot plans and topographic plans. He has also represented clients at for Township Planning Commissions and Township Board of Supervisors meetings.

Professional Experience

+ Confidential Wind Project in Tioga and Bradford Counties, Pennsylvania. Survey Project Manager responsible for review and approval of ALTA/ACSM surveys, placement of properties using record deeds and plans and field evidence obtained and writing property legal descriptions.
+ Monroeville Tech Park in Monroeville, Pennsylvania. Survey Project Manager responsible for road rights-of-way and property legal descriptions.
+ Allegheny Power Substations in Maryland, Pennsylvania and West Virginia. Survey Project Manager responsible for placement of substation properties using deeds and plans of record and field located evidence for properties in Pennsylvania. Performed property placement under the direction of GAI's licensed surveyor for Maryland and West Virginia.
+ Pressley Ridge in Ohiopyle, Pennsylvania. Survey Project Manager responsible for assigned field crews for performing boundary surveys using deeds and plans of record.
+ Partridge Venture Engineering in Sewickley, Pennsylvania. Director of Surveying responsible for all facets of land surveying including residential, commercial, and subdivisions. Supervised a two-man field crew. Responsible for scheduling, preparing field work for crew, ordering equipment and supplies and preparing required drawings for clients.
+ Leddon Surveying and Bach, Leddon & Associates, Inc. in Cranberry Township, Pennsylvania. Professional Surveyor responsible for all facets of land surveying including residential, commercial, mortgages, and subdivisions. Represented clients at Township Planning Commission and Township Board of Supervisors meetings.
+ Jackson Township, Zelienople, Pennsylvania. Zoning Officer responsible for plan reviews, meeting with residents and developers concerning subdivision and land development plan submittal requirements and answering questions concerning the Township ordinances. Attended all Planning Commission, Zoning Hearing Board and Township Board of Supervisors monthly meetings.

- Jackson Township, Zelienople, Pennsylvania. Code Enforcement Officer responsible for enforcing all codes of the Township including property maintenance, nuisance and building codes as well as reviewing building permit applications and issuing building and zoning permits.
- Richard G. Bach & Associates in Cranberry Township, Pennsylvania. Surveyor responsible for all facets of surveying including residential, commercial, mortgages, and subdivisions. Represented clients at Township Planning Commission and Township Supervisors meetings.
- Draftsman responsible for design and drafting duties including site plans, plot plans and topographic plans.
- Survey Technician responsible for surveying functions which included property and construction stake-outs as well as topography.
- Surveyor responsible for completing plans and surveys in accordance with municipal zoning and planning requirements for businesses and individuals.
- Townsend/TRS, Ellwood City, Pennsylvania. Process Assistant responsible for design/drafting functions including installation of new equipment, design improvements on existing equipment, and purchasing all necessary materials. Scheduled maintenance crews for all shifts. Responsible for inventory of repair parts and supplies. Product Draftsman responsible for preparing drawings for plant manufacturing, maintenance, and tool and die. Promoted to Assistant Maintenance Foreman supervising 15 maintenance personnel while continuing to design machine parts that were to be fabricated, ordered supplies and equipment.

Terry W. Queen
Senior Technician

Education

B.S. Civil Engineering 2004, West Virginia University Institute of Technology

Drafting and Design 1992, West Virginia Institute of Technology

Math & Physical Education 1986, West Virginia Northern Community College

Registrations/Certifications

Troxler Nuclear Densometer Certified

WVDOH Portland Cement Concrete Inspector

WVDOH Compaction Inspector

Relevant Training/Courses

40-Hour Health and Safety Trained

Professional Employment History

Ultrasonic Specialists, Inc., 1994-1995

Dan Hill Construction Company, 1989-1992

D.E. Leonard & Associates, 1987-1988

WACO, 1986-1987

W&W Fabrication, 1984-1985

Consolidated Coal Company, 1976-1984

ESMER & Associates, 1974-1976

Professional Summary

Mr. Queen specializes in construction monitoring for impoundment, site closure, infrastructure and municipal projects. He provides drafting for site planning, earthwork detailing, and pre-mining and pre-blast surveys. Mr. Queen develops preliminary and final designs for mine reclamation sites and mining permits, and site development, and prepares construction drawings for highway and bridge projects. He compiles engineering data from a variety of sources; processes data using well-defined methods and presents data in prescribed formats.

Professional Experience

Construction Monitoring

+ Monitored construction of 600,000 cubic yard rock buttress for a failed coal slurry impoundment. Work included monitoring of activities, troubleshooting, preparing daily logs and construction administration coordination for the West Virginia Department of Environmental Protection.
+ Monitored construction of municipal storm sewer project. Work included monitoring activities, troubleshooting, preparing daily logs and construction administration coordination for the Town of Gauley Bridge.
+ Monitored construction of approximately 30 miles of waterline. Work included monitoring installation activities, troubleshooting, preparing daily logs and approving pay item quantities for the West Virginia-American Water Company.
+ Construction monitoring for closure of municipal solid waste landfills. Work included monitoring construction activities, preparing daily reports and trouble shooting in Fayette, Kanawha, Mingo, and Braxton County, West Virginia for the West Virginia Division of Environmental Protection, Office of Waste Management. Closure activities included waste regrading, leachate collection and soil caps.
+ Construction monitoring for closure of the municipal solid waste Berkeley County Landfill in Berkeley County, West Virginia. Closure activities included regrading waste, intermediate cover, gas management, leachate collection and 125,000 square yards of HDPE geomembrane. Construction was completed over a two-year construction period.
+ Construction monitoring for closure of the municipal solid waste Mingo County Landfill in Mingo County, West Virginia. Closure activities included re-grading waste, intermediate cover, gas management, leachate collection, and 41,500 square yards of HDPE geomembrane.
+ Construction monitoring for cell expansion of a municipal solid waste and C&D landfill at S&S Landfill in Harrison County, West Virginia.

Construction included earthwork, leachate detection and collection, clay liner, and geomembrane liners.

+ Construction monitoring for reclamation of a failed coal slurry impoundment. Construction included earthwork, rock buttress, and drainage channels.
+ Construction oversight for a landslide reclamation project of a valley fill in Fayette County, West Virginia. Construction included collecting drainage in rock drains, rock buttress, earthwork, and drainage channels.
+ Monitored construction of approximately 13 miles of waterline. Work included monitoring installation activities, troubleshooting, preparing daily logs and approval of pay item quantities for the Shortline Public Service District.

Civil Engineering

+ Drafted preliminary roadway alignment, drainage structures, right-of-way, cut/fill lines to WVDOH standards for the South Side Bridge Ramp Replacement Project for the City of Charleston.
+ Preliminary and final site planning design of Abandoned Mine Lands (AML) sites for the West Virginia Division of Environmental Protection. Surveying, design drafting, site grading, haul roads, and drainage design.
+ Prepared construction documents for the Mill Creek Regional Water Supply Extension Project, Logan County, West Virginia. Project included design of water treatment plant, two water tanks, three booster stations, two master meter assemblies, and approximately 34 miles of waterline; and preparation of drawings. Drawings included 51 plan drawings using aerial photography as base mapping.
+ Prepared construction documents for the Cow Creek - Sarah Ann Water Supply Extension project in Logan County, West Virginia. Project included design of three water tanks, three booster stations, one master meter assembly, and approximately 19 miles of waterline; and preparation of drawings. Drawings included 38 plan drawings using aerial photography as base mapping.
+ Prepared construction documents of a 10-mile waterline in the Olive/Marshville/Catfish Hollow communities in Harrison County, West Virginia including surveying, subsurface investigation, and preparation of drawings, technical specifications, permit applications, construction quantities, and a cost estimate.
+ Owings Mine Complex, Harrison County, West Virginia. Evaluated water quality and potential passive Acid Mine Drainage (AMD) treatment system design at the mine complex site. Project included identifying monitoring points (streams and AMD discharges), sampling monitoring points for a 3-month period and drafting the conceptual design of passive AMD treatment system.
+ Owings Mine Complex, Harrison County, West Virginia. Subsurface investigation, grading and drainage design for four refuse piles and various other refuse areas, design of seals for eighteen mine portals.
+ Omega Mine Complex, Monongalia County, West Virginia. Prepared construction documents for the project. The project involved the injection of coal combustion byproduct grouts into mine workings to help alleviate the generation of Acid Mine Drainage (AMD). Work included preparation of drawings.
+ Prepared construction documents for the Harris Acid Mine Drainage (AMD) site in Harrison County, West Virginia. Project included designing channels, wet seals, and drain pipes; and preparing drawings.
+ Prepared construction documents for the Mainela Subsidence project in Fairmont, West Virginia. Project involved drafting of layout of injection plan for grouting under three residences; and preparing drawings.
+ Monitored subsurface exploration for Mon-Fayette Expressway in Monongalia County, West Virginia. Drafted geotechnical boring logs and cross sections for the West Virginia Division of Highways.
+ Drafted geotechnical boring logs and plan of borings for Easley Bridge in Mercer County, West Virginia for the West Virginia Division of Highways.
+ Drafted geotechnical boring logs, cross sections including cut/fill for a new railroad alignment in Clay and Nicholas Counties, West Virginia for Vaughan Railroad Company.

Architect / LEED Accredited Professional

Thomas R. Worlledge, AIA, LEED AP BD+C, REFP

Charleston Office Area Manager

EDUCATION:

Virginia Polytechnic Institute & State University
Master of Architecture - 1992

Fairmont State College, School of Technology
B.S. Architectural Eng. Tech. - 1983

PROFESSIONAL AFFILIATIONS AND REGISTRATIONS:

Registered Architect in:
West Virginia
Ohio
Pennsylvania
Tennessee
Virginia

National Board Certification:
NCARB #48600

President:
West Virginia Society of Architects

Member:
The American Institute of Architects
US Green Building Council
Sustainable Building Industries Council
Recognized Educational Facility Professional (REFP)

Former voting member:
ASHRAE 90.1 International Energy Code Committee

PROFESSIONAL EMPLOYMENT:

McKinley & Associates
Manager, Charleston Office
Charleston, WV (2005 to present)

Proactive Architecture Inc.
President
Charleston, WV (1999-2005)

Silling Associates Inc.
Vice President
Charleston, WV (1992-1999)

TAG Architects
Charleston, WV (1985-1990)

Alpha Associates Inc.
Morgantown, WV (1983-1985)

SUMMARY OF EXPERIENCE:

Thomas R. Worlledge is a skilled Architect with over 28 years experience who has received state wide design awards (including a West Virginia Chapter of the American Institute of Architects 2009 Merit Award) and placed in national design competitions. Mr. Worlledge has been involved in the design of several similar projects including the Mount Olive Correctional Complex, Huttonsville Correctional Center, St. Marys Correctional Center and the Industrial Home for Youth. As a LEED Accredited Professional and a recognized sustainable design expert, he has had articles published in state and national trade publications, spoken before architectural students, ASHRAE chapters, and business groups on sustainable design issues and was also a featured speaker at the 2001 Governor's Conference on the Environment and the 2001 Sustainable fair. He also teaches other design professionals in the art of High Performance School design, as a professional trainer for the Sustainable Building Industries Council. Mr. Worlledge has been involved in design of projects ranging in from a small home additions (one of which was featured on HGTV's New Spaces Show) to multimillion dollar projects such as the $20 million Parkersburg High School renovation and historic preservation project, the fast-tracked $6 million WVU IOT Maclin Hall dormitory renovation project, and the $12 million West Virginia State Office Building in Logan to name a few. Mr. Worlledge is a former voting member of the ASHRAE 90.1 Standards committee that forms the basis of the International Energy Code and is the president of the state chapter of the AIA.

NOTABLE PROFESSIONAL ACHIEVEMENTS:

St. Marys Correctional Center additions & alterations / St. Marys, WV

Huttonsville Correctional Center additions / Huttonsville, WV

Industrial Home for Youth / Salem, WV

Mount Olive Correctional Center / Mount Olive, WV

Putnam County Courthouse / Winfield, WV

Putnam County Judicial Building / Winfield, WV

2003 Courthouse Conditions Report for the West Virginia Courthouse Facilities Improvement Authority / Statewide, WV

WV State Police Academy - renovations to Buildings A, B, and C (Classroom/Dormitories); new Building D (Shooting Range Control Center) and new Multi-Purpose Building

McKinley & Associates Charleston Area Office (2009 WV AIA Design Award winner)

Hilltop Elementary School - Marshall County Schools (LEED Certified)

West Virginia State Office Building in Logan, WV (LEED Registered)

Appendix B

Service Summaries

gai consultants
transforming ideas into reality®

Water and Wastewater Engineering
Service Profile

Overview

GAI Consultants knows the present and future challenges facing water, wastewater, reclaimed water, and storm water utilities. Providing a unique blend of water and wastewater engineering and consulting services to both public and private clients throughout the United States, our seasoned licensed professionals deliver solutions that work.

Dedicated to helping communities, utilities, and private developers identify and maximize water supplies, GAI's water and wastewater solutions incorporate an array of options including groundwater, surface water, and potential purchase from neighboring communities. Utilizing advanced hydraulic software models to find practical, low cost answers, GAI uses modeling, resource optimization, and permit negotiation strategies to guide clients seamlessly through the consumptive use permitting process. We develop innovative and creative designs for water infrastructure that include raw water intakes and piping, ground wells, and treatment and storage facilities.

To help protect and preserve our environment, GAI designs wastewater infrastructure —collection pipelines, pump stations, force mains, and treatment facilities — that produce high quality effluent for reuse and nutrient removal. Reclaiming "used" water is essential to the efficient use of existing water supplies and GAI's services for water reuse promote the most versatile use, storage, and transmission options. We take care of public, commercial, and agricultural application site permitting and work with utilities and developers to foster agreements for sharing reuse water resources.

As a standard, GAI's engineers work closely with water clients to select the processes that best meet their objectives and resources. Our planning strategies involve advanced hydraulic and process engineering models that optimize future facilities and scheduling that moves projects forward. GAI has an in-house staff of construction inspectors that have many years of hands-on experience working in wastewater facilities.

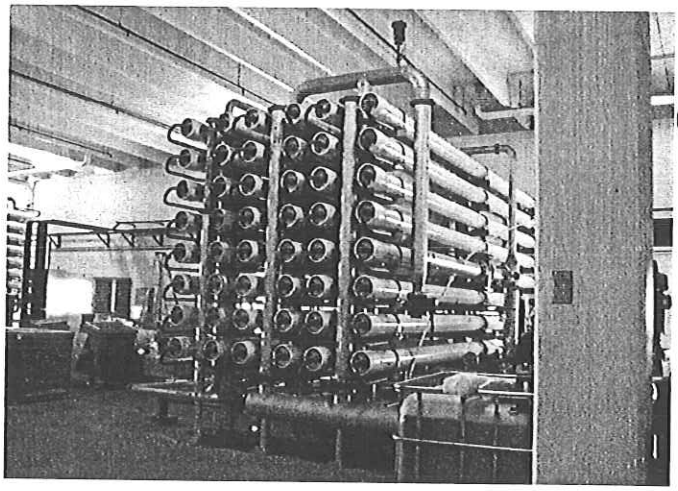
Water and wastewater utility system projects for capacity expansions or acquisitions that have significant capital needs are often funded with revenue bonds. The terms under which the bonds are issued are a function of market conditions and the financial feasibility of the project. GAI prepares written documentation to demonstrate financial feasibility, presents to rating agencies and bond insurers, and assists utilities in securing good credit ratings, obtaining low-cost bond insurance, and getting the best possible financing terms.

GAI works with utilities on the day-to-day issues that include permitting, operations, capital upgrades, and modernizing existing infrastructure. Our water specialists work closely with utilities to define and plan for the future through master planning that addresses water, wastewater, and storm water. With limited water resources available, GAI's value lies in our ability to help clients plan for future growth and determine the optimal use of existing water supplies.

GAI's water professionals are committed to tapping into their team's intricate knowledge and expertise in water engineering to meet every client's needs in water resources and supply, wastewater treatment, water reuse, revenue bond feasibility, and capital funding.

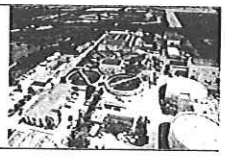
Water and Wastewater Engineering Services

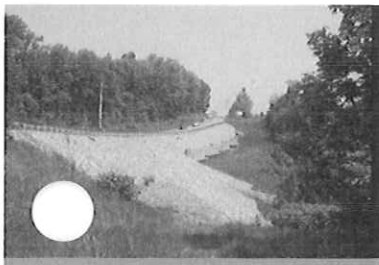
- Plant evaluation
- Project procurement strategies
- Capacity analysis reports
- Operation optimization
- Pilot studies
- Capital project planning
- System valuation and financing
- Rate and cost of service studies
- Feasibility and financial reports
- Proposal and grant preparation
- Facility siting
- Permitting assistance
- Ground well design
- Raw water intake studies
- Raw water transmission piping design
- Water treatment facility design
- Water transport and storage
- Wastewater collection and treatment design
- Wastewater disposal design
- Membrane softening system design
- Reverse osmosis system design
- Effluent disposal and reuse facilities design
- Project start-up



GAI Services Summary

- Environmental Engineering and Studies
- Transportation Planning and Design
- Cultural Resources Management
- Airport Planning and Design
- Land Development and Landscape Architecture
- Surveying/Gas Pipeline Survey/GIS/GPS
- Geotechnical and Structural Engineering
- Electric Transmission Engineering
- Mechanical and Electrical Engineering
- Construction Management, Inspection and Testing
- Water Resources and Wastewater Management
- Utility Management Consulting
- LEED® Engineering and Planning
- Design Build Delivery System
- Real Estate and Economic Counseling
- Computer Programming, Website Development
- Graphic Design, Video Production, Public Outreach
- Project Scheduling, Data Mgt., Training/Facilitation





gai consultants
transforming ideas into reality®

Geotechnical Engineering and Soil Science
Service Profile

Overview

Since 1958, GAI Consultants' achievements in helping clients manage the ground materials and geologic processes that affect their facilities, properties and project sites have been exceptional. Our geotechnical engineers and geologists are highly experienced in the basic principles of engineering geology, soil and rock mechanics, foundation engineering, subsidence, and mine studies.

Over the years, GAI has amassed formidable experience in full-scale load testing of foundations, calibrating analytical models, and developing computer programs for designing foundations. Our engineers analyze earth slope stability and retaining wall systems and design solutions for buildings, highways, and deep excavation projects.

The uneven rise of expanding subgrades can damage structures built where this danger was not anticipated. GAI investigates these types of movements, determines their causes, and designs repairs that stabilize the structure or eliminate the problem.

Thorough site explorations detect geologic and environmental hazards that can disrupt site or project development. Our geotechnical expertise in site design includes addressing areas subject to expansive materials, sinkholes, and subsidence such as those underlain by karst and underground coal and limestone mines. GAI also has extensive site design experience in areas of potential seismic activity and those with liquefaction potential.

For many projects, soil is a finite and critical resource. GAI moves projects forward by evaluating subsurface and soil conditions, and recommending effective use of available soils. Knowing that many engineering and environmental projects require large amounts of soil and unconsolidated rock material, we help clients plan excavation sequences, processing needs, and optimum soil placement.

GAI's broad range of services includes feasibility studies that identify contaminated soils. We evaluate chemical, biological, hydrological, and regulatory factors, and recommend acceptable, cost-effective monitoring and remediation solutions that meet regulatory requirements. We develop plans to re-establish permanent vegetation cover on disturbed lands and contaminated sites with customized fertility programs and seeding mixtures and we specialize in using coal combustion products to expand limited soil resources.

Soil is an excellent medium for re-using wastewater for farmland irrigation, and GAI's innovative design technologies include developing and implementing wastewater spray systems for vegetative fields. These systems evapotranspirate wastewater and organic contaminants are biodegraded into the topsoil.

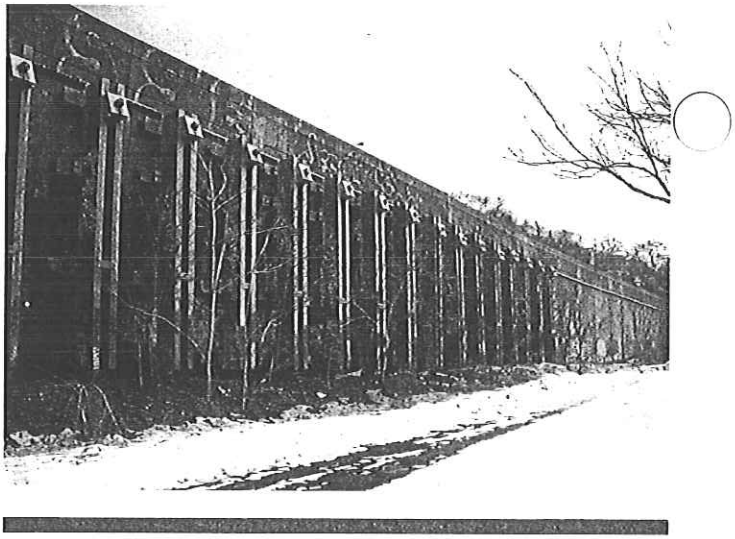
Covering the entire expanse of geotechnical engineering, geology and soil science, GAI remains a reputable source of professional consulting. We address the myriad of soil, rock, and foundation factors that affect existing features and future land use.

GAI has certified geotechnical, geological, soil science, geoarchaeology, geomorphology, and pedology professionals with years of academic training, research, and field experience. The in-house laboratory facilities that support our work are AASHTO Materials Reference Laboratory (AMRL) and Cement and Concrete Reference Laboratory (CCRL) certified and U.S. Army Corps of Engineers validated.

GAI's depth of experience and knowledge in geotechnical engineering, geology, and soil and rock mechanics represents a viable and valuable solution for unforeseen foundation issues.

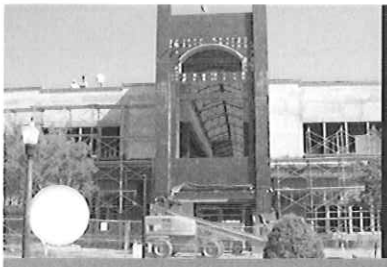
Geotechnical Engineering and Soil Science Services

- Subsurface studies and investigations
- Subsidence studies and remediation
- Geologic studies and reconnaissance
- Site characterization
- Undisturbed soil sampling
- Soil borrow investigations
- Foundation recommendations, design and research
- Movement monitoring plans
- Groundwater monitoring plans
- Geogrid reinforcement
- Geosynthetic materials design
- Mechanically stabilized earth slope design
- Slope stability analysis and design
- Earth and rock retaining system design
- Soil and rock anchors
- Concrete, rock and grout strength & compressibility testing
- Cone penetrometer testing
- Pile static and dynamic load testing
- Pile driving inspection
- Geotechnical construction monitoring
- Materials testing
- Soil bioremediation and landfarming
- Waste water disposal and agricultural utilization
- Soil improvement techniques
- Coal combustion by-products (CCPs) soil utilization
- Revegetation and reclamation
- Geoarchaeology



GAI Services Summary

- Environmental Engineering and Studies
- Transportation Planning and Design
- Cultural Resources Management
- Airport Planning and Design
- Land Development and Landscape Architecture
- Surveying/Gas Pipeline Survey/GIS/GPS
- Geotechnical and Structural Engineering
- Electric Transmission Engineering
- Mechanical and Electrical Engineering
- Construction Management, Inspection and Testing
- Water Resources and Wastewater Management
- Utility Management Consulting
- LEED® Engineering and Planning
- Design Build Delivery System
- Real Estate and Economic Counseling
- Computer Programming, Website Development
- Graphic Design, Video Production, Public Outreach
- Project Scheduling, Data Mgt., Training/Facilitation



gai consultants
transforming ideas into reality®

Structural Engineering
Service Profile

Overview

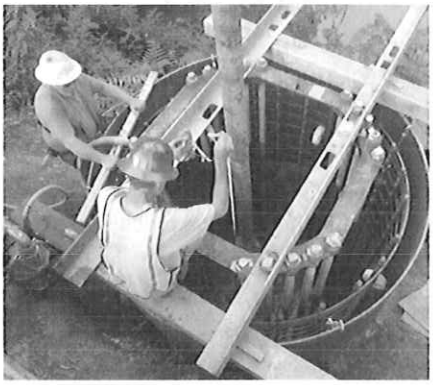
In 1958, with dedication and commitment, GAI Consultants began using advanced technology in applied mechanics to solve complex structural engineering problems and address structural analysis and design projects. Our innovative structural engineering staff is supported by an AMRL/CCRL certified materials testing laboratory, advanced computer design and analysis capabilities, and long-established working relationships with independent consultants who assist in solving unique challenges.

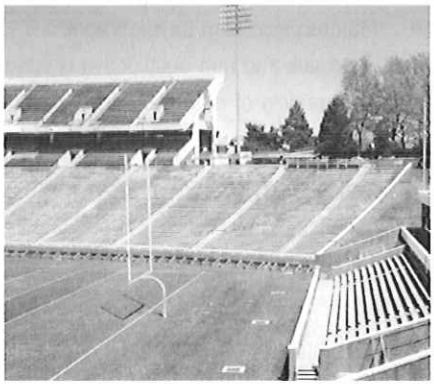
GAI's specialty designs for building and sheet metal fabrication include steel stacks, and generator shrouds, and a variety of unique specialty structures including theme park rides and tracks, rigging and safety equipment, theatrical props, catwalks, and vehicle frames. The structural engineering specialists at GAI translate sound engineering concepts into comprehensive reports, plans, and specifications that meet clients' specific needs.

Our success with structural rehabilitation projects covers a broad range of structures from storage tanks and silos to buildings, parking garages, and stadiums to dams and power plants. GAI's professionals identify and evaluate structural deterioration causes and develop remediation measures that solve space, capacity, and performance issues. We tailor structural assessments to each client's specific needs and provide alternative solutions with economic, operational, and environmental considerations.

GAI's structural engineers have years of practical experience in designing concepts for long-term or temporary solutions. Our teams' combined efforts in structural, geotechnical, mechanical, electrical, and transportation engineering bring expertise in structural mechanics, materials engineering and characterization, hydraulic engineering, design, heavy lift rigging consultation, and computer programming to each project.

When GAI inventories industrial or commercial facilities, we record conditions, store the data, and develop maintenance schedules so our clients can service their buildings and equipment on a regular basis. Our inspectors also investigate the structural condition of residential buildings, including cracking, settling, and leakage. Although residential construction methods vary widely and foundations can be affected by soil conditions and hillside stability, GAI can determine the root cause of building distress. Our seasoned staff brings extensive experience with materials testing and non-destructive testing and we regularly monitor structure and foundations movements.



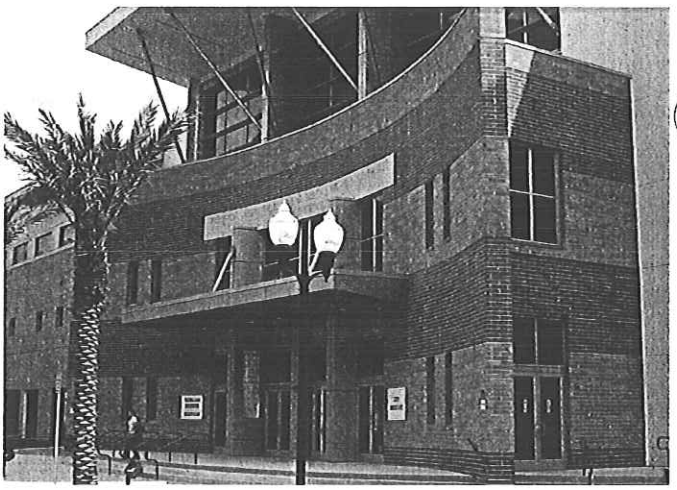


GAI prepares plans and specifications for structure design and rehabilitation that focus on constructability implementing emerging developments in construction materials and equipment. We provide construction services that range from specific construction activity observation to full-time field monitoring.

Over the years, GAI has established valuable working relationships with independent consultants in related disciplines such as architecture and corrosion engineering to complement our in-house efforts. This problem-solving approach brings the appropriate technical viewpoint to each project and delivers results.

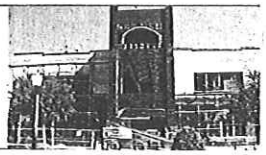
Structural Engineering Services

- Structure and foundation analysis and design
- Existing structure capacity investigations
- Threshold inspections
- Heavy lift rigging consultation
- Soil-structure interaction studies
- Structural reliability studies
- Vibration and seismic analyses
- Fatigue analysis
- Noise and vibration problem design mitigation
- Theoretical and experimental stress analyses
- Analysis and simulation software development
- Load and stress determinations
- Instrument and on-site testing
- Failure investigations
- Catastrophic damage inspections and design
- Visual inspections
- Detailed deficiencies documentation
- Testing program development
- Rehabilitation design
- Remedial measures analysis and design
- Engineer's construction estimates
- Life-cycle costing
- Underwater and tall structure inspection
- Hazardous waste site structural inspections
- Construction monitoring
- Maintenance plan development
- Materials and non-destructive testing
- Peer review of design by others
- Expert witness



GAI Services Summary

- Environmental Engineering and Studies
- Transportation Planning and Design
- Cultural Resources Management
- Airport Planning and Design
- Land Development and Landscape Architecture
- Surveying/Gas Pipeline Survey/GIS/GPS
- Geotechnical and Structural Engineering
- Electric Transmission Engineering
- Mechanical and Electrical Engineering
- Construction Management, Inspection and Testing
- Water Resources and Wastewater Management
- Utility Management Consulting
- LEED® Engineering and Planning
- Design Build Delivery System
- Real Estate and Economic Counseling
- Computer Programming, Website Development
- Graphic Design, Video Production, Public Outreach
- Project Scheduling, Data Mgt., Training/Facilitation



gai consultants
transforming ideas into reality®

Surveying
Service Profile

Overview

The survey teams at GAI Consultants are handpicked for each assignment from a skilled group of experienced, dedicated survey professionals. Their services range from boundary surveys for land development and topographic surveys for environmental mapping to specialized surveys for archaeology projects. Our survey crews conduct surveys for any discipline in any market including transportation, land development, real estate, industry, and energy.

GAI's field survey crews work closely with in-house mapping specialists and an extensive library of computerized mapping software including Terramodel, Arc-Info, GRASS, Microstation and AutoCAD.

Design Surveys — Design surveys provide the foundation upon which all designs are based. GAI records boundary line locations, topography, physical features at the site, on-site buildings and utilities, encroachments, and easements. With this information mapped in detail, our staff is able to produce quality foundation design plans for our clients.

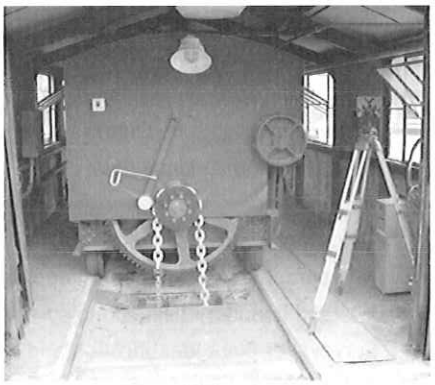
Topographic Surveys — GAI uses the latest technology in field equipment, recorders, and computer mapping to produce accurate topographic surveys. They incorporate ground run, aerial, tree, utility location, wetland, floodplain and hydrographic surveying and mapping into documents used by our CADD designers to develop plan packages.

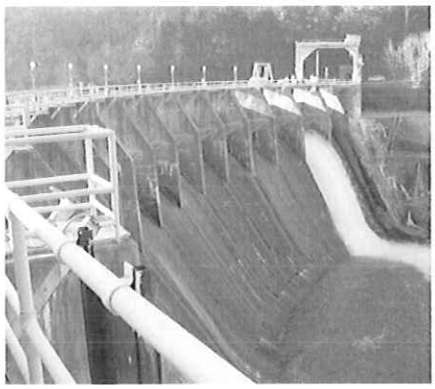
Construction Surveys — Conducted on site during the initial preparation stage of construction, these surveys provide information critical to establishing location and elevation. GAI saves clients and contractors thousands of dollars in potentially damaging lost time and litigation liability by providing this key project information early.

Boundary Surveys — GAI conducts boundary surveys for land titles and ownership verification, real estate financing, as-built delineations, real estate appraisal and sales, insurance documentation, encroachment delineation, boundary line disputes, subdivisions, rezoning and variances.

Control Surveys — GAI conducts control surveys to establish a series of grid lines and points that pinpoint physical features and combines the data to establish horizontal and vertical control points and a series of independent triangulation measurements. We use this information to verify, compare, and develop reliable and accurate control grids.

Hydrographic Surveys — These surveys support wetland mitigation and storm water management. Hydrographic surveying requires trained staff, specialized equipment, and extensive experience and GAI's survey professionals conduct these surveys for bridge structures, wetlands, and lakes, river, and ocean shorelines.



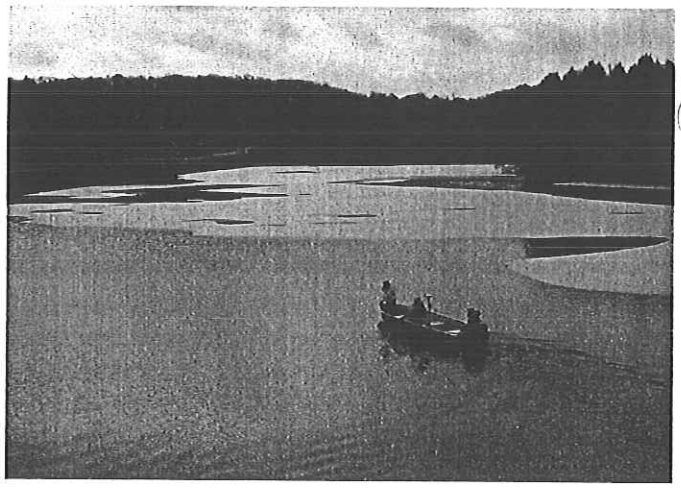


GAI uses state-of-the-art Global Positioning System (GPS) equipment to conduct horizontal and vertical control surveys. Combining GPS technology with conventional survey methods saves clients time and money. With GPS technology, GAI's surveyors can reference global datum, and easily re-create control points. We also perform a broad range of specialized surveys for utility location, legal determinations, archaeological and historical data documentation, and eminent domain technical services support.

GAI's comprehensive surveying services cost-effectively meet the land documentation needs of public and private landowners, developers, and government agencies. Organized for quick response, GAI's survey teams and technology provide answers for our clients' specialized survey and data management needs.

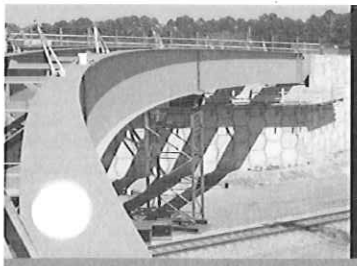
Surveying Services

- Boundary and property surveys
- ALTA/ACSM surveys
- Subdivision and condominium plats
- Ownership dispute resolution
- Re-zoning and variance data
- Construction layout and record surveys
- Topographic surveys
- Hydrographic surveying and mapping
- Wetland boundary delineating surveys
- Surveys for plant identification and planting
- Construction staking surveys
- Eminent domain technical support
- Trimble 5700 Series GPS Total Stations
- GPS Mobile Real Time Kinematic (RTK) system
- GPS Global datum referencing



GAI Services Summary

- Environmental Engineering and Studies
- Transportation Planning and Design
- Cultural Resources Management
- Airport Planning and Design
- Land Development and Landscape Architecture
- Surveying/Gas Pipeline Survey/GIS/GPS
- Geotechnical and Structural Engineering
- Electric Transmission Engineering
- Mechanical and Electrical Engineering
- Construction Management, Inspection and Testing
- Water Resources and Wastewater Management
- Utility Management Consulting
- LEED® Engineering and Planning
- Design Build Delivery System
- Real Estate and Economic Counseling
- Computer Programming, Website Development
- Graphic Design, Video Production, Public Outreach
- Project Scheduling, Data Mgt., Training/Facilitation



gai consultants
transforming ideas into reality®

Design Build
Service Profile

Overview

Design Build takes a practical approach to projects relying on a united team to efficiently move a project from planning and design through construction. Clients benefit from smoother outcomes in the field when design concepts are shared early, the project goals are understood, and the entire effort is coordinated in the office. GAI Consultants is a design-build professional that collaborates with reputable construction firms to "value engineer" projects.

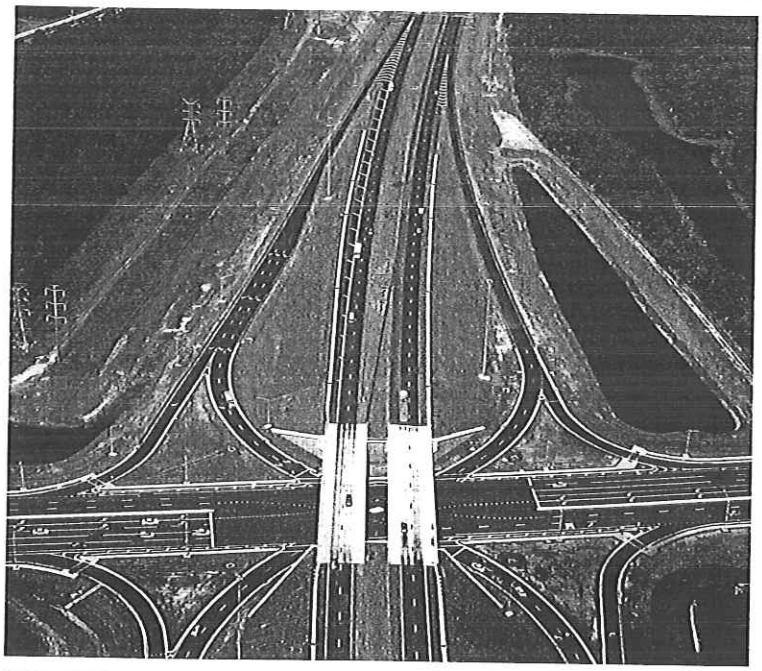
When design, engineering, construction, and permitting activities are integrated under one team, project timelines can shrink up to 40 percent. GAI works with developers, private industry, and government agencies to plan and develop projects for commercial, residential, industrial, and recreational markets. Teaming with the project contractor in the early design stages is an economical way for GAI's engineers, planners, and environmental specialists to develop feasible plans that address social and environmental impacts. Our trusted relationships with permitting agencies — built over several decades — have proven that we can streamline the approval process, reduce risk, and lower costs.

With GAI on a design-build team, using the critical path method is no longer a time-consuming game of catch-up with field activities. We have premier scheduling software and specialists in-house that create comprehensive, easy-to-use project schedules tailored to the specific needs of each client.

From complex infrastructure improvements to single site developments, our design-build teams use innovative scheduling and strategic planning to develop preliminary and final designs that meet project goals. We are members of the Design-Build Institute of America, demonstrating our commitment to this project delivery system. With over 50 years of experience, GAI is a Design-Build partner dedicated to building superior projects.

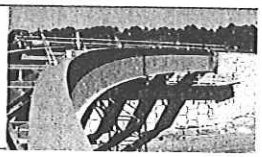
GAI's Design Build Services

- Conceptual Design
  - Proactive evaluation of plans
  - Creative design concept modifications
  - Utilization of value engineering
  - Strategies to maintain good public relations
  - Conceptual design review that addresses agency permitting
- Construction Cost Estimating
  - Detailed construction cost estimates
  - Consideration of all required agency permits
  - Coordination with entire Design-Build team
  - Accurate construction pricing
- Preliminary and Final Engineering
  - Preliminary plan drafts based on conceptual designs
  - Finalized plans following designated design standards
  - Review for constructability
  - Construction sequencing optimization
- Permitting
  - Thorough understanding of agency regulations and standards
  - Strong relationships with local, state, and federal permitting agencies
  - Immediate start of permitting process after Notice-to-Proceed
- Construction Scheduling
  - Early review of construction scheduling and milestones
  - Schedules based on conceptual design objectives
  - Understanding of permitting and agency review impacts on schedule
  - Expedited permitting processes
- Constructability Review
  - Identification and resolution of potential areas of conflict in conceptual design
  - Examination of value engineering potential
  - Strong communication program that addresses potential challenges, material deliveries, and equipment maneuvering
- Value Engineering
  - Incorporation of value engineering concepts into every stage of design
  - Proactive focus on cost reduction throughout the project



GAI Services Summary

- Environmental Engineering and Studies
- Transportation Planning and Design
- Cultural Resources Management
- Airport Planning and Design
- Land Development and Landscape Architecture
- Surveying/Gas Pipeline Survey/GIS/GPS
- Geotechnical and Structural Engineering
- Electric Transmission Engineering
- Mechanical and Electrical Engineering
- Construction Management, Inspection and Testing
- Water Resources and Wastewater Management
- Utility Management Consulting
- LEED® Engineering and Planning
- Design Build Delivery System
- Real Estate and Economic Counseling
- Computer Programming, Website Development
- Graphic Design, Video Production, Public Outreach
- Project Scheduling, Data Mgt., Training/Facilitation



Appendix C

Past Projects

Huttonsville Correctional Facility Waste Water Treatment Plant Improvements

Randolph County, West Virginia

GAI Project Manager:
James A. Hemme, P.E., L.R.S

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

ient:
West Virginia Division of Corrections

Client Contact:
Bill Wimer
304.558.6055

Completion Date:
July 2010 (est)

#E070664.05

Brief Project Description

GAI Consultants, Inc., through Silling Associates Architects, designed process improvements for the Huttonsville Correctional Facility's 200,000 gallon per day wastewater plant. The wastewater plant was constructed in the mid 1990's as part of a large expansion project. Since that time, increasing monthly flow rates, elevated wastewater temperatures, grease and trash have caused critical operational concerns. GAI worked with correctional facility staff to explore these issues and formulate a retrofit that would not adversely impact plant operations during construction.

GAI initially performed extensive research to compare historical wastewater flow to precipitation events, to determine if stormwater inflow and infiltration (I&I) was a contributing factor. Results of that study indicated that I&I was not a substantial contributor to the increased flow. The solution came in the form of a partially buried 50,000 gallon reinforced concrete surge tank/basin sized to handle the excessive peak flows noted in historical flow monitoring records.

The partially buried tank is not exposed to direct sunlight, has an open top, and acts as a stilling basin to assist in cooling the wastewater. At the entrance to the surge basin, a new screen system was installed to improve removal of the growing amount of trash encountered in correctional facility wastewater, while still allowing the important organic matter to continue on to the treatment process. The proposed facility retrofits were designed to be constructed adjacent to the existing plant and supplement its operation without impacting the current and successful treatment system.

Work Tasks/Services

- Retrofit design
- Historical wastewater flow analysis
- Inflow & Infiltration (I&I) studies
- Recommendations for an oil and grease separator to be installed at the end of the surge basin

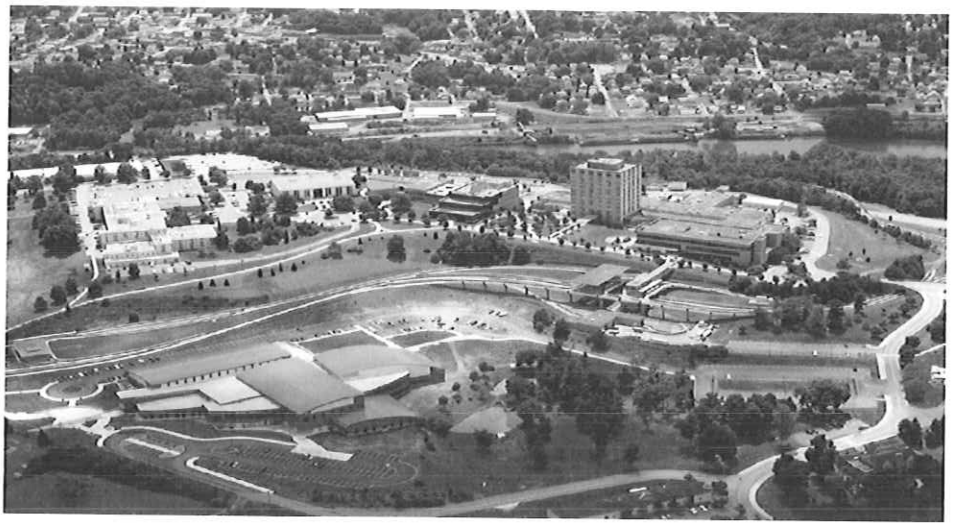
Value Added Innovations

An oil and grease separator was added to the end of the surge basin to remove oils and grease. By installing this filter at the end of the tank system, cooling time was maximized to allow the oils and grease to better coalesce, so more could be captured, improving removal rates.

Land Development
Utility Infrastructure Design

gai consultants
transforming ideas into reality®

WVU Evansdale Campus Utility Infrastructure
Morgantown, Monongalia County, West Virginia



GAI Project Manager:
Jeffrey A. Parobek, P.E.

Project Team:
GAI Consultants, Inc. (Prime)

Client:
Perfido Weiskopf Wagstaff & Goettel

Client Contact:
Alan Weiskopf, AIA
412.391.2884

Completion Date:
Ongoing 2012

#C110691.00

Brief Project Description

GAI performed evaluation of storm drainage, sanitary and water system infrastructure for West Virginia University's 150-acre Evansdale Campus in Morgantown, WV, as part of the University's capital improvement program for the campus. Work included design of relocation for various utilities to avoid new facilities, and upgrades to provide additional service capacity needed for the project. The project included design of stormwater management facility upgrades to control development-generated runoff, and sustainable stormwater provisions to address water quality. GAI also designed parking lot expansions to replace spaces lost by building construction implemented during the capital improvement program.

Work Tasks/Services

- Survey
- Planning
- Utility Design
- Stormwater Management Design
- Erosion and Sediment Control

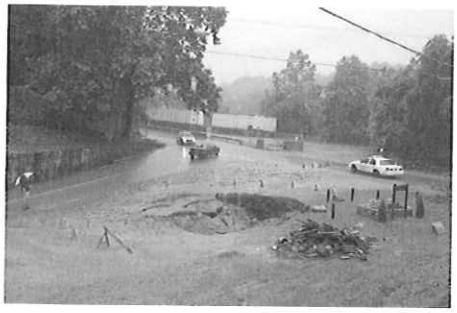
Value Added Innovations

Sustainable Stormwater Techniques

Transportation
Storm Sewer Rehabilitation

gai consultants
transforming ideas into reality

Twilight Drive/Barlow Drive Storm Sewer
Kanawha County, West Virginia



GAI Project Manager:
Contact: Charles F. Straley

Project Team:
GAI Consultants, Inc. (Prime)

Client:
City of Charleston

Client Contact:
Chris Knox, P.E.
304.348.8106

Completion Date:
2003

#E030261

Brief Project Description

GAI Consultants, Inc. (GAI) performed professional engineering services to address a deteriorated storm sewer comprising a 120-ft. stone arch culvert, a 180-ft. stone box culvert, and 420 feet of bituminous-coated corrugated metal pipe arch. The condition of the sewer was threatening the integrity of the road surface above it and would eventually impact the flow of storm water through the structure. GAI provided a thorough investigation of the drainage structure and lateral feeds, a subsurface investigation to establish depth of rock, and a survey of the project area.

When a portion of the stone arch collapsed following a flood in the area, GAI was contacted to take borings form the surface in the area of the collapse and determine the integrity of the collapsed structure. GAI performed additional survey to address railroad right-of-way and required permits. GAI restructured their design effort to include replacement of the damaged portion of the sanitary sewer and relocation. During construction, GAI observed the work for adequate completion within the required schedule. Since this project required emergency repairs, it was completed on a fast track schedule.

Work Tasks/Services

- Sanitary sewer reconstruction and relocation
- Roadway design
- Concrete design
- Underground Storage Tank (UST) removal
- Subsurface investigations
- Field reconnaissance to determine structure integrity
- Property survey and right-of-way determination
- Data analysis and recommendations for repair
- Construction drawings and specifications
- Construction monitoring
- Emergency consultation for temporary stabilization

Value Added Innovations

An aluminized arch was used to reconstruct the stone arch that collapsed during a subsequent flood.

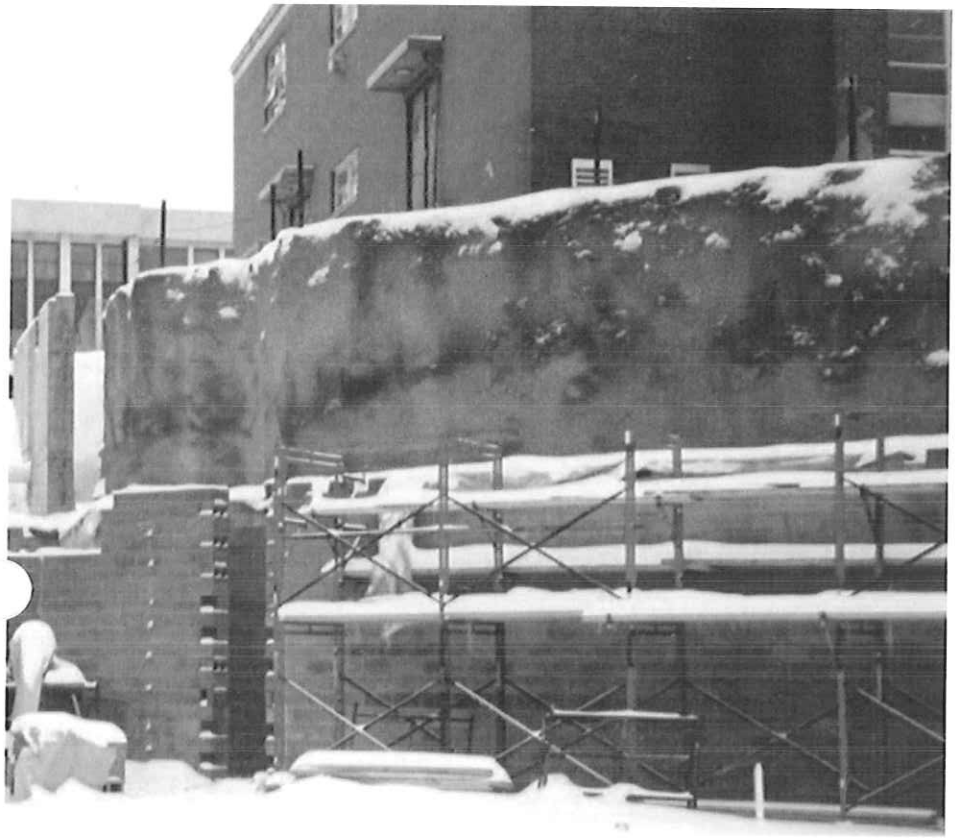
Lasting Benefits

GAI rehabilitated the stormwater drainage system in this area, and provided the necessary separation of sanitary sewer and storm water flows. In addition, the intersection of Twilight Drive and Barlow Drive in the City of Charleston was improved for public transportation.

Geotechnical & Structural
Retaining Wall Design

gai consultants
transforming ideas into reality

Tied Back Tangent Caisson Retaining Wall - West Liberty State College
West Liberty, West Virginia



GAI Project Manager:
F. Barry Newman, P.E.

Project Team:
GAI Consultants, Inc. (Prime)

Client:
The HDMR Group, Inc. (Architect)

Client Contact:
Donald McIntyre, AIA
304.346.0701

Completion Date:
November 1998

#C960220

Brief Project Description

The existing basketball arena at West Liberty State College, founded on expansive materials, was showing signs of structural deterioration due to heaving foundations.

A large portion of the arena was demolished and rebuilt with an extension into the adjoining hillside. In consideration of possible risk to the adjacent Blatnik Hall, which houses the campus swimming pool and other physical education facilities, GAI was contracted to provide structural design and construction support services for a tangent caisson retaining wall.

The 126-foot-long wall consisted of thirty-six 36-inch diameter drilled shaft concrete caissons spaced 42 inches apart with two levels of tied back post-tensioned steel strand anchors. The maximum retained height of soil is 26-feet, 3-inches.

Work Tasks/Services

- Geotechnical Investigation Including Two Soil Borings
- Wall Type Recommendations Consistent with Risk
- Structural Design of Tangent Caisson Wall with Two Tiers of Tied-Back Steel Strand Post-Tensioned Anchors, Including Construction Specifications
- Construction Support Services Consisting of Construction Monitoring of Caisson Installation, Tie-Back Installation, Tie-Back Testing, Shop Drawing Review, and Construction Progress Meetings with Client, Contractors, and State Government

Land Development
Sewer Evaluation Services

gai consultants
transforming ideas into reality®

City of Pittsburgh Sewer Evaluation
Allegheny County, Pennsylvania

GAI Project Manager:
Jeffrey Parobek, PE
Anthony F. Morrocco, PE

Project Team:
GAI Consultants, Inc. (Prime)

Client:
City of Pittsburgh
Water & Sewer Authority

Client Contact:
David Troianos
412.255.8870

Construction Cost:
$3 Million

Completion Date:
1994-1999

#C920581

Brief Project Description

GAI Consultants, Inc. (GAI) performed an investigation into the capacity and condition of several sewers within the City of Pittsburgh. Sewers were internally inspected by use of either video camera or by sending a diver into the pipe. Sewers investigated included: Dinwiddie Street 36" combination sewer, Carnegie Mellon 72" combination sewer, California Avenue 36" combination sewer, Ellsworth Morewood 15" combination sewer, and Merchant Street 60" combination sewer.

Work Tasks/Services

- Field surveys
- Site investigations (internal TV inspections, residential user survey, flow meter monitoring, utility and geotechnical investigations, dye testing)
- Hydrologic and Hydraulic (H&H) investigations
- Hydrologic model development
- Preliminary design and analysis
- Alternative corrective action plans

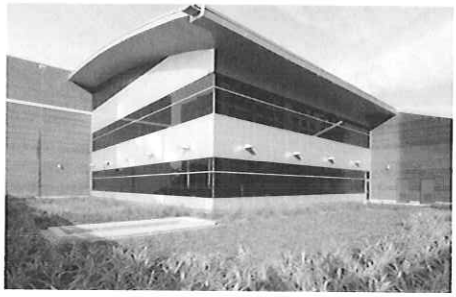
Maintenance and protection of vehicular and pedestrian traffic

- Detailed separation and re-lining plans and specifications
- Construction services

Land Development
Structural/Civil Engineering & Landscape Architecture

gai consultants
transforming ideas into reality

Orlando Fire Department Headquarters and Fire Station #1
Orange County, Florida



GAI Project Manager:
Robert Bee, P.E.

Project Team:
Wharton-Smith, Inc. (Prime)
GAI Consultants, Inc. (Subconsultant)
Schweier-Waldroff Architects, Inc.
John J. Christie & Associates

Client:
City of Orlando

Client Contact:
William B. Burns, P.E., AICP
407.246.3181

Construction Cost:
$17,000,000

Completion Date:
September 2009

#A070193.01/.02

Brief Project Description

GAI Consultants (GAI) provided structural/civil engineering and landscape architecture for the combined three-story Fire Station No. 1 and Fire Department Headquarters--Orlando's sixth LEED®-certified building. The design-build team used a cast-in-place concrete moment frame for the 59,000-sq-ft structure. The frame and structural components were designed to withstand 130-mph hurricane wind forces. Cast-in-place first to second floor exterior walls, concrete masonry wall design, and a curved structural steel beam at the third-floor-high roof highlighted the design.

Work Tasks/Services

- Structural design
- Drainage design
- Landscape/hardscape design
- Construction administration

Major Accomplishments

The design-build team succeeded in creating a highly functional and artistic structure within a tightly constrained location, visible from an elevated highway and along railroad tracks, with only 18 months allowed for design and construction.

Value Added Innovations

Operational demands were met with the inclusion of large equipment bay openings on both the north and south sides. Other design features included a complex slab-on-grade layout, a curved balcony at the second story, and a 351-foot radius on the high roof.

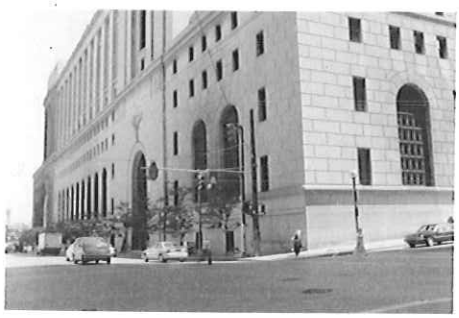
The 2,200 sq. ft. LEED®-qualified "Green Roof," signature lobby entry, and design for Fire Station No. 1's historic "Brass Bell," added to the aesthetics of this facility.

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

Geotechnical & Structural
Structural Rehabilitation Services

gai consultants
transforming ideas into reality

Federal Building Rehabilitations
Various Counties, Pennsylvania and Virginia



GAI Project Manager:
Florian L. Bechtold, P.E.

Project Team:
GAI Consultants, Inc. (Prime)

Client:
General Servcies Administration, Region 3

Client Contact:
GSA representative
215.656.5700

Completion Date:
994

#C890522

Brief Project Description

GAI Consultants, Inc. (GAI) has worked closely with the General Services Administration to rehabilitate federal office, parking garage, and courthouse buildings requiring temporary and permanent repairs. GAI provides engineering analyses, repair recommendations, and construction management for structure rehabilitations and conversions.

Using movable staging, GAI performed a close-up inspection of the brick façade of a 9-story office building, and prepared construction documents for replacement of the façade with a metal panel wall system. Another office site required temporary repair designs to address a problem with falling bricks. GAI performed destructive investigations and materials testing as part of their engineering analysis of the façade, and developed two conceptual permanent repair designs to rehabilitate the building's brickwork and metal stud backup system. GAI had previously performed an in-depth structural inspection at the same building to rehabilitate a three-story parking garage.

Inspection and analysis work at the Executive Institute Complex in Virginia culminated in the development of design plans to repair the balconies of the two-story structure, including addressing architectural treatments. Another condition survey was necessary to develop construction plans and specifications to convert a former mail-handling facility to a basement parking facility, and that project required installation of an elevator.

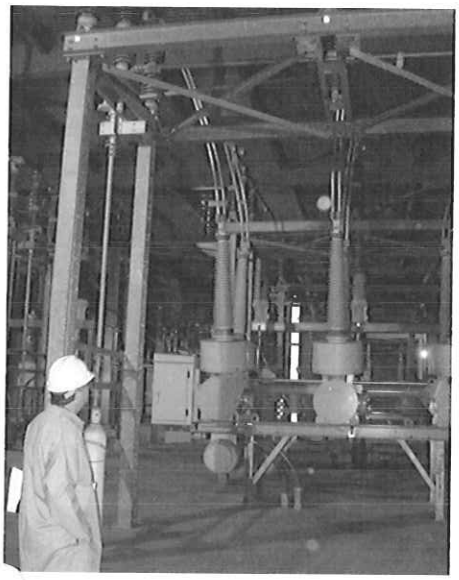
GAI's range of expertise in structural inspection ranges from the basement to the roof. GAI provided structural inspection and analysis to upgrade a 120-foot high antenna tower mounted on the roof of a federal building. The design plans addressed support, bracing, aviation obstructions, and lighting.

Work Tasks/Services

- Field survey
- Condition survey
- As-surveyed condition plans
- In-depth structural inspection
- Close-up inspection with movable staging
- Engineering analysis
- Destructive investigations
- Materials testing
- Allowable loading determination
- Existing lighting evaluation
- Temporary and permanent repair recommendations and designs
- Construction documents
- Construction management and construction inspection services

gai consultants
transforming ideas into reality®

Gay Street Substation Analysis



GAI Project Manager:
Steven S. Miller, P.E.

Project Team:
Underground Systems, Inc. (Prime)
GAI Consultants, Inc. (Sub)

Client:
Underground Systems, Inc.

Client Contact:
Steven Walldorf
914.273.8727

Completion Date
1992

#C910261.00

Brief Project Description

GAI Consultants, Inc. was contracted by Underground Systems Inc. to complete a structural analysis of the American Electric Power Gay Street No. 2 Substation building for stability considering loads imposed by proposed installation of new pressurizing plant equipment.

The analysis included computing reserve capacities of the reinforced concrete floor slab, structural steel beams and girders and existing connection capacities. The structure capacities were used to determine an appropriate path to follow when moving the pressurizing plant through the building to the final installation location and the appropriate temporary structural reinforcement necessary during staging. The structure was also analyzed for the operating loads of the pressurizing plant in its installed location and recommendations were provided for the structural modifications required to support the operating loads.

Work Tasks/Services

- Structural Analysis
- Recommendations for temporary and permanent structural reinforcing
- Design for reinforcement solutions

gai consultants
transforming ideas into reality

Historic Day Covered Bridge Restoration

Washington County, Pennsylvania


Before


After

GAI Project Manager:
Howard J. Braun, P.E.

Project Team:
GAI Consultants, Inc. (Prime)

Client:
Washington County
Planning Commission

Client Contact:
Lisa L. Cessna
724.228.6811

Completion Date:
2003

#C990224

Brief Project Description

Nationally Registered Day Bridge on Township Road T-339 near Route 18 was built in c. 1875. It is one of 25 covered bridges remaining in Washington County, most of which are built of 19th-century plentiful and durable white oak. GAI Consultants, Inc. (GAI) performed an in-depth inspection and structural analysis of this 38'-long historic covered bridge, and developed plans for its restoration. The wood deck was replaced and aesthetic treatments were designed to repair the substructure. Approach roadway improvements were made to Township Road T-339 that carries the bridge over Short Creek.

GAI also provided construction monitoring services for the restoration of the bridge. Critical components of the construction project included selective demolition of the existing structure as repairs were made. A new roof and a fresh coat of paint completed the restoration.

Work Tasks/Services

- In-depth inspection and structural analysis
- Hydrologic and Hydraulic (H&H) analysis and report
- Geotechnical investigation
- Timber truss rehabilitation
- Superstructure replacement
- Wood deck replacement
- Existing substructure evaluation and repair
- Aesthetic substructure treatment
- Approach roadway improvements
- Construction consultation and inspection

Value Added Innovations

GAI designed and detailed the new superstructure to be totally independent of the timber trusses, therefore maintaining the historic fabric of the covered bridge while providing unrestricted live load to use the bridge.

Lasting Benefits

The National Register of Historic Places recognizes the restored Day Covered Bridge as an important historical transportation resource in Pennsylvania.

Plymouth Hall Apartments Rehabilitation

Philadelphia, Pennsylvania

GAI Project Manager:
Harry A. Trout, CIH, CSP, QEP, CHMM, LEED® AP

Project Team:
GAI Consultants, Inc. (Prime)

Client:
Dale Corporation

Client Contact:
Mike Dunn
215.886.6440

Project Fees:
$150,000

#F090643

Brief Project Description

GAI Consultants, Inc. (GAI) provided environmental and geotechnical evaluation services, infiltration testing, and construction materials testing and inspection services for a proposed 53-unit apartment building. The Philadelphia Housing Authority (PHA) needed to rehabilitate Plymouth Hall after a fire left the building vacant for several years.

Funded by the U.S. Department of Housing and Urban Development (HUD), the renovation includes 47 efficiency and 6 one-bedroom apartment units, a management office, and a 500 sf addition for a community room. GAI conducted an Environmental Phase I evaluation of the property, as well as a lead and asbestos surveys, and provided oversight during asbestos abatement activities. The new addition to the building necessitated a geotechnical engineering evaluation by GAI, and possible basement floor slab and foundation settlement issues were examined.

Work Tasks/Services

- Environmental Phase I evaluation
- Lead and asbestos survey and abatement
- Geotechnical engineering evaluation
- Infiltration testing
- Construction engineering testing and inspection

Lasting Benefits

Upon completion, the Plymouth Hall apartments will increase available housing for public assistance recipients. PHA already houses over 80,000 residents. The building incorporates low VOC paints and Energy Star rated appliances, making the building not only attractive, but more environmentally-friendly.