



*Expression of Interest*

**WEST VIRGINIA SCHOOLS FOR  
THE DEAF AND THE BLIND  
A/E FOR DEMOLITION, RECONSTRUCTION,  
AND ADA RESTROOMS**

CEOI 0403 DBS18000000001  
January 25, 2018

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Submitted to:  
State of West Virginia

Submitted by:  
Michael Baker International, Inc.

**Michael Baker**  
INTERNATIONAL

January 25, 2018

Michelle L. Childers  
Bid Clerk  
Department of Administration  
Purchasing Division  
2019 Washington Street E.  
Charleston, West Virginia 25305

**Subject: Request for Qualifications for A&E Services for The West Virginia School for the Deaf and the Blind – Demolition, Reconstruction, and ADA Restrooms.  
CEOI 0403 DBS1800000001**

Dear Ms. Childers:

The Charleston, WV office of Michael Baker International, Inc. (Michael Baker) is pleased to respond to a solicitation for the Expression of Interest for Architectural and Engineering Services pertaining to the facilities at the West Virginia School for the Deaf and the Blind (WVSDB) campus in Romney WV. Michael Baker is interested in the mission of your agency and would like to engage with WVSDB as a trusted facilities consultant. We believe that our team of professionals is uniquely qualified to provide information and services that will bring WVSDB's campus desires into reality.

Michael Baker is well positioned to assemble a comprehensive design team (in-house) including: Architectural, Civil/Site, Mechanical, Electrical, Plumbing, Fire Protection and Structural expertise. Our diverse team of professionals are well seasoned in the preparation of construction documents, bid specifications, and the application of required code compliance and construction permits. Michael Baker can also provide leadership or assistance during the Bidding process and the appropriate level of Construction Administration during the building process.

We thank you for your consideration and look forward to meeting with the selection committee in person in order to share our thoughts and ideas for this exciting opportunity!

Should you have any questions or require additional information, please feel free to contact me at (304) 769-2164 or by e-mail at [Nicole.Riley@mbakerintl.com](mailto:Nicole.Riley@mbakerintl.com).

Very truly yours,

  
Nicole Riley  
Michael Baker International, Inc.

Enclosure

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# **MANDANTORY PROPOSAL SUBMISSION FORMS**



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

State of West Virginia  
 Centralized Expression of Interest  
 02 - Architect/Engr

Proc Folder: 408420

Doc Description: A&E EOI for Demolition, Reconstruction, and ADA Restrooms

Proc Type: Central Purchase Order

Date Issued	Solicitation Closes	Solicitation No	Version
2017-12-28	2018-01-25 13:30:00	CEOI 0403 DBS1800000001	1

**BID RECEIVING LOCATION**

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

**VENDOR**

Vendor Name, Address and Telephone Number:  
**Michael Baker International, Inc.**  
**400 Washington Street East, Suite 301**  
**Charleston, West Virginia 25301**  
**304-769-0821**

**FOR INFORMATION CONTACT THE BUYER**

Michelle L Childers  
 (304) 558-2063  
 michelle.l.childers@wv.gov

Signature X

FEIN # 25-1228638

DATE January 25, 2018

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

**ADDITIONAL INFORMATION****Expression of Interest**

The West Virginia Purchasing Division is soliciting Expression of Interest responses for the Agency, The West Virginia School for the Deaf and the Blind (WVSDb) from qualified firms to provide architectural/engineering services as defined herein.

**PROJECT:** The purpose of the project for which bids are being solicited is to provide necessary engineering, and other related professional services to design construction documents for four (4) Americans with Disabilities Act ("ADA") accessible restrooms and shower rooms at the Keller Hall Dormitory; demolition and reconstruction of the Seaton Hall Dormitory bakery, four sided building wing that is attached to the Seaton Hall Cafeteria to include related walls, loading dock, roofing, HVAC, and sprinkler systems; Blue and Gold Cafeteria exterior and interior renovation, and related work at the West Virginia Schools for the Deaf and the Blind. The project will include the design and specification of all necessary improvements to the buildings.

INVOICE TO		SHIP TO	
ACCOUNTS PAYABLE SCHOOL FOR THE DEAF & BLIND 301 EAST MAIN ST		CENTRAL SUPPLY SCHOOL FOR THE DEAF & BLIND 301 EAST MAIN ST	
ROMNEY	WV26757-1894	ROMNEY	WV 26757-1894
US		US	


Line	Comm Ln Desc	Qty	Unit Issue
1	A/E for Demolition, Reconstruction, and ADA Restrooms		

Comm Code	Manufacturer	Specification	Model #
81101508			

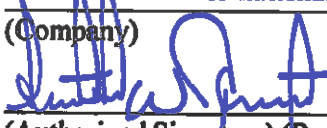
**Extended Description :**

A/E for Demolition, Reconstruction, and ADA Restrooms

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

  
**SENIOR ASSOCIATE**  
\_\_\_\_\_  
(Name, Title)  
**Patrick W. Fogarty, Senior Associate, Practice Manager**  
\_\_\_\_\_  
(Printed Name and Title)  
**400 Washington Street East, Suite 301, Charleston, WV 25301**  
\_\_\_\_\_  
(Address)  
**304-769-0821 / 304-769-0822**  
\_\_\_\_\_  
(Phone Number) / (Fax Number)  
**pfogarty@mbakerintl.com**  
\_\_\_\_\_  
(email address)

**CERTIFICATION AND SIGNATURE:** By signing below, or submitting documentation through wvOASIS, I certify that I have reviewed this Solicitation in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that I am authorized by the vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

**Michael Baker International, Inc.**  
\_\_\_\_\_  
(Company)  
  
**SENIOR ASSOCIATE**  
\_\_\_\_\_  
(Authorized Signature) (Representative Name, Title)  
**Patrick W. Fogarty, Senior Associate**  
\_\_\_\_\_  
(Printed Name and Title of Authorized Representative)  
**January 25, 2018**  
\_\_\_\_\_  
(Date)  
**304-769-0821 / 304-769-0822**  
\_\_\_\_\_  
(Phone Number) (Fax Number)

**ADDENDUM ACKNOWLEDGEMENT FORM**  
**SOLICITATION NO.: CE01 0403 DBS1800000001**

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

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

**Addendum Numbers Received:**

*(Check the box next to each addendum received)*

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

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that 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.

**Michael Baker International, Inc.**

Company

Authorized Signature

**January 25, 2018**

Date

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



STATE OF WEST VIRGINIA  
Purchasing Division

## PURCHASING AFFIDAVIT

**MANDATE:** Under W. Va. Code §5A-3-10a, 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: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

**EXCEPTION:** The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. 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.

**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.

"Employer default" means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

"Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceeds five percent of the total contract amount.

**AFFIRMATION:** By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (W. Va. Code §61-5-3) that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

**WITNESS THE FOLLOWING SIGNATURE:**

Vendor's Name: Michael Baker International, Inc.

Authorized Signature: [Signature] Date: 25 JAN 2018

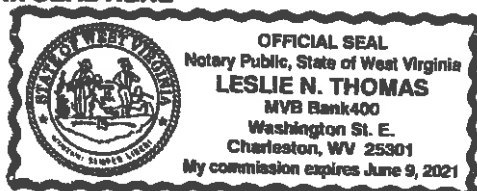
State of West Virginia

County of Kanawha, to-wit:

Taken, subscribed, and sworn to before me this 25 day of January, 2018.

My Commission expires June 9, 2021.

AFFIX SEAL HERE



NOTARY PUBLIC

[Signature]

Purchasing Affidavit (Revised 08/01/2015)

# PROPOSAL

## PROJECT BACKGROUND

The West Virginia Schools for the Deaf and the Blind (WVSDB) is seeking a highly qualified architectural/engineering firm to provide design services and bid documents for projects at the WVSDB, Romney Campus. The firm will be responsible to evaluate the existing conditions at the chosen sites, make recommendations and present cost-effective options and then provide Construction Documents for upgrades / renovations to the selected buildings. As specified in the Expression of Interest (EOI), design tasks could include, but are not limited to; Architectural, Engineering and other professional services to design construction documents for four (4) Americans with Disabilities Act (ADA) accessible restrooms and shower rooms at the Keller Hall Dormitory; demolition and reconstruction of the Seaton Hall Dormitory bakery, a four sided building wing that is attached to the Seaton Hall Cafeteria, and would also include any related walls, loading dock, roofing, HVAC, and sprinkler systems; Blue and Gold Cafeteria exterior and interior renovations, and all related work as defined by the West Virginia Schools for the Deaf and the Blind.

Michael Baker is extremely interested in continuing our working relationship with West Virginia Schools for the Deaf and the Blind in support of their important mission.

**Michael Baker International, Inc. (Michael Baker)** is a highly qualified firm with extensive experience in providing the type of services required for these projects, and Michael Baker is extremely interested in continuing our working relationship with West Virginia Schools for the Deaf and the Blind in support of their important mission.

## SECTION I

### QUALIFICATIONS & EXPERIENCE

Michael Baker's proposed team of experienced professionals has demonstrated the ability to deliver quality work products to our clients, on-time and within budget. Michael Baker can provide the entire depth of services necessary to complete the project without the need for costly sub-consultants. Each individual on this project team has extensive experience in their field of expertise and has demonstrated success on projects of similar size and scope.

According to our understanding of the project scope as stated in the EOI, no additional sub consultants will be required. Michael Baker will execute the entire project with our current staff.

#### FIRM CAPACITY

Michael Baker is a full-service A/E firm. Our local WV office in Charleston is a "single-stop resource" capable of providing comprehensive professional services, from Mechanical/Electrical and Structural Engineering to Architecture and Planning, final design, and construction management through operational support. Michael Baker will provide the hands-on services needed for this project, from Client meetings to site surveys, design and construction Administration/Inspection. With over 30 in house professionals locally and over 750 regionally, Michael Baker can react quickly and efficiently to the needs of your project. Our Charleston staff has Clients and/or active projects in Morgantown, Martinsburg and Elkins so key staff members are regularly in your part of the state.



Michael Baker's local clients for facility design and renovation projects include, but are not limited to, colleges and universities, schools, counties, parishes, cities, townships, local municipalities, state departments of transportation, military facilities, airport complexes, and private sector clients. Michael Baker's geographic location and extensive experience enables us to respond seamlessly to a wide-ranging scopes of service to meet our client's needs.

In the past decade, Michael Baker was retained by WV General Service Division to evaluate and design upgrades for 31 restrooms at the historic West Virginia State Capitol Building. Michael Baker has worked on numerous architectural, HVAC and sprinkler renovations around the region. Most recently, Michael Baker designed and oversaw the renovation of two buildings at the relocated WVU Tech campus in Beckley West Virginia. These renovations included; architectural, interior design, new roofing, a new and upgraded fire sprinkler system, upgrades to fire alarm systems, and HVAC renovations and upgrades.



WVU Tech – Classroom Building

Nationally, Michael Baker, is a leading global provider of engineering and consulting services which includes planning, architectural, environmental, construction, program management, and full life cycle support services as well as information technology and communications services and solutions. Michael Baker provides its comprehensive range of services and solutions in support of U.S. federal, state, and municipal governments, foreign allied governments, and a wide range of commercial clients. With more than \$1.3 billion in annual revenue. Michael Baker has more than 6,000 employees in over 90 offices located across the U.S. and internationally. Michael Baker seamlessly integrates architecture, planning, landscape architecture, engineering and construction management. Internationally recognized with a portfolio spanning over half a century, the team provides excellence in solutions: superior technical ability, creative design and collaborative integration.



Bettis Building Complex

The success of our multidisciplinary approach to “built” environments results from the expertise of our design professionals. We solve challenges from multiple vantage points providing unsurpassed holistic, sustainable and innovative solutions that benefit our diverse clients, including institutions, governmental agencies, corporations, developers and builders.

Michael Baker has extensive resources and the required qualifications to provide Architectural and Interior Design services, Mechanical, Electrical, Plumbing and Fire Protection engineering and design services for WVSD on this important project. We have local and nationally recognized experts with the technical experience necessary for this assignment. In addition, Michael Baker’s team of experienced professionals have an established record of delivering quality work products to our clients, on schedule and within budget.

In summary, Michael Baker’s staff can provide documentation of our extensive experience in the following areas for this project:

- Nationally recognized expertise in Architecture, Assessment, Programing and Planning
- Nationally recognized expertise in Engineering (Civil, Structural, Mechanical, Fire Protection, Plumbing and Electrical)
- Construction Administration and Construction Monitoring
- Coordination with State and Federal Agencies, as required

From new or renovated building facilities, site planning and infrastructure, aviation facilities, to oil and gas pipeline design, bridges and roadway designs, and water resource projects, Michael Baker has evolved into one of the leading engineering and energy services firms by consistently providing targeted solutions for its clients most complex challenges.

## SECTION II

### PROJECT TEAM

The Principal-In-Charge will ensure that all required resources including staff and equipment are available to the project manager to execute the project successfully. Team resumes and project profiles provide a brief discussion of team member's experience base relevant to this project.

Michael Baker International, Inc.  
Russell Hall, Vice President | 400 Washington Street, Suite 301, Charleston WV 25301  
304-769-0821 | [RHall@mbakerintl.com](mailto:RHall@mbakerintl.com)

#### Management and Staffing

The project team will be staffed primarily out of the Charleston West Virginia office, with other professionals working from other offices on an as need basis. Patrick Fogarty is the Architecture and Building Engineering Services Practice Lead and will manage the efforts of the design team, overseeing quality assurance. The selected Project Manager and primary client contact for this Project will be Nicole Riley. She will oversee and manage Architectural portions of the project, with Joseph Chaffin as the Architect of Record. David Hilliard will lead the Mechanical/Electrical/Plumbing/Fire Protection portion of the design team and oversee the project budget and schedule. They will be coordinating extensively between the architectural and mechanical designers to provide the most efficient and practical solutions for the affected buildings. Most of these professionals have worked together on numerous projects and bring a high degree of competency, understanding and experience for schedule and budget challenges such as those presented in this EOI.

#### Persons Assigned to the Project *(Resumes Provided In Appendix 1)*

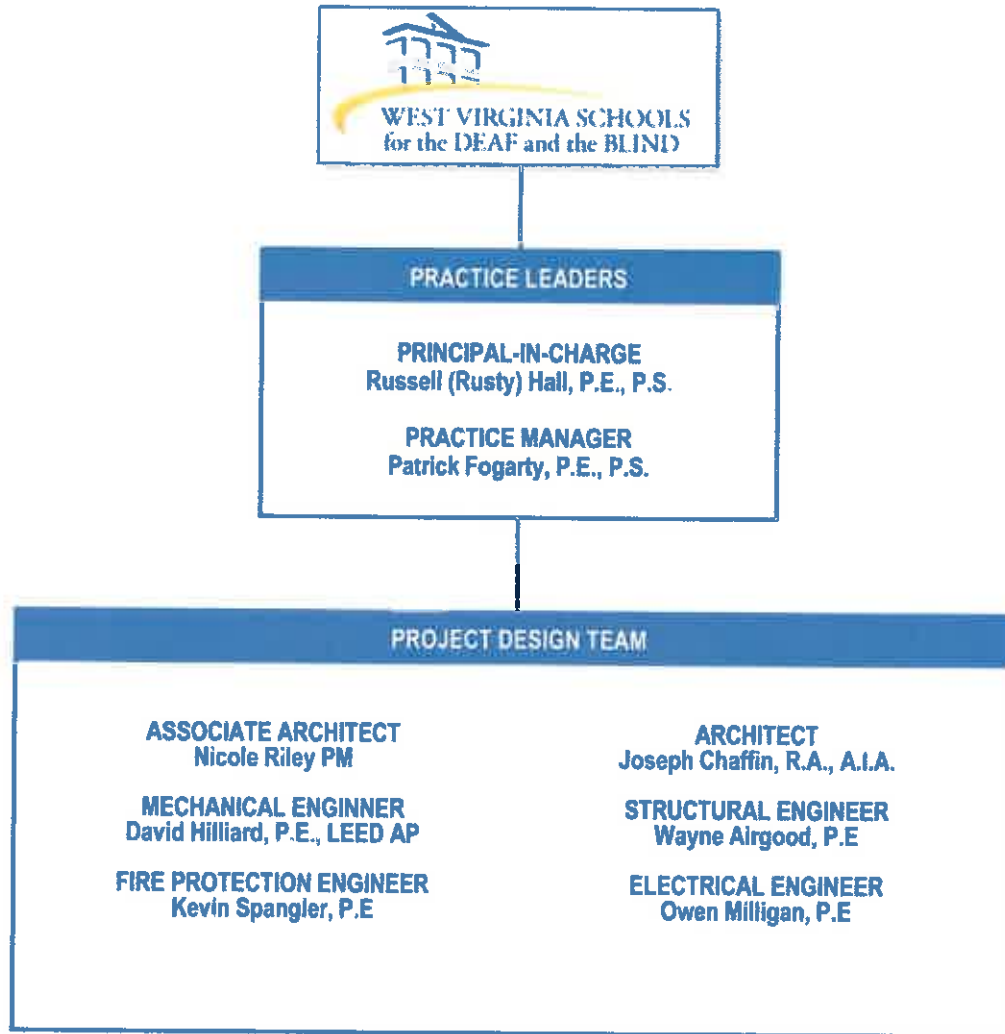
NAME	ROLE
PATRICK FOGARTY, P.E., LEED GA	Civil Engineer / Practice Manager
NICOLE RILEY	Associate Architect / Project Manager
JOSEPH CHAFFIN AIA	Architect of Record
WAYNE AIRGOOD, P.E.	Structural Engineer
DAVID HILLIARD, P.E., LEED AP BD+C	Mechanical Engineer / Assistant PM
KEVIN SPANGLER, P.E.	Fire Protection Engineer
OWEN MILLIGAN, P.E.	Electrical Engineer

#### STATEMENT OR EVIDENCE OF THE FIRM OR TEAM'S ABILITY TO PROVIDE SERVICES

This team was selected based on the current Project understanding. Additional team support members or specialists will be engaged on an as need basis. The process is part of the normal working procedure and is seamless in execution.

## MANAGEMENT

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## SECTION III

### PROJECT AND GOALS

#### GOAL/OBJECTIVE 1: INVESTIGATION AND EVALUATION

It is Michael Baker's current understanding that renovations are desired at a number of buildings at the West Virginia Schools for the Deaf and Blind in Romney, West Virginia and may include Architectural, Engineering and Construction Administration services. These renovations include:



Administration Building

1. Keller Hall Dormitory (originally built in 1972)
  - a. Four (4) 600sf Americans with Disabilities Act (ADA) accessible restrooms and shower rooms
2. Seaton Hall Dormitory
  - a. Demolition and reconstruction of the 3,000sf, four-sided original bakery wing (built in 1929) attached by a common wall to the three-sided Cafeteria (built in 1952).
  - b. Loading dock renovations
  - c. New roofing
  - d. HVAC upgrades
  - e. Sprinkler system upgrades
3. Blue and Gold Cafeteria 5,500sf (originally built in 1840)
  - a. Exterior renovations
  - b. Interior renovations
4. Related work.

Michael Baker understands that the WVSD has retained the Military through the IRT program to provide the construction services for these projects and that the time schedule for design could be accelerated to accommodate their availability. In 2017 our staff worked with the US Air Force Reserve through the IRT program to build Tee Hangars at the Morgantown Airport. We are well versed in designing, scheduling, procuring materials and overseeing construction of this type. Michael Baker has the ability and staff to scale up our effort in order to meet the required schedule.

#### METHODOLOGY

The approach of the entire project would be holistic in nature. A kick off meeting would be held to help us understand WVSD's project requirements for each task assigned. The first step of the project would be to help prioritize work and develop time schedules for the project tasks. This process would include identification of existing conditions through information obtained by a review of the facilities' available as-built drawings and a general site walk through. Michael Baker may plan for more detailed site visits during the first weeks of the project to assess the limits of the needed renovations and before beginning development of the concepts required to provide the designs for the most cost-effective systems to achieve the project requirements. Our Engineers and Architects will be involved in all aspects of the existing condition assessment and will carry that understanding into the project design. Open discussions of our findings, of all related work and any recommendations will be held with the WVSD staff. This will help determine and finalize the extent of all related work.

## GOAL/OBJECTIVE 2: DESIGN

Because of the nature of the planned construction process, the design will generally follow a design / procure / build sequence.

Based on the gathered information, the Michael Baker staff will develop **schematic design** concepts of the major renovation portions for review and approval by WVSDDB. A general code review would also be undertaken to determine the State/Local Codes that would affect concept selection and schedule. The projects will be studied in a systematic way to analyze the existing conditions, client needs, affected system demands, budget and construction time frame. Only then will the appropriate solutions to meet those requirements be determined. Analyzing multiple solutions provides the client the ability to choose the most cost-effective approach for the project. Depending upon the project requirements and available time, a minimum of two potential design approaches may be presented.

Michael Baker will provide cost estimating services for each submission. When design concept options are developed and the approach is identified from a technical standpoint, our cost estimating group would be engaged to provide the financial feasibility of each option.

Michael Baker provides a variety of services and therefore has extensive experience in many fields of expertise. This will allow the core team members access to expertise in all areas of study which pertain to the project. Depending on the task, this may include: Civil, Architectural, Structural, Mechanical, Electrical, Plumbing, and Fire Protection engineering.



Little Kanawha Bus

Design and schedule coordination meetings and/or site visits will be provided as a normal part of the **design development/construction document** process. This will help to ensure that WVSDDB is receiving exactly the facility upgrades that they need in the time frame that they require. As required, a project phasing plan may be provided with the construction documents. This will help to ensure limited disruptions to students and staff members. Also included will be plans to show the limitations and requirements for the demolition and removal of the existing components and systems to facilitate the new work. Documentation will include the location of **"affected"** existing on-site utilities or service lines, if necessary.

Cost opinions will be updated upon the completion of the **Construction Documents** plans and specifications. Final sealed drawings and specifications for each phase of the entire project will be provided.

Michael Baker provides an Internal Technical Review (ITR) as part of our normal quality assurance process. This is performed on every prior to submittal delivery and is part of **"The Baker Way"**. This ITR is performed by professionals that are not part of the design team but are experts in the respective fields that they review. This ensures a nonbiased and critical review of the project documents. This process helps to minimize small errors and omissions and yields a smoother bidding/construction process.

Michael Baker will provide necessary design and bidding documents for all aspects of the design in accordance with WVSDDB Requirements and Guidelines. Specifications for the installation of all required products or components will be provided as part of the Construction Document package. Drawings and documentation will be provided based on WVSDDB provided as built drawings, site investigations and selected field measurements. Michael Baker will provide Bidding support and assistance as needed.





WVU Wise Library



Historic Lost Creek Train Depot

***NO PROJECT TOO LARGE OR TO SMALL***

**GOAL/OBJECTIVE 3: CONSTRUCTION ADMINISTRATION**

Site visits and construction inspection serves are part of Michael Baker's holistic project approach. If this project requires, a full-time construction coordinator can be provided for the duration of construction. The project coordinator could assist in ordering materials, planning and scheduling, and expediting responses to contractor questions. The team members that start the project will be the same professionals providing the regular onsite inspections during construction. All products intended to be installed on the project shall be submitted to and approved by the project team.

After the system installations are complete, Michael Baker will perform a final inspection and develop a corrective measure punch list and will coordinate with regulatory agencies to assure prompt award of the Certificates of Occupancy for the facilities as required.

**ADDITIONAL PROJECT OPTIONS**

**GENERAL**

Michael Baker has vast experience in technically sensitive renovations as well as from the ground up design and construction. The scope of this project, as presented, poses challenges that are exciting for our team of problem solvers. Between our Charleston West Virginia and Moon Township Pennsylvania offices, we bring diverse expertise and hundreds of years of experience to this progressive endeavor.

The management and coordination for this project will be a top priority for our Charleston staff, as most of our team members are residents of WV and desire to see our State and its educational facilities develop and grow.



Typical Classroom

### **COST CONTROL**

The use of prioritized phasing and additive or deductive alternates during the bidding and construction process can provide flexibility and help control project cost. This allows the Owner to better choose how they wish to spend their resources. Also to control cost, Michael Baker professional staff will have the opportunity to review the plans at each milestone and make comments or make recommendations to the project based on comparison with the Owner's Project Requirements, the current plans and specifications, and the current project cost opinion. If need be, Michael Baker is very familiar with the value engineering process and can work productively with the WVSDb to determine cost saving alternatives. If bids come in over budget or, if during construction, contractor staffing or schedules are reduced, value engineering can help keep the project on tract. These considerations, along with open discussion with the WVSDb staff, will determine whether we move forward with the current design or make agreed-upon adjustments to the design.

### **DESIGN AND CONSTRUCTION TIME FRAME**

We have the resources to deliver the project on time and within budget. Michael Baker has a proven track record of working closely with our clientele and bringing projects to fruition within the structured timeline and the Client's desired budget.

## **DEMONSTRATED EXPERIENCE IN COMPLETING PROJECT OF SIMILAR SIZE AND SCOPE**

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### **Project Profiles are included in Appendix 2.**

They were selected as a representative group with similar budgets and with related project components. These include a recent project performed in conjunction with the Military's IRT process at the Morgantown Airport, a project for WVU at WVU Tech in Beckley, a renovation project for a West Virginia nonprofit 501(c)(3) company, the WVARNG Charleston Armory renovation and an open end 10-year contract with West Virginia State University, now in its' seventh year. We also included samples of an out-of-state project within the last five years and a design for the complete renovation of 31 restrooms in the historic West Virginia State Capitol Building.

Seven (7) additional **References** are provided in **Appendix 3**.

# APPENDIX 1



## RESUMES

# Patrick W. Fogarty, P.E., P.S., LEED®GA

## Civil Engineer , Facilities Practice Manager

### General Qualifications

Mr. Fogarty has over 29 years of civil engineering project design and management experience. He is responsible for the technical and management aspects of civil design and surveying projects within Baker's Charleston, West Virginia office. Mr. Fogarty has designed and managed projects in numerous disciplines including civil, structural, and transportation engineering; site development planning; and surveying. These projects have included retail/commercial site preparation, airports, streets/highways, bridges, parking lots, buildings, retaining walls/foundations, sanitary systems and structures, as well as boundary and topographic and photogrammetric surveys. Duties included field surveying, drawings and specification preparation, design, design drafting, construction inspection, quality control testing, shop drawing review, project management, contract administration and report preparation.

### Experience

**Renovations to Classroom Building, Beckley, West Virginia. WVU Tech/ West Virginia University. Practice Lead.** Responsibilities included overseeing and managing the required resources for the design team and quality control. This fast track design and construction project stemmed from a feasibility study produced by request of the Client. The deficiencies found during the Study were remedied during the design phase with a compressed time frame in mind. Coordination of new and old HVAC designs were a large component of this project. University branding elements were incorporated into the interior design to bring new life to a defunct campus. Special consideration was given to coordination with the University's existing door hardware products as well as the design and product specifications for a nationally accredited psychological laboratory within the Project. This project is currently under construction.

**Renovations to the Benedum Center, Beckley, West Virginia. WVU Tech/ West Virginia University. Practice Lead.**

A sister project to the above referenced Classroom Building, this 21,000 S.F. project ran concurrent and also stemmed from a Feasibility Study requested by the Owner. Primarily responsibilities included overseeing and managing the required resources for the design team and quality control. This project is currently under construction.

*Years with Michael Baker: 10*

*Years with Other Firms: 20*

### Degrees

B.S., 1985, Civil Engineering, West Virginia University Institute of Technology

Diploma, 1993, Surveying and Mapping, International Correspondence Schools

Coursework, Business Administration, Heriot-Watt University, Edinburgh College of Art

### Licenses/Certifications

Professional Engineer - Civil/Structural, West Virginia, 1990

Professional Surveyor, West Virginia, 1993

Construction Documents Technologist, 1996

**West Virginia State Capitol Restroom Renovations. *State of WV General Services Division.*** Project Manager. Responsible for the overall management of the project including the coordination of the subconsultant. Baker is leading a planning study for the renovation of 31 restrooms in the historic West Virginia Capitol Building. The planning study will assess the facilities and their conformance to current code requirements and code-required capacities, compliance with Americans with Disabilities Act (ADA) requirements, quantification of the building occupancy during normal and peak periods, and an evaluation of gender distribution of restrooms within the capitol. Baker will provide design, construction sequence, and scheduling recommendations. Upon approval of the design, Baker will prepare construction documents and provide construction administration services for the renovation of three restrooms on the basement level.

**Nitro Bank Street Streetscape Improvements, Nitro, West Virginia. *City of Nitro.*** Project Manager. Responsible for concept planning, detailed design, construction document generation, and construction administration. Baker provided design, bid-phase support, and construction services for streetscape improvements to Bank Street, located in the city's business district. Baker's services include base mapping, background data collection, design plans, construction document preparation, bid-phase support, construction management, and construction inspection.

**A/E Services for the Office of the Adjutant General, West Virginia Army National Guard, Division of Engineering and Facilities, Charleston, West Virginia. *State Army National Guard Headquarters.*** Project Manager. Responsible for the management and coordination of all activities. The Facilities Management Officer (FMO) for the State of West Virginia, Division of Engineering and Facilities (DEF), West Virginia Army National Guard (WVARNG) selected Baker for a lump sum/fix fee contract for architectural and engineering services. Baker was selected by the Division of Engineering and Facilities to provide complete design and construction administration services for the renovation of the first floor of the entire wing of the Office of the Adjutant General (TAG). The Owner requested the need for modernization of approximately 12,000 square feet of existing outdated office space - project elements included new acoustical ceilings, flooring, energy-saving light fixtures, duplex outlets, communications jacks, alterations to the existing floor plan, exterior door replacements, new interior doors and hardware, new wall finishes and asbestos removal.

**Lost Creek Train Depot Rehabilitation, Lost Creek, West Virginia. *Town of Lost Creek.*** Project Manager. Responsible for the management and coordination of all activities as well as all engineering design. The Town of Lost Creek retained Baker for the planning and design of the rehabilitation of a historic train depot adjacent to the Harrison County Rail Trail. Baker prepared a plan to raise the structure, make repairs to the deteriorated timber, excavate and place the concrete foundation system, then lower the structure to rest on the new foundation. Baker provided construction administration and inspection services as well as periodic site review during construction.

**Little Kanawha Bus Facility, Calhoun County, West Virginia. *WV Division Of Public Transit.*** Project Manager. Responsible for the civil, site and structural engineering components of the project. Baker is providing architectural and engineering services, landscape architecture, and construction-phase support for a new, 9,900-square foot, pre-engineered, metal and brick bus maintenance and transit operations facility. The 5,100-square-foot administrative area will include offices, a conference room, a money-counting room, and a driver-training room, and the 4,800-square-foot bus maintenance area will include storage for seven buses. The facility will be ADA-compliant and is being designed to achieve LEED® certification. Services include site survey and design, geotechnical testing, environmental compliance, utility coordination, bid documents, bid-phase support, and as-built drawings.

## Nicole Riley

### *Associate Architect / Project Manager*

#### **General Qualifications**

Ms. Riley brings more than 17 years of experience to the project. While at Michael Baker, Ms. Riley has focused her time on the client's needs while leading the design team from the early assessment of project planning stages to the construction administration. Ms. Riley's project design experience includes project for entrepreneurs, correctional, educational, institutional, military installations, commercial, residential, and religious facilities. She is experienced with the submittal and construction process for various state agencies including the WV State Fire Marshal.

**Years with Baker: 3**

**Years with Other Firms: 16**

#### **Education**

Bachelor of Architecture, Virginia Tech

#### **Licenses/Certifications**

Associate A.I.A.

#### **Experience**

**Design of Three T-Hangars, Morgantown, West Virginia.** *Morgantown Municipal Airport. Architectural Designer.* Responsibilities included the design of three T-hangars on the east side of the airfield and included architectural, and interior design, firewalls, ADA restrooms and Hangar bays. Coordination efforts with structural engineers was a substantial portion of the design process. She also, performed Construction Administration for architectural shop drawings and coordinated with onsite project managers.

**Renovations to Classroom Building, Beckley, West Virginia.** *WVU Tech/ West Virginia University. Designer and Project Manager.* Responsibilities included facilitating complete design package and collaboration with WVU Tech staff for the 31,000 S.F. facility. This fast track design and construction project stemmed from a feasibility study produced by request of the Client. The deficiencies found during the Study were remedied during the design phase with a compressed time frame in mind. Coordination of new and old HVAC designs were a large component of this project. University branding elements were incorporated into the interior design to bring new life to a defunct campus. Special consideration was given to coordination with the University's existing door hardware products as well as the design and product specifications for a nationally accredited psychological laboratory within the Project. This project is currently under construction.

**Renovations to the Benedum Center, Beckley, West Virginia.** *WVU Tech/ West Virginia University. Designer and Project Manager.* A sister project to the above referenced Classroom Building, this 21,000 S.F. project ran concurrent and also stemmed from a Feasibility Study requested by the Owner. Primarily an interior design heavy project, this building required new retrofitted ADA toilet facilities as well as door hardware and HVAC systems coordination. This project is currently under construction.

**Renovations to Maclin Hall, Montgomery, West Virginia.\*** *WVU Tech. Designer and Project Manager.* Responsibilities included facilitating complete renovation design package as programmed by the Owner and collaboration with WVU Tech staff for the four level, mixed use facility. Special consideration given to durable interior design finishes selection, new technology infrastructure and concealment, student safety, West Virginia State Fire Code and ADA.

**Multi- Purpose Facility for the West Virginia State Police Academy, Institute, West Virginia.\* *Designer and Project Manager.*** Responsibilities included site investigation, cost estimate, architectural design and collaboration with geotechnical engineer as well as the West Virginia State Police staff overseeing the project. The facility employs a skylight system in the main gym, intended to provide natural light to the user as well as lowering electricity expense. Special consideration was given to the underground foundation and location of the facility at the Academy.

**Economic Development Center, Charleston, West Virginia.\* *West Virginia State University Gus R. Douglass Extension, Designer and Project Manager.*** Responsibilities included: feasibility study, budget development and construction documents and construction administration services for total renovation of a 5,000 S.F. facility. Diverse use of facility lent to consideration for recording studios, digital green studio, office space for entrepreneurs, and public gathering space.

**Glen Jean Armed Forces Reserve Center/ Military Entrance Processing Station, Glen Jean, West Virginia.\* *West Virginia Army National Guard/ U.S. Department of Defense. Designer and Project Manager.*** Responsibilities included complete design package and collaboration with staffs from both the state and federal entities for the 110,000 S.F. facility. Special consideration given to force protection, geotechnical challenges, helipad design and location, vehicle repair and petroleum storage, adequate mustering space, as well as medical office spaces.

**Parkersburg South High School, Parkersburg, West Virginia.\* *Wood County Schools. Designer and Project Manager.*** Responsibilities included complete design package and collaboration with staffs from both the state and federal entities for the 250,000 S.F. facility. Special consideration given to student security, geotechnical challenges, campus enclosure, music and chorale practice suites, laboratory spaces, fire suppression, and ADA.

Other Notable Projects:

- **St. Alban's High School\***; focus on selective demolition and design detailing for the 172,596 S.F. facility.
- **Robert C. Byrd Training Institute\***; design/ production team. Interior design work for the 148,000 S.F. facility.
- **Sherrard Middle School\***; addition of commons area and commercial kitchen, classroom renovation for the 64,000 S.F. facility
- 

\*Denotes experience prior to becoming a team member at Michael Baker international.



## **R. Joseph Chaffin, R.A., A.I.A.**

### ***Lead Design Architect***

#### **General Qualifications**

In balancing creative, organizational, and technical strengths, Joseph Chaffin's professional experience demonstrates a broad practice of architecture from residential through complex institutional projects. He challenges current capabilities, cultivates leadership, and develops new strengths through his position at Baker. As Director of Architecture, Mr. Chaffin is responsible for the daily operations, design quality, and project execution of the architectural and interior design staff. He performs interdisciplinary technical reviews for all designs and oversees coordination of related engineering disciplines. Ensuring the highest quality design services within budget and schedule parameters, he also emphasizes a "world view," or comprehensive perspective, within which professional services are delivered prioritizing and maintaining client expectations.

#### **Experience**

**Renovations to Classroom Building, Beckley, West Virginia.** *WVU Tech/ West Virginia University. Architect of Record.* Responsibilities included facilitating complete design package and collaboration with WVU Tech staff for the 31,000 S.F. facility. This fast track design and construction project stemmed from a feasibility study produced by request of the Client. The deficiencies found during the Study were remedied during the design phase with a compressed time frame in mind. Coordination of new and old HVAC designs were a large component of this project. University branding elements were incorporated into the interior design to bring new life to a defunct campus. Special consideration was given to coordination with the University's existing door hardware products as well as the design and product specifications for a nationally accredited psychological laboratory within the Project. This project is currently under construction.

**Renovations to the Benedum Center, Beckley, West Virginia.** *WVU Tech/ West Virginia University. Architect of Record.* A sister project to the above referenced Classroom Building, this 21,000 S.F. project ran concurrent and also stemmed from a Feasibility Study requested by the Owner. Primarily an interior design heavy project, this building required new retrofitted ADA toilet facilities as well as door hardware and HVAC systems coordination. This project is currently under construction.

**Aviation Science Center Renovation, Community College of Beaver County, Monaca, Pennsylvania.** *Architect of Record.* Responsible for design/technical quality and project execution provided by the architectural and interior design staff. The Project consisted of architecture, engineering, construction administration and cost estimates to design the auditorium renovations and replacement the HVAC system. Preliminary design services included research of applicable building codes; on site project assessment and verification, measurements, and documentation of the project areas, including a comprehensive field survey of the existing conditions, and the development and prioritization of preliminary scopes of work, schedule development, and oversight of estimates of probable cost. He directed the completion of pre-final 90 percent construction documents and the final construction and bid documents, including architectural, mechanical, electrical, and communications engineering drawings, and specifications. Mr. Chaffin also coordinated with the vendor of the air traffic control simulator throughout the design phase.

**Years with Baker:** 7

**Years with Other Firms:** 17

#### **Education**

B.Arch., 1990, Architecture, University of Cincinnati

Certificate, 1988, Architecture, Ecole d'Art Americaines - Ecole des Beaux Arts

#### **Licenses/Certifications**

Registered Architect, West Virginia, 2011

NCARB, 1999

Registered Architect, Pennsylvania, 2001

**Nursing Simulation Renovation and Laboratory Design, Clarion University, Clarion, Pennsylvania.** Director.

Responsible for design/technical quality and project execution provided by the architectural and interior design staff.

This state-of-the-art nursing education facility, included a simulation laboratory with four high-technology mannequins and a control room, related classrooms and skills lab spaces, offices, conference rooms, social lounge, and study lounge. His role also included interdisciplinary technical reviews for all design/construction documents. Baker's tasks included architectural design, building systems engineering, construction cost estimate development, and as-built plans development.

**Building 12 Defense Logistics Agency Headquarters Renovation Design, Tobyhanna, Pennsylvania.** *Tobyhanna Army Depot.* Director.

Responsible for design/technical quality and project execution provided by the architectural and interior design staff. Role also included interdisciplinary technical reviews for all design/construction documents. Baker prepared design documents for the partial renovation of Building 12 to serve as the new Defense Logistics Agency headquarters building. Work was performed under a three-year indefinite delivery-indefinite quantity contract. Baker's tasks included architectural design, building systems engineering, construction cost estimate development, and as-built plans development.

**Restroom Renovation Design, TISCOM, Alexandria, Virginia.** *U.S. Coast Guard, CEU Cleveland.* Director.

Responsible for design/technical quality and project execution provided by the architectural and interior design staff. Role also included interdisciplinary technical reviews for all design/construction documents. Baker is developing specifications, construction drawings, a detailed cost estimate, and a projected construction schedule to renovate two male and two female restroom areas in the Telecommunication and Information Systems Command Navigation Center. The renovated restrooms will be compliant with the Americans with Disabilities Act and will include new plumbing fixtures, toilet partitions, floor coverings, wall coverings, electrical fixtures, and exhaust fans.

**U.S. Armed Forces Reserve Center, Rutland, Vermont.** *U.S. Army Corps of Engineers, Louisville District.* Director.

Responsible for design/technical quality and project execution provided by the architectural and interior design staff.

Responsibilities also included detailed interdisciplinary reviews of the RFP design criteria documents with an emphasis on architecture. Baker developed design-build RFP documents for a new 600-member Armed Forces Reserve Center meeting Silver LEED® standards. A 97,634-square-foot training building (AFRC), a 14,600-square-foot multi-use classroom, a 7,302-square-foot Organized Maintenance Shop (OMS), and a 3,113-square-foot unheated storage (UHS) building were included in the RFP package. The center accommodates training and mobilization, and provides for the storage, inspection, maintenance, and repair of combat and tactical vehicles and equipment associated with the regional deployment of Vermont Army National Guard and Army Reserve units. RFP development consisted of conducting a design charrette; providing a topographical survey and geotechnical investigation; performing a utility survey; developing conceptual site plans, floor plans, and building elevations; developing RFP specifications; preparing DD Form 1354 – Transfer of Real Property; and providing a PACES construction cost estimate.

**Design of U.S. Army Reserve Center Renovation and Expansion, Homewood, Illinois.** *U.S. Army Corps of Engineers, Louisville District.* Director.

Responsible for design/technical quality and project execution provided by the architectural and interior design staff. Role also included interdisciplinary technical reviews for all design/construction documents. As designer of record, Baker provided architectural and engineering services for the renovation and expansion of a 400-member U.S. Army Reserve Center to provide a 60,374-square-foot Training Building, including an approximately 3,500-square-foot Unheated Storage Building. The project also includes construction of a 22,300-square-foot parking area for military equipment, and 130 parking spaces for privately owned vehicles. Tasks were performed under an indefinite quantity-indefinite delivery engineering agreement. Baker designed the training facility to meet LEED® Silver certification. Baker's services included architectural design, surveys, environmental and geotechnical investigation, all site and building engineering, cost estimating, value engineering, and LEED® certification administration.

## Wayne Airgood, P.E.

### Structural Engineer

#### General Qualifications

Mr. Airgood is a practicing structural engineer with experience in the design of commercial, institutional, light industrial building structure, and foundation systems.

#### Experience

**Design of Central Issue Facility, Fort McCoy, Wisconsin. U.S. Army Corps of Engineers, Louisville District.** Mr. Airgood was the senior structural engineer of record responsible for design of the building structure and foundation systems from concept through construction of an approximate 62,553-square-foot large-sized Central Issue Facility (CIF) to expedite the shipping and receiving, distribution, processing, and exchange of soldier equipment. The structural system consisted of steel joist and girder framing supported by interior steel columns and exterior precast, insulated concrete load-bearing walls. Foundations were soil supported, isolated and continuous, reinforced spread footings.

**Container-Loading Facility Design, Fort McCoy, Wisconsin. U.S. Army Corps of Engineers, Louisville District.** Mr. Airgood was the senior structural engineer of record responsible for the design of a clear span steel roof framing system to achieve column-free interior warehouse space of a 30,862-square-foot Container-Loading Facility. Roof framing system is supported by interior steel columns and exterior precast, insulated concrete load-bearing walls. Foundations were soil supported, isolated and continuous, reinforced spread footings.

**Montgomery County Public Schools Foodservices Facility. Montgomery County, Department of General Services.** Mr. Airgood was the senior structural engineer of record responsible for the development and design of structural framing and foundation systems for 70,000-square-foot food production, warehouse and distribution facility. His responsibilities included coordination with owner/user and other engineering disciplines throughout design, performing and overseeing of production structural design calculations and documents and construction administration services such as review of structural product submittals and periodic site visits.

**West Haven Commuter Rail Station Engineering Design, West Haven, Connecticut. Connecticut Department of Transportation.** Mr. Airgood was the senior structural engineer responsible for the structural framing and foundation design of a two story passenger train station building. The station building featured a two story, glass curtain wall enclosed passenger waiting area with exposed to view curved roof structure. The design also included a 75 foot span, glass curtain wall enclosed pedestrian bridge spanning over the four rail line track bed to connect the station building with a new two story stair and elevator tower. His responsibilities included coordination with engineering and architectural disciplines during design, performing and overseeing of production structural design calculations and documents, and review of fabrication shop drawings and other construction administration services as related to the building structural systems.

**Years with Michael Baker: 8**

**Years with Other Firms: 23**

#### Degrees

B.S.C.E., 1984, Structural Engineering, Geneva College

#### Licenses/Certifications

Professional Engineer, Pennsylvania, 1999, [REDACTED]

Professional Engineer, Maryland, 2013, [REDACTED]

Professional Engineer, North Carolina, 2014, [REDACTED]

**Penn Hills Operations Center Addition, Penn Hills, Pennsylvania. *Duquesne Light Company.*** Mr. Airgood was the senior structural engineer of record responsible for the development, design, and detailing of a load bearing masonry wall and steel framing addition to an existing facility.

**Design-Build Tactical Equipment Maintenance Facilities, 31st ADA Brigade, Fort Sill, Oklahoma. *U.S. Army Corps of Engineers, Tulsa District.*** Mr. Airgood was the senior structural engineer responsible for the design of the foundation systems to support an 18,000-square-foot, 35,200-square-foot, and 57,031-square-foot pre-engineered steel Tactical Equipment Maintenance Facilities (TEMF), and a 20,000-square-foot Supply Support Activity facility supply support activity warehouse (SSA). Because of existing expansive soil conditions, the ground floors of each building were designed as reinforced concrete floor systems with a void space between the expansive soil and floors. The concrete floor system and PEMB structural columns were supported by a deep foundation system of drilled concrete piers extending to rock. His responsibilities included review of structural fabrication drawings, attending design coordination meetings and periodic site visits during construction.

**Buildings 200 & 250 of Imperial Business Park, Imperial, Pennsylvania.** Mr. Airgood was the lead structural engineer responsible for the development and design of the structure and foundation systems for two, 250,000-square-foot warehouse facilities. Responsibilities also included construction administration services such as review of structural product submittals and periodic site visits. Each building consisted of steel joist and joist girder roof framing supported by interior steel columns and exterior precast concrete bearing and shear walls. Foundations were soil supported, isolated and continuous, reinforced spread footings.

**ABB Manufacturing and Office Facility, Mt. Pleasant, Pennsylvania.** Mr. Airgood was the lead structural engineer of a high-bay manufacturing, testing and warehouse facility for electric transformer equipment, including an attached two-story office area. The structural systems consisted of precast concrete wall panels enclosing a steel framed interior column and roof structure, including the support of numerous under-hung crane systems throughout the facility ranging from 5- to 20-ton capacities. The lateral framing system was a combination of steel braced and moment frames, and foundations were soil supported isolated and continuous, reinforced spread footings.

**Fuel Cell Facility, Pittsburgh, Pennsylvania. *Siemens Westinghouse.*** Mr. Airgood was the lead structural engineer of a high-bay manufacturing facility, warehouse and two-story attached office area. The structural systems consisted of precast concrete wall panels enclosing a steel framed interior column and roof structure. The lateral framing system was a combination of steel braced and moment frames, and the structural design included support of various top running bridge crane systems ranging from 10- to 40-ton capacities. The foundations were soil supported isolated and continuous, reinforced spread footings.

## **David J. Hilliard, P.E., LEED® AP**

### ***Mechanical/Electrical/Plumbing Engineer***

#### **General Qualifications**

Mr. Hilliard has a wide range of "hands on" design, engineering, and construction experience. From his beginnings as a carpenter he has expanded his professional abilities to a senior engineer for Baker. His recent design experience has included the design of new campus water lines and other service utilities at West Virginia State University, the complex mechanical design of such projects as a large Charleston, West Virginia hospital, a Bus Maintenance Garage and office building for the West Virginia Department of Transportation, an Army National Guard Armory HVAC/Electrical renovation, Master Planning and engineering at the West Virginia Capitol Complex including plumbing renovation design on the historic State Capitol Building. His resume covers over 30 years of real world work in engineering, design, fabrication and construction in the mechanical, electrical and general trades.

Over the years, while practicing his profession, Mr. Hilliard continued his education by studying mathematics, civil and mechanical engineering, finally taking degrees in both mathematics and mechanical engineering. He has continued his professional development through his involvement with ASME, ASHRAE, ASPE, USGBC, and other pertinent organizations

#### **Experience**

##### **Design of Three T-Hangars, Morgantown, West Virginia. *Morgantown***

***Municipal Airport. Mechanical/Electrical Engineer.*** Responsibilities included the Mechanical, Electrical and Plumbing Design of three T-hangars on the east side of the airfield and included, HVAC, plumbing ADA restrooms and drainage systems, fire protection, and electrical utilities design. He also, preformed Construction Administration for advised during construction and help coordinate with the Military IRT staff through an onsite project manager.

**Renovations to Classroom Building, Beckley, West Virginia. *WVU Tech/ West Virginia University. MEP Designer and Engineer of Record.*** Responsibilities included facilitating complete design package and collaboration with WVU Tech staff for the 31,000 S.F. facility. This fast track design and construction project stemmed from a feasibility study produced by request of the Client. The deficiencies found during the Study were remedied during the design phase with a compressed time frame in mind. Renovation old HVAC systems, electrical upgrades, fire alarm upgrades, and a new building wide sprinkles system were undertaken, as well as the design of new ADA restrooms. Special consideration was given to the design and product specifications for a nationally accredited psychological rat laboratory within the Project. This project is currently under construction.

*Years with Michael Baker: 6*

*Years with Other Firms: 20*

#### ***Degrees***

B.S.M.E., 2005, Mechanical Engineering, West Virginia University Institute of Technology

B.S., 2002, Mathematics and Science, West Virginia State College

#### ***Licenses/Certifications***

Professional Engineer, West Virginia 2011

LEED AP, bd+c, 2010

#### ***Professional Affiliations***

American Society of Plumbing Engineers

American Society of Heating, Refrigerating, and Air-Conditioning Engineers

American Society of Mechanical Engineers

**Renovations to the Benedum Center, Beckley, West Virginia. WVU Tech/ West Virginia University. MEP Designer and Engineer of Record.** A sister project to the above referenced Classroom Building, this 21,000 S.F. project ran concurrent and also stemmed from a Feasibility Study requested by the Owner. Primarily an interior design heavy project, this building required new ADA toilet facilities, Fire Alarm and sprinkler system upgrades and retrofitted HVAC equipment. This project is currently under construction.

**West Virginia State University - Open-End Architectural/Engineering Services, Institute, West Virginia.** 10 year IDIQ. Mechanical/Electrical and Plumbing Designer and Engineer of Record for on demand projects at West Virginia State University. Mr. Hilliard has been involved with and coordinated all aspects of the various tasks which have included; programming, planning, design development, construction documentation, systems evaluations, and feasibility studies, as well as cost estimating. Also included were mapping, evaluation and design services for storm and sewer line systems, a campus wide domestic water loop system design, football field upgrades and overall facility maintenance support as requested by the University. He has also been involved with the development and acquisition of WVDEP permits for both MS4 and Air Perming.

**Little Kanawha Bus, Calhoun County, West Virginia. WV Division of Public Transit.** Mechanical Engineer. Responsible for the Mechanical, Electrical and Plumbing Design, MEP Document Preparation, and Construction Administration for a new bus maintenance and office facility for Gilmer County. Duties include the design of the vehicle storage, cleaning and maintenance mechanical systems, as well as oil pumping and collection systems. The design of an energy efficient HVAC system for the entire building is also part of his responsibilities. The facility was designed as a LEED® project.

**Good News Mountaineer Garage, Charleston, West Virginia.** Mechanical Engineer. Responsible for the Mechanical, Electrical and Plumbing Design, MEP Document Preparation, and Construction Administration for newly renovated Auto Repair garage and administrative office facility for this non-profit organization. The Good News Mountaineer Garage accepts donations of vehicles that are repairable for a reasonable amount of money. These donated cars are then distributed to families with low incomes for transportation to work.

**West Virginia State Capitol Restroom Renovations. State of WV General Services Division.** Mechanical Electrical and Plumbing Engineer. Mr. Hilliard provided the State of West Virginia General Services Division a comprehensive MEP plan for the renovation and renovation of the 33 restrooms of the West Virginia State Capitol Building. He helped provide design, construction sequence, and scheduling recommendations. And will provide Construction Administration during construction

**Army National Guard Headquarters Renovations, Charleston, West Virginia. State Army National Guard Headquarters.** Mechanical Engineer. Responsible for all mechanical design oversight and construction management. Baker performed complete planning, design, and construction management services for renovations to the Office of the Adjutant General at the State Army National Guard Headquarters in Charleston, West Virginia. Project elements included a complete renovation and replacement of the HVAC system with a Loop Heat Pumps, new acoustical ceilings, flooring, energy-saving light fixtures, several new wall partitions, new interior doors and hardware, new wall finishes and asbestos removal. Baker provided Construction Administration and inspection services as well as periodic site review during construction.

## Kevin Spangler, P.E.

### Fire Protection Engineering Manager

#### General Qualifications

Mr. Spangler is a registered fire protection engineer with an M.S. degree in Fire Protection Engineering and 9 years of experience in the fire and life safety consulting industry. He has been with Michael Baker International since 2009 and has been the fire protection engineering manager since 2014. He provides leadership to the fire protection group and performs project technical reviews of system designs. He also serves as the Designer of Record for his specific project designs. In his wide-ranging fire protection experience and education, he has an extensive technical background and knowledge in the design of fire protection engineering systems, code and life safety analysis, and the commissioning and testing of fire systems. The variety of projects have exposed Mr. Spangler to various types of facilities for military, government, commercial, public, and private clients.

#### Experience

**Renovations to Classroom Building, Beckley, West Virginia. WVU Tech/ West Virginia University.** Mr. Spangler was the fire protection engineer of record responsible for the design of the fire protection systems at the WVU Tech Beckley Classroom Building. The project consisted of a renovation of an existing building. A new wet-pipe sprinkler system was added to the building, and the existing fire alarm system was adjusted to account for the building renovation. Mr. Spangler provide drawings and specifications for the installing contractor, and reviewed the delegated design submittals for compliance with the project scope and construction codes. This project is currently under construction.

**Renovations to the Benedum Center, Beckley, West Virginia. WVU Tech/ West Virginia University. Designer.** A sister project to the above referenced Classroom Building, this 21,000 S.F. The existing sprinkler and fire alarm systems were adjusted to account for the building renovation.. This project is currently under construction.

#### **Army Reserve Center, Full Facility Revitalization (FFR), Independence, MO.**

Mr. Spangler was the fire protection engineer for the renovation of the existing army reserve center located in Independence, Missouri. He was responsible for performing a field investigation of existing conditions, performing a fire hydrant flow test and preparing RFP specifications and design criteria documents. The building scope included a new wet pipe sprinkler system in the Reserve Center Building and also the Maintenance Facility. The existing fire alarm system was documented and determined to be removed and replaced with a new fire alarm and mass notification system. The new fire alarm system is designed to serve both buildings and an outdoor speaker system for parking lot notification.

*Years with Michael Baker: 8*

*Years with Other Firms: 1*

#### Degrees

M.S., 2008, Fire Protection Engineering, University of Maryland, College Park Campus

B.S., 2006, Agricultural and Biological Engineering, The Pennsylvania State University

#### Licenses/Certifications

Professional Engineer, California, 2011, [REDACTED]

Professional Engineer, Virginia, 2012, [REDACTED]

Professional Engineer, Pennsylvania, 2012, [REDACTED]

Professional Engineer, Illinois, 2013, [REDACTED]

Professional Engineer, Idaho, 2014, [REDACTED]

Professional Engineer, New York, 2014, [REDACTED]

Professional Engineer, Connecticut, 2015, [REDACTED]

Professional Engineer, South Carolina, 2016, [REDACTED]

Professional Engineer, Minnesota, 2016, [REDACTED]

Professional Engineer, Mississippi, 2017, [REDACTED]

**Shaw Headquarters Building Renovation, Shaw AFB, South Carolina**

Mr. Spangler was the Fire Protection Engineer of record for the renovation of the three story Headquarters Building at Shaw AFB in South Carolina. The building contained an existing fire alarm and existing sprinkler system. The fire alarm system was removed and installed with a new fire alarm and mass notification system. The existing sprinkler system was modified to account for the new building design. The existing sprinkler system was identified by field investigation and as much of the existing sprinkler system was re-used as possible to keep costs minimal for the client. A life safety analysis was performed according to NFPA 101 Life Safety Code and the IBC to ensure the new system design met all building and egress requirements. Mr. Spangler was responsible for the delegated design review and approval of shop drawings prepared by the installing contractor.

**Fire Pump Replacement. Allegheny County Airport Authority – Pittsburgh International Airport.**

Mr. Spangler was the fire protection engineer designer of record for the project. He completed detailed field measurements of the existing systems and finalized the design for the newly installed fire pumps. The project included the installation of 4 new, electric motor driven fire pumps in two (2) separate fire pump houses (2 pumps per fire pump house). The fire water tanks and existing water supply were analyzed to meet code requirements and the existing piping rerouted as necessary to provide appropriate pump recirculation. The challenges that were faced and solved during in the project included the installation of previously purchased fire pumps into an existing system. The project was successful due to the attention to detail in field measurements of the existing systems and the detailed design of the new system.

**Private Corporate Client. Hangar located at Allegheny County Airport.** Michael Baker was responsible for the building design for a renovation of a historic hangar located at the Allegheny County Airport. Mr. Spangler was the Fire Protection Engineer responsible for the design of fire protection systems throughout the building including sprinkler system, foam system, and fire alarm system. Two fire pumps were designed and retrofitted into the building to provide the adequate flow and pressure for the suppression systems. Detailed hydraulic calculations were performed and discussed with the local Authority Having Jurisdiction in order to remove the existing fire water storage tanks from the project. As part of the project, a site survey of existing building and final inspections of the final systems installations were performed.

**Camp Geiger East Infantry Training Complex, Marine Corps Base Camp Lejeune, North Carolina. Naval Facilities Engineering Command, Mid-Atlantic.** Mr. Spangler was the fire protection engineer of record for Academic Building, CIF and Warehouse buildings. He was responsible for fire protection design of protection systems including sprinklers, fire alarm and mass notification systems to meet the requirements of the RFP, UFC and NFPA codes. He performed life safety analysis for complete compliance with NFPA 101, IBC and the UFC criteria. This includes classifying occupancies, occupant load calculations, egress analysis and rated separations. He also performed an on-site fire hydrant flow test according to NFPA 291 to determine the available water supply. This information was used to perform detailed hydraulic calculations for the building sprinkler systems. He worked directly with the NAVFAC fire protection engineer to analyze the water system and remove the need for a fire pump for each of the buildings. Michael Baker served as the lead designer for the design-build delivery of a 137,850-square-foot infantry training complex on five acres at Camp Geiger. The project included the construction of a two-story headquarters and academic building, a warehouse, a consolidated issue facility, an armory building, and an emergency weather center, the demolition of five buildings and various electrical distribution upgrades. The project was designed to meet the requirements for LEED Silver certification.



## Owen Milligan, P.E.

### *Electrical Engineering Manager*

#### **General Qualifications**

Mr. Milligan is an electrical engineer who is experienced working with consulting engineering firms in the study and design of electric distribution and control systems, emergency power for process plants and facilities, water/wastewater treatment plants, government and commercial projects, ASHRAE energy-efficient building design, coordination with vendor and contractors, and approval of vendor drawings. He has a strong knowledge of distribution equipment and designs, motor control center layouts and design, and start-up and services during construction. He is capable of handling multiple projects from conception to final design, working as a team member toward meeting project goals. His work includes management of Baker's electrical engineering department, supervising and providing technical advice to designers and coordinating design and construction work with engineers, contractors, vendors, and clients.

#### **Experience**

**Design/Build SATOC for Military Facilities in the Southwest Region, Various Locations in Southwestern U.S., AR,AZ, CA, LA, NM, NV, OK, TX.** *U.S. Army Corps of Engineers, Tulsa District.* Electrical Engineer. Provided design assistance to the electrical engineering subconsultant, and performed a technical quality review of the construction documents for the TEMFs located at Fort Bliss. Electrical systems included lighting, lightning protection and grounding, power distribution, telecommunications, fire alarm, and unique voltage and frequency requirements. Designs were required to meet UFC and military design standards. Projects constructed under this contract include Brigade Combat Team (BCT) Tactical Equipment Maintenance Facilities (TEMF). TEMFs provide facilities for the purpose of maintaining and repairing vehicles, complete with equipment and parts storage, and administrative offices. Task orders awarded to date include the following: Two TEMFs at Fort Bliss in El Paso, Texas to be shared by five Battalions and one Company; and a Unit Operations Facilities consisting of a TEMF and an Organizational (Deployment) Storage facility, at Fort Bliss in El Paso, Texas. Facility designs are required to meet or exceed a Silver LEED® certification.

**On-Call Multi-Discipline Services, Pittsburgh International, and Allegheny County Airports (PIT/AGC), Pittsburgh, Pennsylvania.** *Allegheny County Airport Authority.* Technical Advisor. Provided technical direction to electrical design staff and performed a technical quality review of the construction documents. Designs were required to meet NEC standards. Since 1989, Baker has provided multidiscipline, on-call services to the Allegheny County Airport Authority (ACAA). The ACAA owns and operates Pittsburgh International Airport (PIT) and Allegheny County Airport (AGC). Baker acted as an extension to the ACAA's staff, providing the depth of resources and experience of the entire company when called upon by the ACAA. Baker provided a full range of services to ACAA on an "On-Call/As-Needed" basis, including architecture, civil, structural, mechanical, electrical and environmental engineering, general engineering administration, construction support, and other areas.

*Years with Michael Baker: 7*

*Years with Other Firms: 20*

#### **Degrees**

B.S., 1988, Electrical Engineering,  
Gannon University

Computer Aided Drafting, Putnam  
County Technical Center, 1995

#### **Licenses/Certifications**

Professional Engineer, California,  
2003

Professional Engineer,  
Pennsylvania, 1999

Professional Engineer, Montana,  
2001

Professional Engineer, Kentucky,  
2005

Professional Engineer, Oklahoma,  
2008

**Rescue Swimmer Training Facility, U.S. Coast Guard Support Center, Elizabeth City, North Carolina. *U.S. Coast Guard, Facilities Design & Construction Center Atlantic.*** QA/QC. Performed a technical quality review of the electrical design for this building renovation project, including lighting and electrical receptacles. Baker prepared Design/Build RFP Documents for a new Rescue Swimmer Training Facility (RSTF) for the Aviation Technical Training Center (ATTC), a tenant of and located on the SC Elizabeth City, NC. The \$13.3 million RSTF is a dedicated aquatic trainer for the purpose of supporting the Aviation Survival Technician (AST) School and recurrent water survival training requirements. Sized appropriately for the curriculum and student loading, the RSTF contained elevated platforms, pool temperature controls, adequate wet and dry storage, male and female locker/shower facilities, classrooms, and office space.

**Gymnasium Locker Room Rehabilitation, USCG Training Center Cape May, New Jersey. *U.S. Coast Guard.*** QA/QC. Performed a technical quality review of the electrical design for this building renovation project, including lighting and electrical receptacles. Baker prepared the design, construction documents, and cost estimate for the interior rehabilitation of an existing facility to combine two women's locker rooms into one large room.

**Relocation and Improvements to the Front Gate, USCG Training Center Cape May, New Jersey. *U.S. Coast Guard.*** QA/QC. Performed a technical quality review of the electrical design for this building renovation project, including lighting and electrical receptacles.

**Route 52, Contract - "B", Somers Point & Ocean City, New Jersey. *New Jersey Department of Transportation.*** Electrical Engineer. Responsible for the electrical systems design to meet NEC standards for a new Visitor's Center, bridge and site lighting, power distribution, and a supplemental photovoltaic solar system.

### **Non-Baker Project Experience**

**Siemens Government Services, Inc (formerly SD Engineers), Pittsburgh, Pennsylvania.** Senior Electrical Project Engineer. Responsibilities included Senior Electrical Engineer in charge of all electrical work at the Department of Energy's Naval Reactor Facility in West Mifflin, Pennsylvania. Duties included complete electrical design including multiple new office building designs and construction, light industrial type facilities for confidential DOE projects, retrofitting and relocation of existing laboratories, power studies, arc flash calculations, and site power distribution.

**Chester Engineers / US Filter Corporation, Pittsburgh, Pennsylvania.** Electrical Project Engineer. Responsibilities included the following:

- Lead electrical engineer for multiple site water and wastewater treatment projects for a large automobile manufacturer.
- Lead electrical engineer for design of water treatment plants for several large steel manufacturers.
- Lead electrical engineer on design of numerous remote cellular telephone communication sites for a large, wireless Telecommunications Company.
- Assisted a Senior Electrical Engineer on a Short Circuit and Coordination Study using CAPTOR/DAPPER analysis program.
- Responsible for several large detailed constructions cost estimates.
- Lead Electrical Engineer to many local municipalities for wastewater and water pumping/filtration upgrades.

## **APPENDIX 2**



## PROJECTS

## Design & Construction Oversight of Three PEMB T-Hangars

*Morgantown Municipal Airport (MGW),  
Morgantown, West Virginia*

Michael Baker provided design and engineering services for three pre-engineered metal building (PEMB) t-hangars west of the West Virginia Army National Guard Readiness Center known as the East Side Development and east of Runway 18-36. The construction was completed using the Civil/Military Partnership - Innovative Readiness Training Program (IRT).

Phase 1 of the project encompassed development of infrastructure, including site grading, drainage, bituminous taxilanes, pavement markings, vehicle parking, and fencing for the three t-hangars. Phase 2 encompassed the t-hangars on the east side of the airfield and included site civil, structural, architectural, interior, mechanical, plumbing, fire protection, and electrical utilities design. Michael Baker also provided material bidding/procurement services, and construction administration/management services.

### Phase 1

Michael Baker surveyed the project site to locate existing drainage structures, determine structure inverts, pipe sizes, orientation, and pertinent utility structures; performed a geotechnical investigation to determine subgrade soil properties for pavement design and building foundations; and developed an engineer's report to serve as the basis of design. Michael Baker also prepared and submitted FAA Form 7460-1 to address the permanent and temporary impacts to the airspace as a result of the project.

Additionally, Michael Baker developed a grading plan with best management practices (BMP), provided a bituminous pavement design with a 20-year structural design-life, developed preliminary airfield lighting and wiring layouts for the existing Taxiway D, and designed electrical and communication utility infrastructure necessary for future hangars. Michael Baker then prepared construction plans and specifications for all required materials for completion of the development.

### Phase 2

Michael Baker produced drawings and specifications for the construction of the three PEMB t-hangars and the associated site work. Site/civil design included sewer, sanitary holding tank, trench drains, medium voltage duct bank, concrete access aprons, sidewalks, grading, and drainage. Structural design included spread footing foundation for each t-hangar. Architectural design included floor plans and elevations, restroom, and fire barrier

### Client

Morgantown Municipal Airport  
100 Hart Field Road  
Morgantown, West Virginia 26505

### Completion Date

2017

### Project Costs

\$145,352 (Fee)

### Michael Baker's Role

- Survey and mapping
- Stormwater management
- Geotech investigation
- Permitting
- Engineer's report
- Pavement design
- Site grading design
- Drainage design
- Environmental assessment
- Architecture
- Structural Engineering
- Mechanical Engineering
- Electrical Engineering
- Construction Documents, Estimating and Bidding phase services
- Construction management

walls. Mechanical and plumbing design included heating, ventilation, plumbing, water heating, and drain-waste-vent piping for restrooms. Fire protection design included a two-hour rated fire barrier, life safety report and drawings, and a code review. Electrical design included power feed, power distribution, lighting system, controls, and grounding; site lighting photometric calculations, layout, and controls; and exit emergency egress lighting.

**Bidding and Construction Management Services**

During the bidding phase, Michael Baker distributed bid documents to material suppliers, prepared material lists, evaluated bids for completeness and accuracy, provided a recommendation for award, assisted with preparation of grant application documents, and prepared and coordinated contract documents.

Construction phase services consisted of construction administration, construction management, and construction observation. Michael Baker provided an on-site inspector to observe construction progress and activities were completed in accordance with the plans and specifications. Administrative services consisted of project coordination, meeting attendance, submittal and shop drawing review, and project closeout.

# WVU Institute of Technology, Classroom Building

*Beckley, West Virginia*

Baker provided general Architectural and Engineering services to the West Virginia University Institute of Technology, Beckley Campus. The client requested a feasibility study, which laid the groundwork for the ambitious renovation of two buildings concurrently. The first was the Classroom building, the facility will house engineering labs, computer classrooms, psychological observation and Rat laboratories as well as some administrative services.

The Classroom Building required extensive coordination between generations of building engineering systems as well as selective demolition of architectural interior systems to allow for update use. The 31,000 SF facility was designed originally as a junior high school on the 1940's and was renovated to house technically advanced mechanical, hydraulic and computer engineering laboratories. To bring the facility to the 21<sup>st</sup> century, a student lounge, student rest and study spaces- where electronics can be utilized and charged- were devised from a former kitchen and corridor locker areas, respectively. A modern mechanical distribution system was designed to support air conditioning while a new, **building-wide fire suppression system**, complete with a larger water supply line, was engineered. The Classroom Building also included the design of a psychological observation laboratory that requires national accreditation and necessitated special design considerations.

The facility also received a completely new EPDM roof to shore up existing water problems. A large energy recovery unit was installed on the roof to provide fresh air to the classrooms throughout the building. The Classroom Building also required technical coordination of the existing door hardware to interface with existing products as appropriate and necessary. These hardware considerations also had to align with campus wide standards. Lastly, both facilities received interior upgrades to emphasize University branding elements and bring renewed life to a defunct campus.

Additionally, all portions- feasibility study to design and cost proposals- of this traditional design, bid, and build project were performed under a compressed and confined time constraint, allowing the client to successfully move one campus to another in one short year.

## *Client*

West Virginia University  
Beckley Campus  
400 Kanawha Street  
Beckley, WV 25801

## *Completion Date*

July 2017  
Currently under Construction

## *Michael Baker's Role*

- Feasibility studies
- Architecture
- Mechanical engineering
- Fire Protection Engineering
- Electrical engineering
- Plumbing engineering
- Cost estimates
- Construction Administration



# WVU Institute of Technology, Benedum Building

*Beckley, West Virginia*

Baker provided general Architectural and Engineering services to the West Virginia University Institute of Technology, Beckley Campus. The client requested a feasibility study, which laid the groundwork for the fast pace renovation of the building prior to the start of the new school year in August 2017. The facility will house administrative services, student services, student government, a recreational area and upward bound.

The work completed at the 21,000 SF Benedum Center included interior finishes selection to support large numbers of student use. Other notable portions of the work included upgrades to the mechanical and fire alarm and fire suppression systems as well as retrofitted ADA toilet facilities. A conglomerate of three separate buildings, special attention was spent on exiting requirements and coordination of door hardware systems.

The facility also received a completely new EPDM roof and specialized basement wall treatments to shore up existing water penetration problems. The Benedum Center also required technical upgrades including new data lines and server. The project also requires lots of coordination of the existing door hardware to interface with existing products as appropriate and necessary. These hardware considerations also had to align with campus wide standards. Lastly, both facilities received interior upgrades to emphasize University branding elements and bring renewed life to a defunct campus.

Additionally, all portions- feasibility study to design and cost proposals- of this traditional design, bid, and build project were performed under a compressed and confined time constraint, allowing the client to successfully move one campus to another in one short year.

## *Client*

West Virginia University  
Beckley Campus  
400 Kanawha Street  
Beckley, WV 25801

## *Completion Date*

July, 2017  
Currently under Construction

## *Michael Baker's Role*

- Feasibility studies
- Architecture
- Mechanical engineering
- Fire Protection Engineering
- Electrical engineering
- Plumbing engineering
- Cost estimates
- Construction Administration





## **Good News Mountaineer Garage Administrative and Maintenance Facility**

**Charleston, WV**

Baker provided general Architectural and Engineering services to the Good News Mountaineer Garage (GNMG). The facility is located on the west side of Charleston, West Virginia. The Good News Mountaineer Garage is a nonprofit organization that accepts donations of vehicles that are repairable for a reasonable amount of money. After repair, these donated cars are then distributed to low-income families needing dependable transportation.

The GNMG selected Baker to provide complete design and construction administration services in three phases. Among these design services were the installation of a new HVAC, fire alarm system and fume detection systems. The first phase was to renovate the interior of the building on 4<sup>th</sup> Avenue in order to provide facilities for the automobile repair and administrative staff. Phase II included the build-out of a show room and Phase III was dedicated to the exterior of the building including vehicle storage and special event areas. Parking for some repaired vehicles and employee vehicles was provided east side of the building. The site is approximately 0.75 acres. The main facility has approximately 7,500 square feet of space of which 4,700 square feet, houses four administrative offices, a board room, a copier/supply room, restrooms and a large show room /event center which can accommodate up to approximately 75 individuals. The remaining 2,100 square feet is dedicated to the automotive repair functions. The garage includes two new vehicle lifts and overhead parts storage. The building was designed so that the vehicles can pull through the garage while the lifts are being used. Baker incorporated green building practices, including passive solar tube lighting in the showroom and maintenance garage. LED lighting was also used in order to help control utility costs for the operation of the facility.

### **Client**

Good News Mountaineer Garage  
1637 4<sup>th</sup> Avenue  
Charleston, WV 25387

*Ms. Asley Orr,*  
*Executive Director*  
304-344-8445

### **Completion Date**

March, 2016

### **Michael Baker's Role**

- Architecture
- Civil Engineering
- MEP Engineering
- Landscape architecture
- Structural Engineering
- Bid Phase Services
- Construction Management
- Estimating



# WVARNG Charleston Armory HVAC & Architectural Renovations

*Charleston, West Virginia*

The existing building/facility started as the Coonskin Armory constructed in 1961. The Headquarters Building was constructed simultaneously with the Coonskin Armory and occupied the second floor. Also in 1961, as a separate structure, the Adjutant General's Wing (TAG Wing) was constructed nearby. Later, in 1984 the Coonskin Armory/Headquarters Building was physically connected to the TAG Wing with an area of administrative offices. This final major construction project connected all the buildings into one major facility of over 50,000 square feet, referred to as the Charleston Armory.

The West Virginia Army National Guard (WVARNG) Construction and Facilities Management Office (C&FMO) requested a study be conducted of the consolidated mechanical and electrical components of the consolidated facility known as the Charleston Armory. Such items were considered as the condition of existing HVAC/MEP systems and design improvements or upgrades to those systems and examination of the existing building envelope and recommend possible improvements to the Envelope, HVAC, Electrical and Plumbing systems.

A loop pipe water source heat pump system determined the most cost effective for this situation, with fewer pipes, smaller space requirements and a lower installation cost. Various HVAC components included a Fluid Cooler, Boilers, Pumps, Wall Consoles, above ceiling HPs, along with some Rooftop Units and Energy Recovery Units.

During the renovation process, mold was discovered growing in certain areas of the building. An investigation was undertaken, building humidity was logged and measures were implemented to install dehumidification in existing equipment in the building, building leaks were sealed and existing mold was remediated.

Baker's design also addressed the repair of the existing roofing system, addition and repairs of roof curbs for HVAC equipment, repositioning of blocking and walk pads around the roof, and installation, repair and patching of the existing EDPM roofing system and maintaining the existing warranty.

## *Client*

West Virginia Army National Guard  
Division of Engineering and  
Facilities  
1703 Coonskin Drive  
Charleston, WV 25311-1085

*Major Michael J. Beckner*  
304-561-6333

## *Contract Completion Date*

2013

## *Baker's Role*

- Architecture
- Mechanical Engineering
- Feasibility studies
- Cost estimates
- Civil engineering
- Electrical Engineering
- Structural engineering
- Environmental Permitting



## Open-End Architectural/Engineering Services

West Virginia State University, Institute, West Virginia

Baker was retained by the West Virginia State University (WVSU) under an Open-End Architectural and Engineering contract to perform renovations, alterations, reconstruction and/or extensions of existing facilities. The Indefinite Delivery / Indefinite Quantity (IDIQ) agreement is for a period of 10 years. Baker's specific tasks include programming, planning, design development, construction documentation, evaluations, feasibility studies, cost estimating and construction contract administration services. Major "building" design and "building" renovation projects are not included in this contract.

The following is a summary of some of our experiences:

### **East Hall Renovations**

East Hall is a historic facility housing faculty administrative functions for the University. In the last several years, the original wood siding and window units have begun to show signs of age deterioration. Baker performed an inspection of the building then prepared a scope of work and construction cost opinion for the replacement of the siding and windows as well as the design of a new ADA-compliant entrance ramp.

### **Ferrell Hall Entrance Improvements**

Ferrell Hall is the primary administrative facility for the University. Baker performed a building entrance inspection and code review for ADA compliance. Baker then prepared a scope of work and construction cost opinion for the upgrades to both entry/egress points on the west end of the facility. The work included ADA-compliant walkways, stairs and railing, upgrades to the existing wheelchair ramp, a decorative retaining wall and landscape improvements.

### **Dawson Hall Humidity Assessment**

Dawson Hall is a women's dormitory on the University Campus. Baker performed a building inspection for humidity and mold related problems. It was determined that further investigation and testing was required. Once the investigation is complete, a report will be prepared outlining recommendations for improvements to the ventilation and insulation within the individual dorm rooms Baker will then prepared a scope of work for corrective measures of the air flow/ventilation and building envelop. .

### **Hamblin Hall Water Line Location**

Hamblin Hall serves as the University's Science Building. A main 10" water line serving the campus runs under the facility and through the adjacent vacant lot. Baker was engaged to locate the line and associated shut-off valve which was inadvertently buried during fill operations circa 1985. Services involved underground line location techniques, the examination of old campus mapping, and coordination with the site survey team that actually located the buried valve.

### **Client**

West Virginia State University  
124 Ferrell Hall  
Institute, WV 25112

*Janis Bennett* /Director of Purchasing  
304-766-3010

### **Completion Date**

10-Year IDIQ ending 2021



### **Storm Drain Assessment and Repair**

A study was completed of 72" storm drain system, 42" storm drain system and various combined sewer and storm drains on campus. Camera crews videoed selected pipe sections from the outfalls back to manholes and beyond.

A Deeply buried 72" CMP (Corrugated Metal Pipe) and damaged portions of an existing RCP (Reinforced Concrete Pipe) needed replacement with new RCP, the project was designed and constructed after an extensive study to determine the extents of the damage.

Also a 42" storm drainage system from State Route 25 on the east side of campus that combine at a drop inlet (DI) east of the Hamblin Hall parking area an on to Dubois Street was evaluated for damage. Recommendations and estimates were provided to the university.

An 18" VCP (Vitrified Clay Pipe) main sewer line serving the campus was also evaluated for damage due to the presents of sinkhole forming behind the baseball field. . Old drawings indicate that this pipe extends from Athletics Drive south to a lift station east of the football field and was a "combined sanitary and storm sewer". Recommendations and estimates were provided to the University for the upgrade of this line.



### **Campus Main Water Loop Assessment and Design**

Baker mapped domestic water valves, meters and fire hydrants in and around the main core campus in preparation for new district water piping system design.

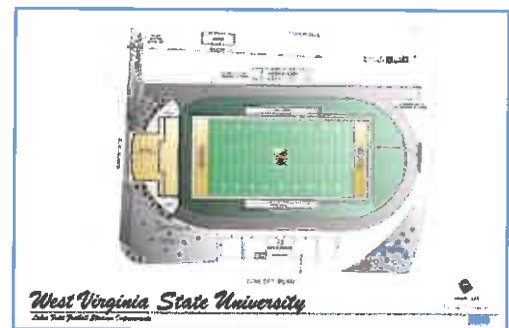
A new loop water system for the main campus was designed and included a new secondary service connection from Barron Drive. This will back-feed the main water piping system. The new service mains are being installed in phases to help control costs and minimize disruptions to the campus.



### **Lakin Field Football Stadium Improvements**

WVSU's Lakin Field serves the University's Football Program and is currently in need of upgrades. The field has a natural turf field with an oval track surrounding it, and drainage structures in the area which are aging and need upgrading. The University requested that Baker assist them with planning upgrades to the football field and drainage system. Baker's civil services included a topographical survey of the area including the drainage structures in the football field area. We also prepared an analysis of the conditions and a proposal with costs of upgrading the field to an artificial turf field, addition of an ornamental fence, a new scoreboard with video display, new goal posts, ticket booths, and upgrades to the existing drainage.

Baker additionally prepared a preliminary cost analysis of the work for fund raising purposes.



# Academic Facilities Renovation Program

## *State System of Higher Education, Statewide, Pennsylvania*

Baker was selected as one of four firms, statewide, to represent the State System of Higher Education in an "Open Ended Professional Project Management Services Agreement" to provide professional management services to the state's fourteen universities.

Responsibilities under this contract included reviewing of project schedules and cost estimates; value engineering, constructability reviews, and debriefing meetings; issuing exception reports to final bidding documents recommending any changes to the university; and developing a procurement acquisition plan for data systems and head-end equipment procurement, installation, and training.

The first assigned task was to provide Bloomsburg University with a third-party design review of the Local Area Network System and Electrical Upgrades to Elwell Hall, an existing seven-story dormitory building. The project included the computer cabling and electrical power distribution throughout the building for 784 drops.

A new air conditioning system and modifications for network telecommunications and power closets throughout the building, supported from the central spine in the lower level, were also included.

A second task under this agreement was to provide a cost estimate review for the pre-final design phase documents to remove asbestos at Bloomsburg University's Heat Plant.

Also under this State System contract was a design review of Edinboro University's Campus Technology Project, Phases I, II, and III. The work included the construction of raceways; installation and testing of all fiber optic cables, coaxial cables, and telephone cables at the Edinboro and Erie campuses; installation of fiber optic/copper cables and CATV cables in the specific campus buildings and the associated electrical upgrades required to provide fully functional voice, video, and data outlets; and the Porreco Extension Center connectivity with the Edinboro Campus.

Baker also reviewed Edinboro's Campus Infrastructure Upgrade design. The project included installation of new water lines; sanitary and storm sewer systems upgrade; upgrade/replacement and redundancy of sanitary sewage lift stations; installation of back flow valves on individual building water services; site lighting upgrades; and parking lots and roadways resurfacing.

### Client

State System of Higher Education  
Office of the Chancellor  
2986 North Second Street

Harrisburg, PA 17110

*Robert Kormanik, P.E.*

### Baker's Role

- Project Management Services
- Cost Estimating
- Value Engineering
- Constructability Reviews
  - Architecture
  - Civil Engineering
  - Mechanical Engineering
  - Electrical Engineering
  - Landscape architecture
  - Structural Engineering
  - Bid Phase Services
  - Construction Inspection
- Scheduling
- Risk Analysis
- Procurement Strategy
- Contract Document Review



EDINBORO UNIVERSITY  
OF PENNSYLVANIA

# West Virginia State Capitol Restroom Renovations

*Charleston, West Virginia*

Baker led a team of experts in a planning study for the restoration or renovation of 31 restrooms in the West Virginia Capitol Building. The planning study was intended to assess the facilities and their conformance to current code requirements and code-required capacities, compliance with Americans with Disabilities Act (ADA) requirements, quantification of the building occupancy during normal and peak periods, and an evaluation of gender distribution of restrooms within the capitol. The infrastructure of the plumbing and associated systems were also assessed in the course of the study including: water and sewer, fire protection, ventilation, electrical and structural as it related to the restrooms.

The capitol building was built in three phases between 1925 and 1932, and is on the National Register of Historic Places.

The study and subsequent design addressed the design framework for the renovation of the selected restrooms, provided an overall project cost, and propose a logical sequence of design, construction, and schedule of implementation over three years. The study portion identified and verified physical characteristics, including room layouts; fixture counts; location of all mechanical, electrical, and plumbing (MEP) devices; current level of ADA compliance; and location and condition of vitrolite and carrara glass panels. The study also included an analysis of building population issues, building code issues, and the potential impacts of construction.

The findings and recommendations were presented and accepted, and a complete set of construction documents were developed with for construction sequencing and scheduling. The final plan incorporated the client's comments in the schematic and design development documents.

The project is currently awaiting funding from the State.



## *Client*

State of WV General Services  
Division  
Department of Administration  
1900 Kanawha Boulevard East  
Building 1, Room MB-60  
Charleston, WV 25305

## *Completion Date*

Awaiting funding

## *Michael Baker's Role*

- Feasibility studies
- Architecture
- Plumbing engineering
- Mechanical engineering
- Fire Protection Engineering
- Electrical engineering
- Cost estimates

## **APPENDIX 3**





## REFERENCES



Each of the Project Profiles found in Appendix 2 lists Michael Baker's client and contact information for your use as a reference. Additionally, we offer the following diverse list of past or current clients and contact information:

- **West Virginia State University**  
P.O. Box 1000  
Institute, WV 25112-1000  
*Mr. Marvin Smith, Facilities Director*  
*(304) 550-2839*
- **West Virginia University/ WVU Tech**  
410 Neville Street  
Beckley, WV 25801  
Phone: 304-929-0325  
*Mr. Robert Moyer, Director of Facilities and Planning*  
*(304) 550-2839*
- **130<sup>th</sup> Airlift Wing West Virginia Air National Guard**  
1679 Coonskin Drive, Unit 18  
Charleston, WV 25311-5005  
*Captain Harry Netzer, P.E., Deputy Base Civil Engineer*  
*(304) 341-6649*
- **West Virginia Army National Guard**  
1707 Coonskin Drive  
Charleston, WV 25311-1099  
*Mr. Joe McClung, Project Manager*  
*(304) 561-6548*
- **City of Nitro** since 2009  
20<sup>th</sup> Street  
Nitro, WV 25143  
*Honorable David Casebolt, Mayor*  
*(304) 419-3322*
- **City of Winfield**  
1 Main Street  
Winfield, WV 25213  
*Honorable Randy Barrett, Mayor*  
*(304) 586-2122*
- **West Virginia Department of Transportation – Division of Highways**  
1900 Kanawha Boulevard East,  
Building 5, Room A 405  
Charleston, WV 25305  
*Mr. Elwood Penn, Director of Planning*  
*(304) 558-9269*