WEST VIRGINIA SCHOOLS
for the DEAF and the BLIND

EXPRESSION OF INTEREST

A&E EOI for Renovation and Assessment Projects at the WVSDB

CEOI 0403 DBS2100000001 | April 22, 2021

Submitted to:
West Virginia Department of Administration
Purchasing Division
2019 Washington Street East
Charleston, WV 25305-0130

Submitted by:

Michael Baker
INTERNATIONAL

Michael Baker
INTERNATIONAL

We Make a Difference

April 22, 2021

Mr. Joseph E. Hager
West Virginia Department of Administration
Purchasing Division
2019 Washington Street, East
Charleston, West Virginia 25305

Subject: **CEOI 0403 DBS2100000001**
A&E EOI for Renovation and Assessment Projects at the WVSDB

Dear Mr. Hager:

The Charleston office of Michael Baker International, Inc. (Michael Baker) is pleased to respond to the subject Expression of Interest for Renovation and Assessment Projects at the WVSDB. We have relevant experience with the design elements necessary for this assignment and have had recent projects at the School that include; HVAC, Fire Protection, Electrical, Architectural and Life Safety improvements.

Michael Baker is well positioned to assemble a comprehensive design team (in-house) including: Mechanical, Electrical, Structural, Civil, Architectural, Telecomm and Historic Preservation expertise. Our diverse team of professionals are well versed in the preparation of construction documents, bid specifications, and the application of required construction permits. Michael Baker can also provide assistance during the Bidding process and can provide the appropriate level of Construction Administration for the various projects.

We thank you for your consideration and look forward to meeting with the selection committee 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 my office (304) 769-2152 (or cell phone 304-539-8356) or by e-mail at dhilliard@mbakerintl.com

Very truly yours,
Michael Baker International, Inc.

David Hilliard

Enclosure

TABLE OF CONTENTS

MANDATORY PROPOSAL SUBMISSION FORMS

PROPOSAL

PROJECT BACKGROUND ..... Error! Bookmark not defined.

QUALIFICATION & EXPERIENCE ..... Error! Bookmark not defined.-2

Firm Capacity 1-2

PROJECT TEAM 3

Management and Staffing 3

Persons Assigned to the Project 3

TEAM ORGANIZATION 4

PROJECT APPROACH 5-9

Project/Objective 1: Collaborative Design 5

Project/Objective 2: Initial Consultation 5

Project/Objective 3: Project Tasks 5-7

Project/Objective 4: The Design Process 7-8

Project/Objective 5: Bidding Phase 8

Project/Objective 6: Construction Administration 8

GENERAL INFORMATION 9

APPENDIX 1 – Resumes

APPENDIX 2 – Project Profiles

APPENDIX 3 – References

Purchasing Division Forms

Michael Baker
INTERNATIONAL

	Department of Administration Purchasing Division 2019 Washington Street East Post Office Box 50130 Charleston, WV 25305-0130	**State of West Virginia** **Centralized Expression of Interest** **Architect/Engr**

Proc Folder: 858601 **Doc Description:** A&E EOI for Renovation and Assessment Projects at the WVSDB **Proc Type:** Central Contract - Fixed Amt			**Reason for Modification:**
Date Issued	**Solicitation Closes**	**Solicitation No**	**Version**
2021-03-22	2021-04-20 13:30	CEOI 0403 DBS2100000001	1

BID RECEIVING LOCATION

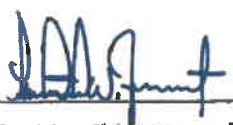
BID CLERK
DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
2019 WASHINGTON ST E
CHARLESTON WV 25305
US

VENDOR

Vendor Customer Code:

Vendor Name :	**Michael Baker International, Inc.**
Address :	**400 Washington Street East, Suite 301**
Street :	
City :	**Charleston**
State :	**West Virginia** **Country : USA** **Zip : 25301**
Principal Contact :	**David Hilliard**
Vendor Contact Phone:	**304-769-2152** **Extension:**

FOR INFORMATION CONTACT THE BUYER
Joseph E Hager III
(304) 558-2306
joseph.e.hageriii@wv.gov

Vendor Signature X  **FEIN#** **25-1228638** **DATE** **April 22, 2021**

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

ADDITIONAL INFORMATION

The Acquisition and Contract Administration Section of the Purchasing Division ("Purchasing Division") is soliciting Expression(s) of Interest ("EOI" or "Bids") for West Virginia Schools for the Deaf and the Blind ("Agency"), from qualified firms to provide architectural/ engineering services ("Vendors") as defined herein per the attached specifications and terms and conditions.

PROJECT: The mission or purpose of the project for which bids are being solicited is to provide necessary engineering, and other related professional services to design as well as provide construction contract administration services for a School for the Blind HVAC, electrical, and windows upgrades, Central Supply building structural assessment, Seaton Hall Boys Dorm renovation into administrative offices, School for the Deaf building elevator upgrade, Keller Hall building roof replacement, IRC building parking lot completion, Blue & Gold building renovation, and update all campus building floor plans and related work at the West Virginia Schools for the Deaf and the Blind. The project will include the design, specification, and construction administration of all necessary improvements to the buildings ("Project").

INVOICE TO	SHIP TO
SCHOOL FOR THE DEAF & BLIND 301 EAST MAIN ST ROMNEY WV 26757-1894 US	SCHOOL FOR THE DEAF & BLIND 301 EAST MAIN ST ROMNEY WV 26757-1894 US

Line	Comm Ln Desc	Qty	Unit Issue
1	Architectural Engineering		

Comm Code	Manufacturer	Specification	Model #
81101508			

Extended Description:
Services of an architectural engineering firm

SCHEDULE OF EVENTS

Line	Event	Event Date

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.

(Name, Title)

David Hilliard, P.E., Senior Mechanical Engineer

(Printed Name and Title)

400 Washington Street East, Suite 301, Charleston, WV 25301

(Address)

304-769-2152 / 304-769-0822

(Phone Number) / (Fax Number)

dhilliard@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)

(Authorized Signature) (Representative Name, Title)

Patrick W. Fogarty, P.E., P.S., Senior Associate

(Printed Name and Title of Authorized Representative)

April 22, 2021

(Date)

304-769-0821 / 304-769-0822

(Phone Number) (Fax Number)

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: **DBS2100000001**

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)

- [X] Addendum No. 1
- [X] Addendum No. 2
- [ ] Addendum No. 3
- [ ] Addendum No. 4
- [ ] Addendum No. 5
- [ ] Addendum No. 6
- [ ] Addendum No. 7
- [ ] Addendum No. 8
- [ ] Addendum No. 9
- [ ] 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

April 22, 2021
Date

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

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

CONSTRUCTION CONTRACTS: Under W. Va. Code § 5-22-1(i), the contracting public entity shall not award a construction contract to any bidder that is known to be in default on any monetary obligation owed to the state or a political subdivision of the state, including, but not limited to, obligations related to payroll taxes, property taxes, sales and use taxes, fire service fees, or other fines or fees.

ALL CONTRACTS: 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 exceed 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: (1) for construction contracts, the vendor is not in default on any monetary obligation owed to the state or a political subdivision of the state, and (2) for all other contracts, 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: _____ Date: April 22, 2021

State of West Virginia

County of Kanawha, to-wit:

Taken, subscribed, and sworn to before me this 22 day of APRIL, 2021.

My Commission expires AUGUST 09, 2023.

AFFIX SEAL HERE

OFFICIAL SEAL
NOTARY PUBLIC
STATE OF WEST VIRGINIA
Mohiuddin Shaik
53 Roanoke Trce
Charleston, WV 25314
My Commission Expires August 09, 2023

NOTARY PUBLIC _____

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

State of West Virginia
Centralized Expression of Interest
Architect/Engr

Proc Folder: 858601 **Doc Description:** A&E EOI for Renovation and Assessment Projects at the WVSDB **Proc Type:** Central Contract - Fixed Amt			**Reason for Modification:** Addendum #1 issued to publish the agency responses to all vendor submitted questions.
Date Issued	**Solicitation Closes**	**Solicitation No**	**Version**
2021-04-12	2021-04-20 13:30	CEOI 0403 DBS2100000001	2

BID RECEIVING LOCATION

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

VENDOR

Vendor Customer Code:

Vendor Name : Michael Baker International, Inc.

Address : 400 Washington Street East, Suite 301

Street :

City : Charleston

State : West Virginia **Country :** USA **Zip :** 25301

Principal Contact : David Hilliard

Vendor Contact Phone: 304-769-2152 **Extension:**

FOR INFORMATION CONTACT THE BUYER
Joseph E Hager III
(304) 558-2306
joseph.e.hageriii@wv.gov

Vendor Signature X **FEIN#** 25-1228638 **DATE** April 22, 2021

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

DITIONAL INFORMATION

Addendum

Addendum #1 issued to distribute the attached documentation to the vendor community

****

The Acquisition and Contract Administration Section of the Purchasing Division ("Purchasing Division") is soliciting Expression(s) of Interest ("EOI" or "Bids") for West Virginia Schools for the Deaf and the Blind ("Agency"), from qualified firms to provide architectural engineering services ("Vendors") as defined herein per the attached specifications and terms and conditions.

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Line	Comm Ln Desc	Qty	Unit Issue
1	Architectural Engineering		

Comm Code	Manufacturer	Specification	Model #
81101508			

Extended Description:
Services of an architectural engineering firm

SCHEDULE OF EVENTS

Line	Event	Event Date

SOLICITATION NUMBER: CEOI 0403 DBS2100000001
Addendum Number: No.01

The purpose of this addendum is to modify the solicitation identified as ("Solicitation") to reflect the change(s) identified and described below.

Applicable Addendum Category:

[ ] Modify bid opening date and time

[ ] Modify specifications of product or service being sought

[✓] Attachment of vendor questions and responses

[ ] Attachment of pre-bid sign-in sheet

[ ] Correction of error

[ ] Other

Description of Modification to Solicitation:

Addendum issued to publish and distribute the attached documentation to the vendor community.

1. To publish the agency responses to all vendor submitted questions.

Additional Documentation: Documentation related to this Addendum (if any) has been included herewith as Attachment A and is specifically incorporated herein by reference.

Terms and Conditions:

1. All provisions of the Solicitation and other addenda not modified herein shall remain in full force and effect.

2. Vendor should acknowledge receipt of all addenda issued for this Solicitation by completing an Addendum Acknowledgment, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.

ATTACHMENT A

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: CEOI DBS21*01

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.

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[X]	Addendum No. 1	[ ]	Addendum No. 6
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[ ]	Addendum No. 3	[ ]	Addendum No. 8
[ ]	Addendum No. 4	[ ]	Addendum No. 9
[ ]	Addendum No. 5	[ ]	Addendum No. 10

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Michael Baker International, Inc.
Company

Authorized Signature

April 22, 2021
Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.
Revised 6/8/2012

RFI: Questions from vendors for CEOI DBS 21*01 Renovation and Assessment Projects

Q.1. Has a budget been established/identified for the many needs for the School and if so, is the funding available and approved for the effort?

A. Yes, a budget has been established, submitted, and approved as part of the WVSDB 2020 CEFP. As a state agency, WVSDB budget is provided through the legislative process. When approved, WVSDB capital projects may be supplemented by the SBA 3% Fund for multi-county educational facilities. In addition, the School for the Blind HVAC project may partially be finance by time sensitive COVID-CARES Act relief funds which must be spent by September 2022.

Q.2. Is a master plan document available that would have formally defined the needs outlined in the solicitation? Would such a plan be available, if not now, to the shortlisted/selected firm?

A. These capital improvement projects were established in the WVSDB 2020 CEFP which has been submitted and approved.

Q.3. Has a preliminary A/E study been completed for the project, and if so, is the study available?

A. These capital improvement projects, and the estimated cost thereof were established in the WVSDB 2020 CEFP with the assistance of an A/E firm.

Q.4. Can site visits be scheduled, and if so, with whom should they be scheduled?

A. No.

Q.5. Are the A/C units in the School for the Blind individual room units? Or multiple building-wide units?

A. The Auditorium has a heat pump, air handler and duct system but no outside air intake. A portion of the office area has a heat pump, air handler and duct system but no outside air intake. Approximately four classrooms have through wall PTAC units that were recently installed as a temporary measure until this project is completed. The remaining classrooms are heated with baseboard heat and air conditioned with portable AC units that vent out through plywood in a window opening. The original classroom AC units are floor mounted with refrigerant lines running to an outdoor condensing unit; all of these have failed and are not repairable.

Q.6. Will you want a building wide HVAC system in the School for the Blind upgrade? Are there existing ducts?

A. The WV Department of Education – Office of School Facilities surveyed the building and made the following recommendations: On March 09, 2021, at the request of your office, staff members from the WVDE Office of School Facilities visitedThe School for the Blind for the purpose of reviewing the capabilities the HVAC systems with regards to providing thermal comfort and proper indoor air quality as defined by ASHRAE, the industry recognized standard for HVAC design and acceptable indoor air quality in commercial facilities and WVBE Policy 6200. The following are the findings and recommendations from that visit.

FINDING - 097-602-01

This facility was constructed in 1962 and most of the HVAC units are original equipment. The HVAC system at this site consists of incremental unit ventilators and packaged terminal air conditioning (PTAC) units in classrooms and an air handler serving the auditorium/stage area. All HVAC units have surpassedtheir life expectancy of 12-15 years. The classroom unit ventilators have major failures that have rendered the units inoperative. Replacement parts for these units are no longer available. Auxiliary heaters and portable air conditioners have been placed in the classrooms to provide heating and cooling. Currently, no outside air is being delivered to the classrooms using the existing HVAC system. The classroom PTAC units and the air handler serving the music area does not have outside air capabilities.

RECOMMENDATION

It is recommended that the unit ventilators, PTAC units, and air handler be replaced with an HVAC system and building automation controls capable of providing the outside air ventilation rates, thermal comfort, and humiditylevels required: It is recommended that air cleaning devices, such as UV-C lamps, needle point bi-polar ionization, or other air cleaning technologies be added to the air handler along with a MERV 13 level air filtrationcapability. The HVAC system must comply with ASHRAE 62.1 Standards and WVBE Policy 6200.

The chosen A/E firm will be required to work closely with the WVDE-OSF to establish a design for the new system. See answer to question 6 for additional existing HVAC system details. Existing high ceilings may need lowered to install ductwork if that is the new design chosen.

Q.7. Central Supply Building Structural Assessment: Are there any existing drawings available of this building to understand the design of the structural system (if chosen)?

A. This building was constructed approximately 1945. To date no drawings have been found in the WVSDB archives; if drawings are found they will be turned over to the A/E firm. At this time, assume there will be no drawings.

Q.8. Seaton Hall Boys Dorm Wing Renovation to Administration offices: Do you have the approximate SF of the extents of work?

A. Approximately 13,440 SF total, two floors at 6,720 SF each.

Q.9. Is the asbestos in insulation, fireproofing, floor tile/mastic, or other?

A. Known asbestos is floor tile/adhesive and adhesive that holds 9X9 fiber ceiling tiles in place. Codes will require an extensive asbestos inspection and testing; WVSDB will procure and pay for this service.

Q.10. Will the HVAC improvements address only the new Administrative offices, or will it be for the entire building?

A. New Administrative Offices, current Boys Dorm Wing, only.

Q.11. School for the Deaf Elevator Upgrade: Do you anticipate needing to enlarge the shafts to meet code?

A. The existing elevator shafts do not go through the roof. The existing passenger elevator is small, may require enlargement to meet codes; will rely on A/E expertise for this decision.

Q.12. Blue & Gold Building: Is this building with the National or Local Historic Registry?

A. To our knowledge no, all recent exterior masonry repairs and new roof installation were approved by WV SHPO. WV SHPO is aware that WVSDB was planning interior renovations.

Q.13. Will this be a complete gut job?

A. That is the anticipation, it will be up to the A/E firm to decide if some walls can be reused in the new floor plan.

Q.14. Do you know the approximate SF of this building?

A. The main building is one floor approximately 40' X 136' with a basement equipment room, approximately 14' X 72' under one side, the remaining floor area has a crawl space under it.

Q.15. Update all Campus Floor Plans: Are plans needed for all 20 buildings on the campus map?

A. 14 buildings total (Hines Hollow House, Boiler House, High Tunnel, Fish Building, Greenhouse and Transportation Building will not be included).

Q.16. Can you tell us the number of stories for each building that is more than 1 story tall?

A. Administration Building is 2 floors with a small basement equipment room, three wings. Seaton Hall has three wings with a one floor connection area, Girls Wing is four stories, Boys Wing is two stories, Dining Hall wing is two stories. Physical Education Building is two floors. School for the Deaf is three stories. School for the Blind is two stories. Keller Hall is three stories. Food Storage Building is two floors. Elementary Deaf Building has four wings, West wing is three stories, main section is three stories, east wing is two stories with a small basement area under one wing, and north wing is elevated with two stories and a small storage area under one end and covered play area under other end.

Q.17. Do you have any existing plans of the buildings, or will all plans start from scratch?

A. There are existing un-dimensioned floor plans for each building, but they are not all accurate. All will require updating to correct inaccuracies and provide information as detailed in the EOI.

Q.18. Will these buildings be mostly unoccupied if they are surveyed in the summer?

A. Yes, but understand we have year-round staff (administrators, custodians and maintenance) in most buildings plus there may be summer activities.

Q.19. Can we schedule a visit to the project site before the proposal submission on April 20, 2021?

A. No.

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

State of West Virginia
Centralized Expression of Interest
Architect/Engr

Proc Folder: 858601 **Doc Description:** A&E EOI for Renovation and Assessment Projects at the WVSDB **Proc Type:** Central Contract - Fixed Amt			**Reason for Modification:** Addendum #2 issued to revise Section 3: Project Specifications of EOI to include Item #9 and extend bid due date.
Date Issued	**Solicitation Closes**	**Solicitation No**	**Version**
2021-04-14	2021-04-22 13:30	CEOI 0403 DBS2100000001	3

BID RECEIVING LOCATION

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

VENDOR

Vendor Customer Code:

Vendor Name : Michael Baker International, Inc.

Address : 400 Washington Street East, Suite 301

Street :

City : Charleston

State : West Virginia **Country :** USA **Zip :** 25301

Principal Contact : David Hilliard

Vendor Contact Phone: 304-769-2152 **Extension:**

FOR INFORMATION CONTACT THE BUYER
Joseph E Hager III
(304) 558-2306
joseph.e.hageriii@wv.gov

Vendor Signature X  **FEIN#** 25-1228638 **DATE** April 22, 2021

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

DITIONAL INFORMATION

Addendum

Addendum #2 issued to distribute the attached documentation to the vendor community

****

The Acquisition and Contract Administration Section of the Purchasing Division ("Purchasing Division") is soliciting Expression(s) of Interest ("EOI" or "Bids") for West Virginia Schools for the Deaf and the Blind ("Agency"), from qualified firms to provide architectural engineering services ("Vendors") as defined herein per the attached specifications and terms and conditions.

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Line	Comm Ln Desc	Qty	Unit Issue
1	Architectural Engineering		

Comm Code	Manufacturer	Specification	Model #
81101508			

Extended Description:
Services of an architectural engineering firm

SCHEDULE OF EVENTS

Line	Event	Event Date

SOLICITATION NUMBER: CEOI 0403 DBS2100000001
Addendum Number: No.02

The purpose of this addendum is to modify the solicitation identified as ("Solicitation") to reflect the change(s) identified and described below.

Applicable Addendum Category:

[✓] Modify bid opening date and time

[✓] Modify specifications of product or service being sought

[ ] Attachment of vendor questions and responses

[ ] Attachment of pre-bid sign-in sheet

[ ] Correction of error

[ ] Other

Description of Modification to Solicitation:

Addendum issued to publish and distribute the attached documentation to the vendor community.

1. Revised Section 3: Project Specifications to include item #9 per for emergency generator per attached revised specification.
2. Extend bid due date to 4/22/2021.

Additional Documentation: Documentation related to this Addendum (if any) has been included herewith as Attachment A and is specifically incorporated herein by reference.

Terms and Conditions:

1. All provisions of the Solicitation and other addenda not modified herein shall remain in full force and effect.

2. Vendor should acknowledge receipt of all addenda issued for this Solicitation by completing an Addendum Acknowledgment, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.

ATTACHMENT A

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: CEOI DBS21*01

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.

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April 22, 2021
Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.
Revised 6/8/2012

EXPRESSION OF INTEREST

West Virginia Schools for the Deaf and the Blind
Renovation and Assessment Projects

SECTION THREE: PROJECT SPECIFICATIONS

1. **Location:** Agency is located at 301 E. Main Street, Romney, WV 26757, and the Project will be completed at 301 E. Main Street, Romney, WV 26757.

2. **Background:** The West Virginia Schools for the Deaf and the Blind is responsible for the upkeep, improvement, and repair of the buildings located at 301 E. Main Street, Romney, WV 26757.
    1. School for the Blind HVAC/Electrical/Window Upgrades
        a. Building constructed in 1962
        b. Most air conditioning units have failed
        c. Majority of rooms are heated with electric baseboard
        d. Existing windows are 1/8" plate glass
        e. Requires new HVAC system that meets current codes including fresh air intake
        f. New HVAC system to be integrated into an existing Automated Logic control system
    2. Central Supply Building Structural Assessment
        a. Building constructed circa 1940s
        b. Building structure has deteriorated
        c. WVSDB requires a structural study to determine if building can be repaired and renovated or if building requires being demolished
    3. Seaton Hall Boys Dorm Wing to Administration Offices Renovation
        a. Building constructed in 1954
        b. The intent is to gut one wing of the building as required and construct new administration offices
        c. Project will require asbestos abatement
        d. Requires new HVAC system that meets current codes including fresh air intake
        e. New HVAC system to be integrated into an existing Automated Logic control system
        f. Upgrade elevator controller to include fire recall and integrate into fire alarm system
    4. School for the Deaf Elevator Upgrade
        a. Building constructed in 1971
        b. Has two original 1971 Southeastern elevators: one passenger and one freight
        c. Upgrade both elevators to passenger elevators to meet current codes and ADA requirements

EXPRESSION OF INTEREST

West Virginia Schools for the Deaf and the Blind

Renovation and Assessment Projects

5. Keller Hall Roof Replacement
    a. Building constructed in 1972
    b. Existing deteriorated and damaged EPDM roof requires replacement
    c. Remove abandoned roof mounted HVAC Units
    d. Modify plumbing vent pipes
6. WVSB/IRC Parking Lot
    a. Existing gravel parking lot constructed by U.S. military in 2019
    b. Parking lot to be completed with asphalt paving, ADA sidewalks and ramps, storm drainage system and lighting system
7. Blue & Gold Building
    a. Building constructed in 1870s and renovated in 1962
    b. Exterior masonry has been repaired in 2019
    c. New EPDM roof installed in 2019
    d. Building interior is to be renovated into a Student Activities Center
    e. Requires new HVAC system that meets current codes including fresh air intake
    f. New HVAC system to be integrated into an existing Automated Logic control system
    g. Will require a sprinkler system, no system currently in building
    h. Will require new fire alarm system
8. Update All Campus Floor Plans
    a. Update all WVSDB Campus building floor plans to show accurate layout
    b. Include locations of all fire extinguishers, Fire Alarm Panels, and sprinkler system control valves
    c. Prepare fire escape floor plan routes for all rooms in buildings that require this
9. Keller Hall Dormitory Emergency Generator
    a. Building constructed in 1972.
    b. Three story masonry/brick building with approximately 38,766 SF
    c. Basement houses commercial kitchen, offices, activities rooms and mechanical rooms. First and second floors are dorms.
    d. Upgrade existing 1200 amp switchgear to meet current codes.
    e. Install appropriately sized emergency generator to support building services required during a power outage.

PROPOSAL

Michael Baker
INTERNATIONAL

PROJECT BACKGROUND

Michael Baker is extremely interested in continuing our successful working relationship with the West Virginia Schools for the Deaf and the Blind!

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 School for the Deaf and the Blind, Romney Campus. The firm will be responsible to evaluate the existing conditions at the chosen sites, make recommendation 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), the mission of the project is to provide the necessary engineering and other related professional services for design and construction administration for the following assignments: School for the Deaf - HVAC, Electrical, and window replacement, Central Supply building structural assessment, Seaton Hall Boys Dorm renovation into administrative offices, School for the Deaf building elevator upgrade, Keller Hall roof replacement, IRC building parking lot, Blue and Gold building renovation and updating all campus building floor plans and related work at the West Virginia Schools for the Deaf and the Blind.

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 we are extremely interested in continuing our successful working relationship with the West Virginia Schools for the Deaf and the Blind!

QUALIFICATIONS AND EXPERIENCE

Michael Baker's proposed team of experienced professionals has demonstrated the ability to deliver quality work products to our clients, on-time and on budget. Michael Baker can provide the entire depth of architectural and engineering services necessary to complete the project. Everyone on this project team has extensive experience in their field of expertise and have demonstrated success on projects of similar size and scope.

Based upon our understanding of the project scope as stated in the EOI, Michael Baker will execute all A/E Design, Construction Administration and Planning for the project with our current staff. For the specialized task of elevator upgrades, Michael Baker will consult with an appropriately selected elevator supplier.

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. We have staff members in Morgantown, Martinsburg and Elkins on a regular basis which will allow for quick response for meetings, site visits, and deliveries at your location in Romney as may be required.

Michael Baker's local clients for facility design and renovation projects include, but are not limited to, colleges and universities, K-12 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 scope of service to meet our client's needs.

Locally, Michael Baker was retained by WV General Service Division to evaluate and design ADA, and plumbing upgrades for 33 restrooms at the historic West Virginia State Capitol Building, as well as developing a campus-wide Master Planning document for the Capitol Complex. We recently completed the construction administration portion of work at the WVSDB and the construction of 11 of the 33 restrooms at the State Capitol. In the past few years Michael Baker worked on roof replacement and renovations to buildings at the relocated WVU Tech campus in Beckley West Virginia. The renovations included new doors, upgraded fire sprinkler systems, upgrades to fire alarm systems, and HVAC renovations and upgrades.

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.

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 expertise and qualifications to provide the required services for WVSDB on these important projects. We have local and nationally recognized experts with the technical experience necessary for this assignment. In addition, as you well know, Michael Baker's team has an established record of providing quality services for the WVSDB on our ongoing assignments.

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

- Nationally recognized expertise in Engineering (Civil, Structural, Mechanical, Fire Protection, Plumbing and Electrical)
- Nationally recognized expertise in Architecture, Assessment, Programing and Planning
- 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.

PROJECT TEAM

The Michael Baker 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 East, Suite 301, Charleston, WV 25301
304-769-0821 | RHall@mbakerintl.com

Management and Staffing
The project team will be staffed mainly out of the Charleston West Virginia office, with other professionals working from other offices on an as need basis. Patrick Fogarty will directly manage and coordinate efforts of the design team, overseeing design quality, budget, and schedule. The selected primary client contact for this Project will be David Hilliard. He will also lead the Mechanical/Electrical/Plumbing portion of the design team, with Joseph Chaffin as the Architect of Record. Jesse Rangel will be the lead Architect. They will be coordinating extensively between the architectural and mechanical designers to provide the most efficient and practical solutions for the affected buildings. 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.

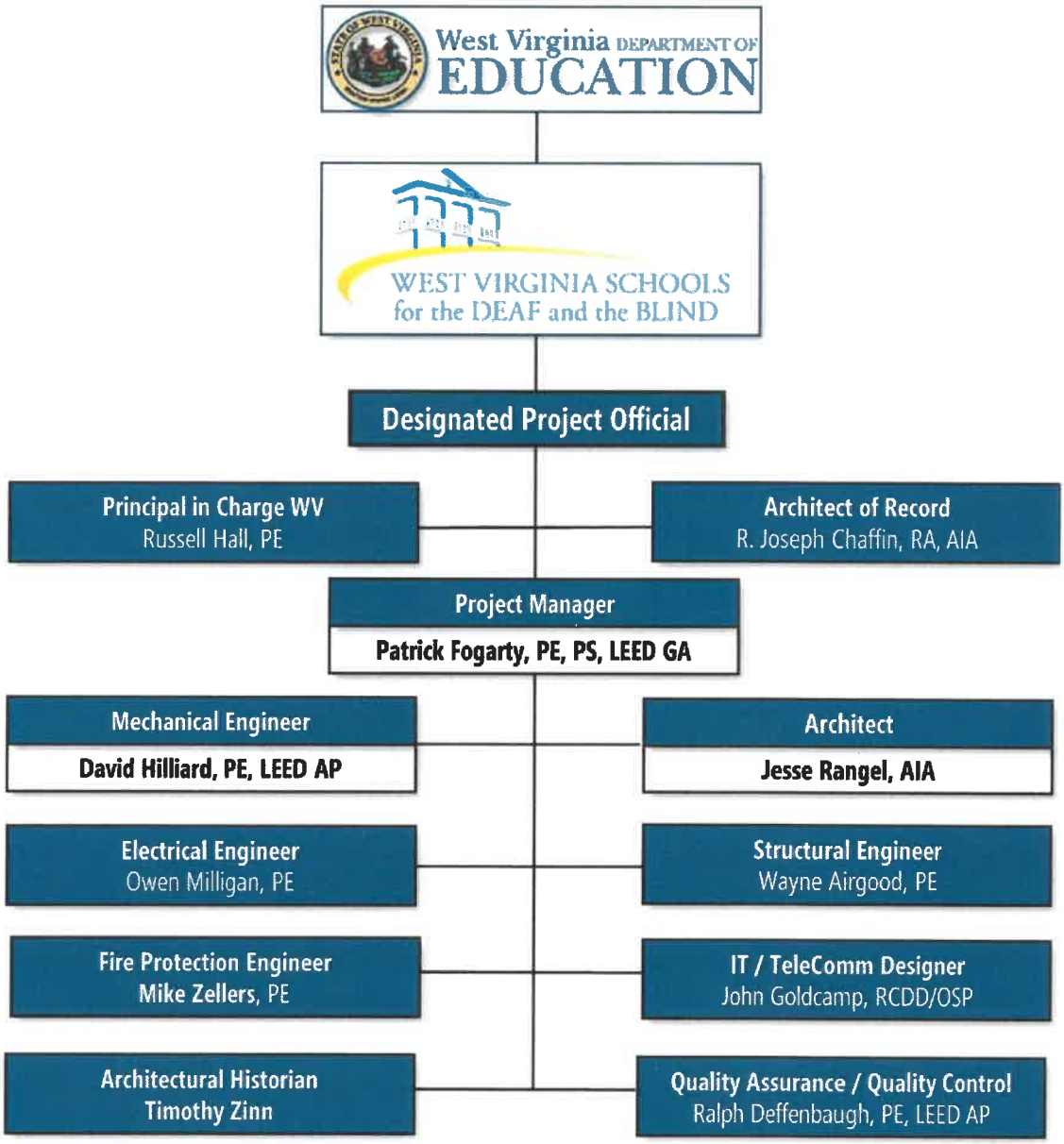
Persons Assigned to the Project *(Resumes Provided in Appendix 1)*

NAME	ROLE
PATRICK FOGARTY, P.E., PS, LEED GA	Project Manager / Civil Engineer
DAVID HILLIARD, P.E., LEED AP BD+C	Task Manager / Mechanical Engineer
JOSEPH CHAFFIN, AIA	Lead Architect
JESSE RANGEL, AIA	Architect
OWEN MILLIGAN, P.E.	Electrical Engineer
KEVIN SPANGLER, P.E.	Fire Protection Engineer
WAYNE AIRGOOD, P.E.	Structural Engineer
JOHN GOLDCAMP, R.C.D.D.	Telecom Designer
TIMOTHY ZINN	Architectural Historian

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.

TEAM ORGANIZATION



See Resumes for more details on team members in **Appendix 1**.

PROJECT APPROACH

Project and Goals

GOAL/OBJECTIVE 1: Collaborative Design

Michael Baker provides a variety of services with extensive experience in many fields of expertise. This allows the core team members access to expertise in all areas of study. Our Architects and Engineers will be involved in all aspects of the existing condition assessment and project design. Depending on the task this may include: Architecture, Civil, Structural, Mechanical, Electrical, Plumbing, Telecomm and Fire Protection Engineering. In addition, Michael Baker will provide an architectural historian to review the historic building conditions and will help in the design of up-grades to the existing facility.

Administration Building

As-needed Client design coordination meetings and/or site visits will be conducted as a normal part of the design development process. This will help to ensure that WVSDB, the Department of Education and the WV Department of Administration Purchasing Division (Purchasing Division) are receiving exactly the documentation for facility upgrades that are needed for procurement while providing for a quality project experience.

We are very familiar with the requirements of the agencies involved and have recently submitted and completed projects on behalf of the WVSDB.

GOAL/OBJECTIVE 2: Initial Consultation

The approach of the entire project will be holistic in nature. Michael Baker will conduct an initial kick-off meeting to help us understand the WVSDB project requirements for each task assigned. Michael Baker understands that the School has regular school sessions and summer activities, plus year-round staff (administrators, custodians, and maintenance) in most buildings. So early planning will include the current and upcoming school calendar and any additional scheduled use of the pertinent facilities. The first step will be to prioritize work and develop time schedules for the project tasks. This process will include identification of existing conditions through information obtained by a review of the facilities as-built drawings and site investigations. Michael Baker will plan for site visits during the first weeks of the project and begin developing the concepts required to provide the designs for the most cost-effective systems to achieve the project requirements while minimizing disruption to the operations.

GOAL/OBJECTIVE 3: Project Tasks

1. **School for the Deaf - HVAC, Electrical, and window replacement**

Michael Baker understands that the building was constructed in 1962. The existing windows are single pane glass with aluminum frames. The Auditorium has a heat pump, air handler and duct system but no outside air intake. A portion of the office area has a heat pump, air handler and a duct system, but no outside air intake. Approximately four classrooms have through wall PTAC units that were recently installed as a temporary measure. The remaining classrooms are heated with baseboard heat and air conditioned with portable AC units that vent through window openings. The original classroom air conditioning units are floor mounted with refrigerant lines running to outdoor

condensing units. All these units have failed and are not repairable. HVAC controls for the School will be integrated into the recently installed campus Automated Logic control system.
Michael Baker understands challenges associated with these types of projects, limited space above ceiling, a short time frame for construction and the potential for concealed conditions. The project scope will be developed using the WV Department of Education Office of School Facilities' assessment and recommendations and the WVSDB project objectives. The initial building assessment, space utilization type, code review and preliminary load calculation will help determine the most efficient and cost-effective approach for a few schematic designs to be offered to WVSDB.

2. **Central Supply building structural assessment**
Michael Baker understands that this building was constructed in approximately 1945 and that the structure is deteriorating.
A complete building assessment will be conducted to determine if the building can be effectively renovated or would need to be razed. This recommendation would be provided to WVSDB to determine the path forward.

3. **Seaton Hall Boys Dorm renovation into administrative offices**
Michael Baker understands that this building was constructed in 1954. The renovation will involve approximately 13,440 SF total: two floors at 6,720 SF each. Existing conditions in these spaces will be assessed and will then be renovated as required to meet the new administrative office requirements. All related systems in the space will be evaluated, repurposed, or replaced as the assessment indicates. An upgrade of the existing elevator controller will be included in the renovation design.
Code will require extensive asbestos inspection and testing for the affected space. Known asbestos locations include floor tile/adhesive and adhesive that holds 9X9 fiber ceiling tiles in place. Michael Baker has in-house environmental and asbestos experts and can provide specifications and guidance to the WVSDB for this testing and abatement if desired.

4. **School for the Deaf building elevator upgrade**
Michael Baker understands that this building was constructed in 1971 and that two elevators need upgraded, one passenger and one freight. The existing elevator shafts do not go through the roof. The existing passenger elevator is small and may require enlargement to meet codes.
Michael Baker has worked with many Elevator and other specialty vendors on numerous projects and it is a normal part of our business. An Elevator Consultant will provide the team with a survey of equipment to determine condition, quality of maintenance, remaining life expectancy and code/ADA requirements. This will determine the level of elevator design and related equipment specifications for the upgrade.
A "client-oriented" performance-based Maintenance Contract document can be prepared for WVSDB if desired.

5. **Keller Hall roof replacement**
Michael Baker understands that this building was constructed in 1972 and the existing EPDM roof is deteriorated and damaged and needs replacement.
Roofing projects are often included as a part of building renovations and are a normal part of Michael Baker designs and specifications. Any existing abandoned equipment supports, or other components will be removed or modified as required for the best roofing system outcomes.

6. **IRC building parking lot**
The existing gravel parking lot is to be completed with asphalt paving, ADA sidewalks, storm drainage and lighting systems.
Michael Baker has extensive experience with parking lot, street scape, sidewalk, storm drainage, and site lighting projects and can provide whatever is required for the specific application.

7. **Blue and Gold building renovation**

Michael Baker understands that this building was constructed in the 1870s and was renovated in 1962. The building is not on the National or Local Historic Registry, but recent (2019) exterior masonry repairs and new roof installation were approved by WV SHPO and SHPO is aware that WVSDB is planning interior renovations. The building is to be renovated into a Student Activity Center. It will require new HVAC systems and Fire Alarm and Sprinkler systems.
The building is one floor approximately 5,500 SF; 40' X 136' with a 14' X 72' basement equipment room under one side, the remaining floor area has a crawl space under it.
Michael Baker will assess the building from a historic and current code perspective and determine the best course of action to meet the Owner's Project Requirement. Michael Baker has recent experience at the School with upgrading HVAC, Fire Alarm and Sprinkler systems and can provide any level of expertise needed to complete the project in the most historically sensitive manner.

8. **Updating all campus building floor plans and related work**

The are 14 buildings total however six buildings (Hines Hollow House, Boiler House, High Tunnel, Fish Building, Greenhouse and Transportation Building) will not be included. There are existing un-dimensioned floor plans for each building but are not all accurate. Each will require updating to correct inaccuracies and provide information as detailed in the EOI.
Michael Baker has extensive experience turning sketches, old or vague plans and any other available documents into accurate and usable electronic format drawings for use by the WVSDB.

9. **Keller Hall Dormitory Emergency Generator**

Michael Baker understands that this building was constructed in 1972 and is a three-story masonry/brick building with approximately 38,766 SF. The building houses a commercial kitchen, an activities room, mechanical room, offices, and dorm rooms. This task is to upgrade the existing 1200-amp switch gear to meet current codes and design an appropriately sized emergency generator to support essential building services.
Emergency and Convenance Electric Generators and automatic switch gear are often included as a part of new building or renovations projects and are a normal part of Michael Baker designs and specifications.

GOAL/OBJECTIVE 4: The Design Process

Michael Baker will provide the necessary design and bidding documents for all aspects of each task design in accordance with the WVSDB Requirements and Guidelines. Specifications for the installation of all required products or components will be provided in CSI format as part of the bid package.

Based on the gathered information, Michael Baker will develop schematic design concepts for review and approval by WVSDB. A general code review will also be undertaken to determine the Federal/State/Local Codes that affect concept selection. The projects will be studied in a systematic way to analyze the existing conditions, WVSDB needs, affected system demands, budget and construction time frame. Only then will the appropriate solutions be determined to meet all those requirements. Analyzing multiple solutions will provide the WVSDB the ability to choose the most cost-effective approach for the project.

Milestone review submissions (35%, 65%, 95% and 100%) will be made to the WVSDB as determined in the project schedule developed at the beginning of the project. When required, a project phasing plan may be provided with the construction documents. 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 as needed. Construction Cost Estimates will be updated upon the

completion of each of the review submissions and at the 100% Construction Documents plans and specifications. Michael Baker will provide the final sealed drawings and specifications for the entire project whether multiple packages are separate or provided as one.

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

Michael Baker provides an Internal Technical Review (ITR) as part of our normal design submission process. ITRs are conducted on every project prior to submittal and are part of "The Michael Baker Way" of Project Management. The ITR is performed by professionals that are not part of the design team but are experts in the respective fields in which they perform the review. This ensures a nonbiased and critical review of the project documents. This process helps to minimize small errors and omissions which yields a smother bidding process.

GOAL/OBJECTIVE 5: Bidding Phase

Michael Baker will provide Bidding support and assistance as needed for each independent project task. Bidding support services may include; attendance at the Pre-Bid Conference, development of responses to technical questions during the bidding process which will be forwarded to the Purchasing Division for inclusion in forthcoming addenda, attendance at the Bid Opening, and an independent review of bids received. Michael Baker has recently provided these types of services to the WVSDB on current projects.

GOAL/OBJECTIVE 6: Construction Administration

Construction Management/Construction Inspection (CM/CI) are part of Michael Baker's holistic project services. The team members responsible for the project design will be the same professionals providing the regular site visits and inspections during construction. Should Resident Inspection be required, Michael Baker can provide full-time competent construction inspection personnel experienced in the given type of installation. All products intended to be installed on the project shall be submitted to and approved by Michael Baker. The shop drawings provided by the awarded contractor will be reviewed by Michael Baker to ensure that they meet all code requirements, specification criteria and are appropriate for the project. Product approvals will be based on meeting those requirements.

After the system installations are complete, Michael Baker will perform a Substantial Completion Inspection and develop a corrective measure Punch List. Once corrective measures have been addressed, a Final Inspection will be conducted with all parties present. Regulatory agency coordination is required at this point to ensure prompt award of the Certificates of Occupancy for the facility as required.

GENERAL INFORMATION

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. Our West Virginia office brings 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 local staff, as many of our team members are residents of WV and desire to see our State and its educational facilities develop and grow.

WVU-Tech Benedum Building

VALUE ENGINEERING

Michael Baker is very familiar with the value engineering process and can work productively with a selected contractor to provide the WVSDB with cost saving alternatives if the bids come in over budget. Additive or Deductive Alternates can also be used to control project cost. Also, to control cost, as stated in the Michael Baker Way, auxiliary 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. These considerations, along with open discussion with WVSDB staff, will determine whether we move forward with the current design or make engineered 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 PROJECTS OF A SIMILAR SIZE AND SCOPE

Project Profiles are included in Appendix 2. They were selected as a representative group with similar budgets and with related project components.

Additional **References are provided in Appendix 3.**

APPENDIX 1 – Resumes

Michael Baker
INTERNATIONAL

We Make a Difference

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

Civil Engineer , Facilities Practice Manager

Years with Michael Baker: 13
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

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

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 lead a planning study for the renovation of 31 restrooms in the historic West Virginia Capitol Building. The planning study assessed the facility's plumbing infrastructure and the restroom 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 then provided design, construction documents, and scheduling recommendations for the phased Construction of 11 Restrooms for the House of Delegates wing. Baker also provided construction administration services for this 2020 construction project.

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.

Michael Baker
INTERNATIONAL

We Make a Difference

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/fixed 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.

West Virginia Army National Guard - TAG Wing Improvement, Charleston, West Virginia. *State Army National Guard Headquarters.* Project Manager. Engineer of Record responsible for the coordination of all activities. 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 new acoustical ceilings, flooring, energy-saving light fixtures, duplex outlets, communications jacks, several new wall partitions, exterior door replacements, 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.

Michael Baker
INTERNATIONAL

We Make a Difference

R. Joseph Chaffin, R.A., A.I.A.

Lead Design Architect

Years with Baker: 12

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

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 oversite 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.

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.

Michael Baker
INTERNATIONAL

We Make a Difference

David J. Hilliard, P.E., LEED AP BD+C

Mechanical Engineer

Years with Michael Baker: 12
Years with Other Firms: 19

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 - Mechanical, West Virginia, 2011, [redacted]

Professional Engineer - Mechanical, Kentucky, 2017, [redacted]

LEED Accredited Professional BD+C, West Virginia, 2012, [redacted]

Electrical System Design, 35 hour course University of Wisconsin, Madison Wisconin.

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 become a senior mechanical engineer for Michael Baker. His recent design experience has included 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 a design for a comprehensive restroom renovations at the historic State Capitol Building. His resume covers over 30 years of real world work in engineering, design, fabrication and construction, and covers the mechanical, electrical, plumbing 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 ASHRAE, ASME, ASPE, USGBC, and other pertinent organizations.

Mr. Hilliard is proficient with the following design programs: AutoCAD, Revit, Trane Trace 700 (HVAC load program), Cook Compute-a-Fan (equipment selection program), Greenheck CAPS (equipment selection program), Price, All-in-One (equipment selection program), Excel Spreadsheets, Bluebeam Revu (pdf editor), and Adobe Photoshop

Sample PROJECT Experience

West Virginia Schools for the Deaf & Blind, Various Building Renovation Projects, Romney WV. Project Engineer and Engineer of Record. Responsible for project team coordination and management, mechanical engineering and electrical design in the renovation of various buildings on the WVSDB campus, work included: HVAC, life safety, electrical, fire alarm, and fire sprinkler projects. One project includes HVAC renovations in one building and the installation of a campus wide Life Safety System for the deaf and blind. A second project includes new sprinkles in one building and sprinkler modifacations in two other building. A third project includes complete HVAC renovation of the schools Physical Education Building, which includes a swimming pool, Gym, weight rooms, locker rooms. These projecs are ongoing and include Construction Administration services which Mr. Hilliard oversees.

Capitol Flood Study. *State of WV General Services Division.* Project Engineer. Responsible for providing site evaluation, video of underground sanitary piping systems, research of rainfall events, corrective measure recommendations, and developed a report of the findings.

Michael Baker
INTERNATIONAL

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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. The Baker team then provided design, construction documents, and scheduling recommendations for the phased Construction of 11 Restrooms for the House of Delegates wing. Baker also provided construction administration services for this 2020 construction project.

Renovations of two existing buildings at the WVUTech Campus. *West Virginia University.* Mechanical Engineer. Provided project management, mechanical, electrical, and plumbing engineering for the renovation of a 31,000 SF building for engineering labs and a 21,000 SF building for offices and student government.

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.* Mechanical Designer. Responsible for all mechanical design oversight and construction management. The Facilities Management Officer (FMO) for the State of West Virginia, Division of Engineering and Facilities (DEF), West Virginia Army National Guard (WVARNG) selected Michael Baker for a lump sum/fixed fee contract for architectural and engineering services. Michael 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.

Renovations to Building 2, Bay 4, Tobyhanna, Pennsylvania. *Tobyhanna Army Depot.* HVAC Engineer. Designed HVAC systems for general offices, latrines, a large work room with humidification and a computer/office areas. Also detachable AC systems were designed for a number of removable Mobile Computer Control Shelters. Michael Baker served as the designer of record on a design-bid-build project to renovate Building 5, Bay 1 at the Tobyhanna Army Depot. Work was performed under a three-year indefinite delivery-indefinite quantity contract. The scope of work involves adding HVAC capacity, installing a drop-ceiling system, expanding existing restrooms, and enhancing door systems. Michael Baker prepared design and construction plans and construction cost estimates.

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.

Fort McCoy, Fort McCoy, Wisconsin. *Army Corp of Engineers, Omaha District.* Mechanical Engineer. Responsible for the Mechanical engineering and final inspection and commissioning oversite. **The Project was a** Design-build delivery of an approximately 58,000-square-foot, two-story modified large Tactical Equipment Maintenance Facility (TEMF) and an approximately 44,000-square-foot, one-story Equipment Concentration Site (ECS) Warehouse, The building was designed to meet a LEED Silver certification

Michael Baker
INTERNATIONAL

We Make a Difference

Jesse Rangel, AIA, NCARB

Project Architect

Years with Michael Baker: 1
Years with Other Firms: 12

Degrees

M.Arch., 2009, Architecture, Morgan State University

B.S., 2007, Architecture, Morgan State University

Licenses/Certifications

Registered Architect, Maryland, [redacted]

General Qualifications

Mr. Rangel is a capable, licensed architect with more than a decade of comprehensive, professional expertise in the successful management and design of public and private projects. His strengths lie in good interpersonal skills, development, oversight and management of budgets and schedules. He possesses skills and technical capabilities necessary to interact positively with customers, subconsultants, staff, and coworkers to guide projects from inception through construction.

Experience

City Schools Facility Conditions Assessment (Jacobs Report), Baltimore, Maryland. Architectural Designer III. Responsible for the assessment of 50 schools as part of the school system's ongoing maintenance and improvement program. Proposed $2.45 Billion Budget in Funding Over a 10-year Period

Fort Worthington Elementary School, Graceland, and Holabird Elementary/Middle Schools, Baltimore, Maryland. Project Manager. Assisted in providing landscape architecture and interior design services for three new schools.

Comprehensive Design Services Contract IX, Baltimore/Washington International Thurgood Marshall (BWI) & Martin State (MTN) Airports. *Maryland Aviation Administration.* Project Architect. Currently serving as Michael Baker's architect and task manager for architectural tasks. The task orders include construction phase services for current on-going projects, repairs and improvements to existing terminals and hangars, consultant management, project management, and general task orders.

On-Call Aviation Services, Tipton Airport (FME). *Tipton Airport Authority.* Project Architect. Currently serving as Michael Baker's architect and task manager for architectural tasks. The task orders include construction phase services for current on-going projects, repairs and improvements to existing hangars, consultant management, project management, and general task orders.

Dover Maintenance Hangar Construction Phase Services. *Dover Airfield Base.* Project Architect. Provide on-going construction administration engineering services as follow-on to the design work recently completed. Provide engineering support and assist with coordination of requested aspects of Engineering During Construction, including but not be limited to; Contractor Submittal Package reviews; Engineering Considerations and Instructions for Field Personnel; Request for Information (RFI) reviews/responses; Site Visits, Engineering Revisions and Value Engineering Change Proposal reviews, during the construction phases and as requested by the USACE Project Engineer.

Bladensburg Bus Maintenance Facility. *Washington Metropolitan Area Transit Authority.* Project Architect. Assisted with design services up to a 60% level for a new Bus Operations and Maintenance facility sized for a fleet of 300 transit vehicles at the Bladensburg Bus Operating Garage. The proposed Bus Operations and Maintenance

facility is planned to operate 24 hours a day, 7 days a week and designed to include; Bus Maintenance, Body Repair, Paint, Bus Operations, Bus Fuel and Wash, Bus Parking, Employee and Visitor Parking in a parking deck.

Tipton Hangar 80 84 85 Improvements. *Tipton Airport Authority.* Project Architect. Developed a procurement strategy and to identify the scope of professional design services and related fees that would be necessary to meet FAA procurement requirements. Provided architectural and engineering services for design, bidding, and construction administration services for various improvements to three existing corporate hangars.

Chesterfield CCR Wastewater Treatment Plant. *Dominion Energy.* Project Architect. Via Design-Build, provided architectural services for the design of two new buildings for Dominion Energy at the Chesterfield Water Treatment Complex. The two buildings were identified as the Administration Building and the Process Building.

Non-Michael Baker Project Experience

Piscataway WRRF Bio-Energy Project, Accokeek, Maryland. Project Manager / Architectural Design-Lead. Responsible for all architectural tasks which include early work packages, code analysis, life safety, design, coordination with construction estimating and design teams. $250 Million Construction Budget.

Back River Wastewater Treatment Plant: Headworks Improvement and Wet Weather Flow Equalization, Baltimore, Maryland. Project Manager / Primary Architectural Reviewer. Responsible for complete review of all architectural related construction management tasks. $430 Million Construction Budget.

Johns Hopkins Hospital: North Power Plant and Bayview Campus Power Plant, Baltimore, Maryland. Project Manager. Provided professional services for the complete replacement of an existing chiller system. The project was phased and required close coordination with the owner, operations, and facilities to keep the plant operational during construction.

Freedom Readiness Center, Sykesville, Maryland. Project Manager / Co-Architect. Assisted in creating a functional, aesthetically pleasing, and budget conscious interior design. Involved from concept to construction documents and construction administration. $24.5 Million Construction Budget.

Druid Finished Water Tanks, Baltimore, Maryland. Project Manager. Assisted a senior project architect / landscape architect with design through construction documents of the site to accommodate a new secure 54-million-gallon finished water tanks and pumping / hypo-chlorination facility. $140 Million Construction Budget

Replacement of Loch Raven Dam Environmental Operation Facility, Baltimore, Maryland. Project Manager. Evaluation of two sites within the watershed property for a new environmental operations facility. The study led to full architectural design services. $10 Million Construction Budget.

Consolidated Rental Center Facility Conditions Assessment, Baltimore Washington Thurgood Marshall Airport, Maryland. Project Manager. Performed a facility assessment to determine maintenance and capital needs. The report provided a thirty-year outlook for each facility. Additionally, a year-by-year analysis for the first five years were provided for each individual building.

State Emergency Operations Center at Maryland Emergency Management Agency, Reisterstown, Maryland. Architectural Designer III. Responsible for the renovation of the State Emergency Operations Center used to manage emergency situations for the State of Maryland.

Michael Baker
INTERNATIONAL

We Make a Difference

Wayne Airgood, P.E.

Structural Engineer

Years with Michael Baker: 10
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]

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.

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.

Michael Baker
INTERNATIONAL

We Make a Difference

Owen Milligan, P.E.

Electrical Engineering Manager

Years with Michael Baker: 8
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, West Virginia, 2013

Professional Engineer, Pennsylvania, 1999

Professional Engineer, Kentucky, 2005

Professional Engineer, Oklahoma, 2008

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

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

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.

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.

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.

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.

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.

Michael Baker
INTERNATIONAL

We Make a Difference

John M. Goldcamp, R.C.D.D.

Telecommunications Distribution Designer

Years with Michael Baker: 3
Years with Other Firms: 30

Degrees

B.S., 2010, Business, Point Park University

Licenses/Certifications

Registered Communications Distribution Designer, Pennsylvania, 1998, [redacted]

Outside Plant Designer (OSP), Pennsylvania, 2000, [redacted]

General Qualifications

Mr. Goldcamp brings many years of experience to Michael Baker. He is a Registered Communications Distribution Designer (RCDD) and an Outside Plant Designer (OSP). He is proficient in Microsoft Office, MS Project, AutoCAD, and Autodesk Revit.

Experience

West Virginia Schools for the Deaf & Blind, *Various Building Renovation Projects, Romney WV.* Telecomm Distribution Designer and Life Safety System Coordinator. Responsible Telecommunication planning and design, and coordination with the Life Safety System vendor in the renovation of various buildings on the WVSDB campus. The overall project work included: HVAC, life safety, electrical, fire alarm, and fire sprinkler projects. One main project included the installation of a campus wide Life Safety System campus.

411 7th Ave 14th floor Reno. *Duquesne Light Company.* Department Manager. Responsibilities included design of all telecom systems. This system included a re-design of all pathway infrastructure planning and programming. Also conducted drawing coordination with all architecture and engineering disciplines, developed official responses to contractors' questions, field inspections, and reviewed contract close-out documentation.

Repair Dorm Bldg 98 Thule AFB. *MT Hojgaard.* Department Manager. Responsibilities included design of all telecom systems. This system included a re-design of all pathway infrastructure planning and programming. Also conducted drawing coordination with all architecture and engineering disciplines, developed official responses to contractors' questions, field inspections, and reviewed contract close-out documentation.

5 year IDIQ for Design Services of Security & Surveillance Systems at Department Facilities. *Pennsylvania Department of Transportation, Central Office.* Department Manager. Responsibilities included design of all telecom systems. This system included a re-design of all pathway infrastructure planning and programming. Also conducted drawing coordination with all architecture and engineering disciplines, developed official responses to contractors' questions, field inspections, and reviewed contract close-out documentation.

Allegheny Health Network - Operating Room (OR) Storage Addition, Allegheny General Hospital, Pittsburgh, Pennsylvania. *Allegheny Health Network.* Department Manager. Responsibilities included design of all telecom systems. This system included a re-design of all pathway infrastructure planning and programming. Also conducted drawing coordination with all architecture and engineering disciplines, developed official responses to contractors' questions, field inspections, and reviewed contract close-out documentation. Michael Baker is providing Stage I programming and Stage II conceptual design services for a storage addition to the operating rooms at Allegheny General Hospital in Pittsburgh, Pennsylvania, for Allegheny Health Network. During Stage I programming design, Michael Baker held an on-site kick-off meeting to discuss the goals of the project and limitations of the space and conducted a walk-through of existing areas.

Architecture and Engineering Services for Facility Design, Statewide, Pennsylvania. *Pennsylvania Department of Transportation, Central Office.* Department Manager. Responsibilities included design of all telecom systems. This system included a re-design of all pathway infrastructure planning and programming. Also conducted drawing coordination with all architecture and engineering disciplines, developed official responses to contractors' questions, field inspections, and reviewed contract close-out documentation. Michael Baker is providing architectural and engineering services under an open-end agreement for services on various statewide facility projects. Michael Baker is providing design services for building construction, including new construction and renovations to district and county maintenance offices and buildings, salt storage buildings, personnel staging buildings, warehouse buildings, stockpiles, and other facilities.

Allegheny Valley Hospital (AVH) Relocate Administrative Spaces, Natrona Heights, Pennsylvania. *Allegheny Health Network.* Technical Specialist. Acted as a technical resource role for the electrical engineer and was the direct supervisor for the electrical and telecom designs. Had direct input on the nurse call, overhead paging, voice, data and security system cabling infrastructure. Conducted independent internal review in a QAQC capacity for electrical and telecommunication designs. Michael Baker provided architecture, interior design, and engineering services for the design for the Allegheny Valley Hospital Relocate Administration and Space Consolidation Renovation. After completing Stage I and Stage II reports (programming and schematic design), Michael Baker provided construction documents for bidding, permitting, and Pennsylvania Department of Health approvals.

Dormitory Building Renovation, Joint Base McGuire-Dix-Lakehurst, New Jersey. *U.S. Army Corps of Engineers, Philadelphia District.* Technical Specialist. Responsibilities included design of low voltage infrastructure drawing coordination with all engineering disciplines, developed official responses to contractors' questions; developed construction specifications and construction drawings; field inspections, and review contract close-out documentation. Michael Baker provided architectural and engineering for this project, which involves renovating existing floor plans on all floors to provide private sleeping rooms with private baths and closet.

Indefinite Delivery Contract for Architect and General Engineering Services. *U.S. Army Corps of Engineers, Philadelphia District.* Technical Specialist. Responsibilities included design of low voltage infrastructure drawing coordination with all engineering disciplines, developed official responses to contractors' questions; developed construction specifications and construction drawings; field inspections, and review contract close-out documentation.

LRL17_Orangeburg_NY FFR. *U.S. Army Corps of Engineers, Louisville District.* Department Manager. Responsibilities included design of all telecom systems. This system included a re-design of all pathway infrastructure planning and programming. Also conducted drawing coordination with all architecture and engineering disciplines, developed official responses to contractors' questions, field inspections, and reviewed contract close-out documentation.

MEMA Phase II Planning Study. *Maryland Environmental Service.* Technical Specialist. Responsibilities included design of low voltage infrastructure drawing coordination with all engineering disciplines, developed official responses to contractors' questions; developed construction specifications and construction drawings; field inspections, and review contract close-out documentation.

Army Depot Family Housing. *U.S. Army Corps of Engineers, Philadelphia District.* Department Manager. Responsibilities included design of all telecom systems. This system included a re-design of all pathway infrastructure planning and programming. Also conducted drawing coordination with all architecture and engineering disciplines, developed official responses to contractors' questions, field inspections, and reviewed contract close-out documentation.

Michael Baker
INTERNATIONAL

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Michael C. Zellers, P.E.

Fire Protection Engineer

Years with Michael Baker: 6
Years with Other Firms: 0

Degrees

B.S.M.E., 2011, Mechanical Engineering, University of Pittsburgh

Licenses/Certifications

Professional Engineer, West Virginia, 2020, [redacted]

Professional Engineer, Pennsylvania, 2020, [redacted]

Firefighter Level 1 Certification, Pennsylvania, 2015[redacted]

General Qualifications

Mr. Zellers is a fire protection engineer with extensive experience designing fire protection systems for military and public facilities. He has developed shop drawing, designed sprinkler systems, fire alarm systems, and mass notification systems for facilities of various sizes and complexity. Mr. Zellers is also well-versed at reviewing life safety drawings to ensure compliance with various safety standards and regulatory codes, including NFPA, UFC, and IBC codes and standards.

Experience

West Virginia School for the Deaf and Blind.

School for the Deaf. Fire Protection Engineer. Responsible for existing fire alarm system upgrades and interface with new campus wide Life Safety System.

Instructional Resources Center. Fire Protection Engineer. Responsible for the design of a new wet pipe sprinkler system for an approximate 10,000 SF existing facility utilizing an existing 6" sprinkler line entrance pipe. The design included Hazard Classifications, riser details, hydraulic calculations, and basic pipe routing.

Seaton Hall Dormitory and Elementary School for the Deaf. Fire Protection Engineer. Responsible for the design of existing wet pipe sprinkler system modifications as determined by a building assessment and code review. Modifications included sprinkler layout adjustments, determining additional required sprinkler heads, installation of backflow preventers, and a new dry pipe sprinkler system for a newly installed modular freezer.

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. A modern building-wide fire suppression sprinkler system, complete with a new larger water supply service line, was engineered. Both the Classroom Building and the Benedum building included upgrades to the Fire Alarm system.

Architectural and Engineering Services for U.S. Army Reserve and Military Construction Projects, Various Locations. *U.S. Army Corps of Engineers, Louisville District.* Fire Protection Engineer. Responsible for fire protection design including sprinklers, fire alarm and mass notification systems to meet the requirements of the RFP, UFC and NFPA codes. Under a third consecutive indefinite delivery-indefinite quantity contract, Michael Baker is providing architectural design and engineering services for a variety of mission-critical projects that serve the U.S. Army Reserve's expanding needs for personnel training and equipment maintenance and support the activation of additional brigade combat teams. Infrastructure projects include equipment concentration site warehouses; tactical equipment maintenance facilities; and central-issue, container-loading, billeting, and dining facilities.

FY18 Annual Training-Mobilization (AT-MOB) Dining Facility (DFAC), For McCoy, Wisconsin. *U.S. Army Corps of Engineers, Louisville District.* Fire Protection Engineer. Responsible for fire protection design including sprinklers, fire alarm and mass notification systems to meet the requirements of the RFP, UFC and NFPA codes. 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. Reviewed life safety, fire alarm, and sprinkler drawings for the fire protection engineer of record to ensure compliance with applicable NFPA, UFC, and IBC codes and standards. Michael Baker was the designer of record for the design-bid-build delivery of a 21,290-square-foot, one-story Annual Training-Mobilization Dining Facility. The new facility accommodates 1,428 personnel per meal, in 30-minute shifts of 476 personnel, for three meals per day. Michael Baker provided architecture, surveys, geotechnical and geophysical investigation, all site and building engineering, and cost estimating. Because charrette participation was critically important to project development, Michael Baker facilitated a design charrette and collaborated with the client to identify needs and preferences and preferred alternatives to the standard design. This was the third facility that Michael Baker designed at Fort McCoy.

Attleboro Army Reserve Center, Taunton, Massachusetts. *U.S. Army Corps of Engineers, Louisville District.* Fire Protection Engineer. Responsible for fire protection design including sprinklers, fire alarm and mass notification systems to meet the requirements of the RFP, UFC and NFPA codes. Performed life safety analysis for complete compliance with NFPA 101 and IBC. This includes classifying occupancies, occupant load calculations, egress analysis and rated separations. Michael Baker provided architectural and engineering services for the design and preparation of bid documents for the construction of a 300-member U.S. Army Reserve Center. The project was performed under an indefinite delivery-indefinite quantity contract and developed to achieve LEED Silver certification. As designer of record, Michael Baker's comprehensive services included site and civil engineering; building architecture and facility engineering, including structural, mechanical, plumbing, fire protection, and electrical and telecommunications systems design; and LEED certification administration.

Systems Integration Maintenance Office, Fort Campbell, Kentucky. *U.S. Army Corps of Engineers, Louisville District.* Fire Protection Engineering Tech. Responsible for fire protection design including sprinklers, fire alarm and mass notification systems to meet the requirements of the RFP, UFC and NFPA codes. 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. Reviewed fire sprinkler shop drawings and product data sheets for all applicable UFC and NFPA codes and standards. Michael Baker was the designer of record for a 48,400-square-foot Systems Integration Maintenance Office (SIMO) facility. The facility includes administrative space (private offices and open office space); classrooms; conference rooms; laboratory spaces; storage spaces; metal fabrication shop; computer labs; flight lockers; showers and restrooms; mechanical, electrical and communication rooms; intrusion detection; surveillance; and electronic access control. Spaces support SIMO flight operations, mission planning, and pilot flight planning. This project complied with UFC 4-010-01 DoD Anti-Terrorism Force Protection requirements and per unified facilities criteria and Mission Planning spaces complied with ICS 705-1, 705- 2, and TER room were designed to comply with AR 380-5 requirements. Site design included parking, stormwater management/bio-retention, landscaping and site utilities. The project is designed to achieve a LEED Silver Certification.

Total Army School System (TASS) Training Center, Fort Lee, Virginia. *U.S. Army Corps of Engineers, Louisville District.* Fire Protection Engineering Tech. Responsible for fire protection design of sprinkler system to meet the requirements of the RFP, UFC and NFPA codes. 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. Reviewed fire sprinkler shop drawings for all applicable UFC and NFPA codes and standards. Michael Baker provided engineering and design services for the TASS training facility to serve a weekly average training population of 150 students with a full-time staff of approximately 60 personnel. The purpose of the design-build project is to provide an effective and efficient facility to implement Army Reserve support and training missions. The facility includes an instructional kitchen, unit storage, and an organizational maintenance shop.

Michael Baker
INTERNATIONAL

We Make a Difference

Timothy G. Zinn

Architectural Historian

Years with Michael Baker: 27
Years with Other Firms: 7

Degrees

M.A., 1996, Historic Preservation, Middle Tennessee State University

B.S., 1986, Accounting/Computer Science, Salem College

Licenses/Certifications

Architectural Historian (36 CFR61) Qualified

2.7.1 Sec. 4 (F)/6 (F) Evaluations, 2005

2.8.1 Surveys, Research, and Documentation of Historic Buildings, Structures, and Objects, 2005

2.11.1 Historical and Archival Research, 2005

Historian (36 CFR61) Qualified, 1996

Section 106/National Register Eligibility, 1996

General Qualifications

Mr. Zinn is the Historic Preservation Department Manager for the Pittsburgh office. He serves as both principal investigator and project/task manager for cultural resources investigations across the country in compliance with Section 106 of the National Historic Preservation Act, NEPA, and other state and federal laws governing cultural resources. He is skilled in the preparation of National Register of Historic Places (NRHP) nominations, historic resources surveys, state inventory forms, NRHP eligibility determinations, criteria of effect/adverse effect evaluations, MOAs/MOUs, programmatic agreements, public involvement coordination, archival records research, deed research, and Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) documentation. Mr. Zinn is also an Instructor at the University of Pittsburgh, Department of Anthropology where he teaches a course on Cultural Resources Law and Practice.

Experience

West Virginia State Capitol Building, East Restroom Renovations, Charleston, West Virginia, *West Virginia General Services Division.* Architectural Historian. Consulted with the West Virginia State Historic Preservation Office to ensure that the designs of the proposed renovation met the Secretary of the Interior's Standards and Guidelines for the Rehabilitation of Historic Buildings. The scope of work consisted of renovating eleven restrooms in the East Wing of State Capitol Building. A goal of the project was to salvage as much of the historic Vitrolite wall panels as possible for reinstallation and the selection of new ceramic or glass wall panels to match the historic fabric as closely as possible.

Renovations to Buildings in the Rifle Range Historic District, Marine Corps Base Camp Lejeune, North Carolina, ***United States Marine Corps.*** Cultural Resources Task Manager/Architectural History Lead. Michael Baker is under contract with the APTIM to repair damage resulting from Hurricane Florence to seven buildings in the NRHP-eligible Rifle Range Historic District. Michael Baker's SOI-qualified Architectural Historians are assisting the design team to ensure that all proposed work complies with the guidelines for the Stone Bay Rifle Range Historic District contained in the *Guidelines for Historic Buildings Management, Marine Corps Base, Camp Lejeune, Base Exterior Architectural Plan,* and the *Integrated Cultural Resources Management Plan.* Architectural historians coordinate directly with the Cultural Resources Management Section of the Environmental Conservation Branch on internal reviews and, if necessary, to initiate consultation with the State Historic Preservation Office in compliance with Section 106 of the National Historic Preservation Act.

General Aviation Terminal Building Design and Construction Administration, Joseph A. Hardy Connellsville Airport (VVS), Lemont Furnace, Pennsylvania. *Fayette County Airport Authority.* Architectural Historian. Responsible for Determination of Eligibility Report, Criteria of Effect Report, and Section 4(f) Evaluation for a World-War II-era, 120-foot temporary hangar. Michael Baker provided architecture and construction administration services under a task order engineering agreement for the construction of a new general aviation terminal building. The new 6,000-square-foot terminal includes a 24,200-square-foot, 1940s-era Taylorcraft hangar that has been converted to a covered, open-air parking and exhibition space. Conversion of the hangar involved selective demolition of the exterior walls, surface rehabilitation, and replacement of the floor slabs and roofing.

Historic Resource Evaluation of Civic Arena, Pittsburgh, Pennsylvania. *Chronicle Consulting LLC.* Project Manager. Responsible for compliance with the Pennsylvania State History Code regarding the redevelopment of Civic Arena in the City of Pittsburgh. Duties included initiation of consultation with the Pennsylvania Historical and Museum Commission, the identification of and coordination with interested parties, participation in the alternatives analysis process, the preparation of a Determination of Effect report, and the development and execution of a Memorandum of Agreement. Part of the mitigation for the resolution of adverse effects on historic properties included the recordation of the building to Historic American Buildings Survey standards.

Fourth Street Bridge Historic American Engineering Record (HAER), Historic American Building Survey (HABS), Section 106 (NHPA), National Environmental Policy Act, and Section 4(f) Documentation , City of Fairmont, Marion County, *West Virginia, West Virginia Department of Transportation.* Task Manager/Architectural History Lead. Prepared HABS-level and West Virginia Historic Property Inventory (WVHPI) forms project mitigation documents for historic properties within the NRHP-listed Fleming-Watson Historic District that were directly affected by the project. The NRHP-eligible Fourth Street Bridge, was recorded using HAER standards and was also recorded on a WVHPI form. The bridge was significant under NRHP Criterion C for its engineering technology as an early (1911-12) example of a rigid frame, reinforced concrete cantilevered bridge and for its association with Layton F. Smith, a noted designer of reinforced concrete structures in the first quarter of the twentieth century.

N-E00669, Elizabethtown Train Station Renovation Categorical Exclusion Evaluation and Environmental Site Assessment, Elizabethtown, Pennsylvania. *Pennsylvania Department of Transportation, Central Office.* Architectural Historian. Michael Baker provided environmental management services for the rehabilitation of the Elizabethtown Train Station. Michael Baker's services included a categorical exclusion evaluation and a Phase I and II environmental site assessments, a field investigation, preparation of the associated reports, and agency coordination, including compliance with Section 106 of the National Historic Preservation Act.

Family Housing Areas Engineering Services, Fort Myer, Virginia. *Klavon Design Assoc., Inc.* Michael Baker provided engineering services to support Headquarters Installation Management Command's Army Family Housing Strategic Master Plan. Services included providing on-site evaluation of housing units, developing three courses of action for the housing areas, participating in a planning charrette workshop, and coordination with the base cultural resources officer to ensure that any proposed renovations comply with the SOI Standards.

Amtrak ABLE Central ADA Stations Program and State of Good Repair, Nationwide. *Amtrak.* Michael Baker is providing architectural and engineering design services at four stations -- Williston, North Dakota (WTN), Devils Lake, North Dakota (DVL), Rugby, North Dakota (RUG), and Tomah, Wisconsin (TOH) -- as part of the Amtrak Central Project, which includes Americans with Disabilities Act (ADA) and State of Good Repair (SOGR) station and platform improvements. Services include schematic design; construction documentation and administration for architectural, structural, civil, stormwater, mechanical, and electrical engineering; and cost estimating, bid review, construction administration, renderings, and presentations.

Michael Baker
INTERNATIONAL

We Make a Difference

Ralph T. Deffenbaugh, P.E., LEED AP

Quality Assurance / Quality Control

Years with Michael Baker: 11
Years with Other Firms: 26

Degrees

B.A.E., 1980, Architectural Engineering (Structural Design Option), The Pennsylvania State University

Licenses/Certifications

LEED Accredited Professional, 2007, 1706

Professional Engineer, West Virginia, 2004, [redacted]

Professional Engineer, Kentucky, 2004, [redacted]

Professional Engineer, Louisiana, 2009, [redacted]

Professional Engineer, Massachusetts, 1992, [redacted]

Professional Engineer, Maryland, 1996, [redacted]

Professional Engineer, Michigan, 2012, [redacted]

Professional Engineer, Ohio, 2004, [redacted]

Professional Engineer, Pennsylvania, 1991, [redacted]

Professional Engineer, Virginia, 1991, [redacted]

General Qualifications

Mr. Deffenbaugh provides leadership for project quality and interdisciplinary coordination for the architecture engineering group. In his wide-ranging experience, he has provided oversight of the engineering efforts focusing on integration of systems, development of energy reduction strategies, and detailed quality assurance reviews of various types of facilities for military, government, commercial, public, and private clients. His experience includes serving as project manager, lead structural engineer, resident structural engineer, or project/design engineer for various types of facilities, including tactical equipment maintenance facilities, vehicle maintenance facilities, barracks, military facilities, administrative/office buildings, bus maintenance facilities, manufacturing plants, fabrication facilities, utility buildings, clean rooms, administrative facilities, transit stations and park-n-rides, water storage, and water/wastewater treatment facilities. In 2007, Mr. Deffenbaugh received his LEED® accreditation from the U.S. Green Building Council.

Experience

Campus Master Planning and Architectural and Engineering Services for State Capitol Complex, Charleston, West Virginia. *State of WV General Services Division.* QA/QC. Responsibilities included quality assurance reviews for civil, structural, architectural, mechanical, and electrical drawings and specifications. Facilitated QC review process utilizing discipline review checklists, RFP scope checklists, and coordination of drawings. Michael Baker is providing comprehensive master planning services, plans and construction specifications, and construction administration for improvements to the historic West Virginia state capitol campus. Master planning services include plans for expansion, location of new buildings, pedestrian and traffic circulation, landscaping, utilities, and site security. Michael Baker is also providing construction plans and contract administration services for some of the security and landscaping improvements.

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.* QA/QC. Responsibilities included coordinating the quality assurance reviews for architectural, mechanical, and electrical drawings. Facilitated QC review process utilizing discipline review checklists, RFP scope checklists, and coordination of drawings. The Facilities Management Officer (FMO) for the State of West Virginia, Division of Engineering and Facilities (DEF), West Virginia Army National Guard (WVARNG) selected Michael Baker for a lump

sum/fixed fee contract for architectural and engineering services. Michael 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.

Little Kanawha Bus Facility, Calhoun County, West Virginia. *West Virginia Division Of Public Transit.* QA/QC. Responsibilities included quality assurance reviews for civil, structural, architectural, mechanical, and electrical drawings and specifications. Facilitated QC review process utilizing discipline review checklists, RFP scope checklists, and coordination of drawings. Michael 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.

Design-Build Community-Based Outpatient Clinic, Lake Charles, Louisiana. *SDA, Inc.* QA/QC. Provided detailed review of VA clinic including challenges in duct and heat pump installation with roof trusses. Michael Baker provided architecture and engineering services for a new 32,000-square-foot, design-build, community-based outpatient clinic for military veterans. Michael Baker's services included design management; conceptual, preliminary, and final architectural design; structural design; landscape design; interior design; mechanical, electrical, plumbing, and fire protection engineering; and construction administration and inspection.

Lancaster Station Renovations, Lancaster, Pennsylvania. *Amtrak.* QA/QC. Provided detailed QA review for the contract documents. Michael Baker provided architectural and engineering services for renovations to the historic Lancaster Station. Michael Baker's services included architectural and interior design, mechanical and plumbing design, historic preservation, and construction administration.

P-478 Navy Gateway Inn & Suites (NGIS), Naval Station Newport, Rhode Island. *NAVFAC MIDLANT NEIPT.* QA/QC. As design quality manager, established the quality plan for this project. Michael Baker is the designer of record for the new 200 key, 104,000-square-foot Navy Gateway Inns & Suites hotel. Michael Baker's services included architecture, interior design, civil engineering, landscape architecture, mechanical engineering, plumbing design, fire protection design, and sustainable design.

John F. Kennedy Center for the Performing Arts Pedestrian Access Design Review, Washington, D.C. *Federal Highway Administration - Eastern Federal Lands Highway Division (EFLHD).* QA/QC. Responsibilities included quality assurance reviews for civil, structural, architectural, mechanical, and electrical drawings and specifications. Facilitated QC review process utilizing discipline review checklists, RFP scope checklists, and coordination of drawings. Michael Baker is performing an independent quality assurance-quality control review of plans for improvements to facilitate riverfront pedestrian access between the John F. Kennedy Center for the Performing Arts and the Rock Creek and Potomac Parkway (RCPP) Trail. The project scope includes the addition of two continuous staircases with integral elevator towers centered on the Potomac River side of the building and extending from the River Terrace to the RCPP Trail, along with various trail and site improvements.

APPENDIX 2 – Project Profiles

Michael Baker
INTERNATIONAL

We Make a Difference

West Virginia Schools for the Deaf and the Blind

Romney, West Virginia

Michael Baker provided general Architectural and Engineering services to the West Virginia Schools for the Deaf and the Blind in Romney, WV for three different Bid Packages. The first Bid Package included three main tasks.

TASK 1 - School for the Deaf - Multipurpose Room HVAC Upgrades.
Design for the replacement of the Existing HVAC System serving the Multipurpose room. Design will include provisions for Fresh Air in accordance with ASHARE 62.1 Guidelines. Some structural, architectural, ductwork and electrical modifications were included.

TASK 2 - School for the Deaf - Life Safety System (this was expanded to the entire campus).
Design plans and specifications for the installation of an integrated Life Safety System that include:

a. Mass notification hardware and software for Deaf as required for a complete system
b. Design and specify new hardware as required
c. Integration with existing campus systems as practical

Client

West Virginia Schools for the Deaf and the Blind
301 E Main Street
Romney, WV 26757

Completion Date

March 2021

Michael Baker's Role

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

TASK 3 – School for the Deaf - Fire Alarm Upgrades.
Upgrade existing Fire Alarm System to meet current codes and interface with New Life Safety System.
Complete design for a building wet sprinkler system and that may include any affected building components. Existing sprinkler line entrance is provided. Only interior work provided. Design to include Hazard Classifications, riser detail, hydraulic calculations, basic pipe routing.

The second Bid Package included adding a Sprinkler System to the Instructional Resources Center and sprinkler modifications and upgrades to various other building to comply with BRIM and Fire Marshal requirements.

The third Package was a client requested a feasibility study of the Physical. Education building, which laid the groundwork for the third task; the HVAC renovation of the entire building; including a gymnasium, indoor swimming pool, exercise rooms and locker rooms.
Each formal submission will include a cost opinion for the proposed work. Construction on all projects were completed by March 2021.

Michael Baker
INTERNATIONAL

We Make a Difference

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 was 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.

Client

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

Completion Date

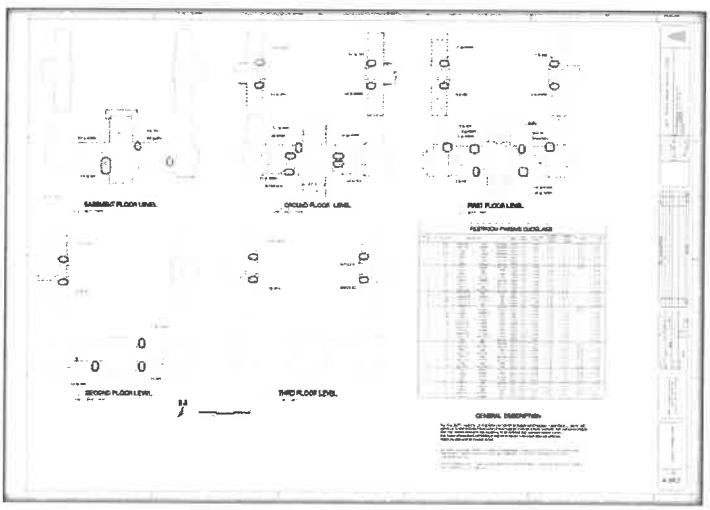
February 2021

Michael Baker's Role

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

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 **construction sequencing and scheduling.**
Eleven (11) of the 33 restrooms designed were completely renovated on the east side of the Capitol in 2021.



Michael Baker
INTERNATIONAL

We Make a Difference

ABCA Warehouse Fire Prevention Renovations

Nitro, West Virginia

Michael Baker provided Civil, Fire Protection and related engineering services to the West Virginia Alcohol Beverage Control Administration (ABCA) for their warehouse at HUB Industrial Park, 97 Independent Avenue in Nitro, WV. The client requested a study to determine the best approach for upgrading their fire water service to the building, which laid the groundwork for the project.

The ABCA warehouse is a 150,000 square foot facility. The fire protection system water supply is functionally obsolete and needed to be replaced with a new fire water service line to the building. Michael Baker provided services to design a new fire water supply line from a new tap of the 12-inch diameter line located along Independent Avenue and owned by the West Virginia American Water Company. This supply line was routed to the building in the most practical and cost-effective manner as determined by the study. The current fire water service enters the rear of the building and is supplemented by an on-site water storage tank and fire pump system. The new design eliminated the need for these on-site facilities. The method of delivery for this project is Design/Bid/Build.

Client

Alcohol Beverage Control Administration
900 Pennsylvania Avenue
4th Floor
Charleston, WV 25302

Completion Date

2021

Michael Baker's Role

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

Included the design were upgrades to the fire water service, a fire pump and other components relating to the function of the existing fire sprinkler system at the Warehouse. Michael Baker provided engineering analysis, design options with cost estimates, legal consultation, and demolition and construction documents for a complete working system.

The construction project will go out for bid in the spring of 2021.

Michael Baker
INTERNATIONAL

We Make a Difference

WVU Institute of Technology, Classroom Building

Beckley, West Virginia

Client

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

Completion Date

July 2017

Michael Baker's Role

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

Michael 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 21st 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.

Michael Baker
INTERNATIONAL

We Make a Difference

WVU Institute of Technology, Benedum Building

Beckley, West Virginia

Client

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

Completion Date

July ,2017

Michael Baker's Role

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

Michael 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.

Michael Baker
INTERNATIONAL

We Make a Difference

Advanced Training Center Facilities Master Plan

Harpers Ferry, West Virginia

This training/classroom campus is designed to meet the training needs of career CBP Officers, Border Patrol Agents, and Air and Marine law enforcement personnel within Operational Security (OPSEC) parameters. The campus is currently overutilized for the current trainings and conducts numerous trainings at various locations across the country due to lack of space. Michael Baker developed Master Planning products to help address overcrowding and address ongoing facility needs.

Michael Baker conducted seven workshops over the course of the project and met with numerous users of the campus. The goal of the master plan was to provide a clear future development strategy and guide the campus direction for the next 20 years. During this time, participants analyzed the existing conditions, formed a campus Vision, identified program requirements, and developed a plan that provides flexibility and long-range capacity.
As part of the Long-Range Component, detailed plans were developed that included the following components:

- Analysis of Vision, Goals, and Objectives for Property
- Analysis of Existing Utilities and Transportation Infrastructure Conditions
- Analysis of Planning Standards
- Development and Evaluation of Alternatives
- Fully Developed Preferred Alternative
- Preparation of the Zoning Plan / Form Based Code
- Illustrative Master Plan

Through the development of the Sustainable Component Plan, Michael Baker was able to work with ATC to establish goals that aid in achieving sustainable practices and working towards Net Zero. The goals were derived from models and research that assessed the current conditions at ATC and distilled the best strategies that can support the missions and operations. This assessment also included the various utilities throughout ATC. The SCP workshops ATC participants established specific goals aimed towards achieving levels of reduction that satisfy the standards set by Federal mandates and optimized Installation missions and operations.

Client

Customs and Border Protection
US Customs Border Protection Dr.
Harpers Ferry, West Virginia 25425

Darieus ZaGara,
Assistant Director
Enterprise Management
304-535-5394

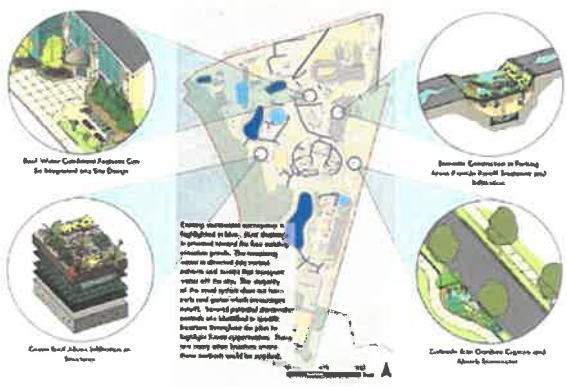
Contract Completion Date

2018

Baker's Role

- Master Planning

"I wanted to let you both know that the ATC truly appreciates your handling of this process and the work of your Team members. You have an outstanding collection of individuals with a great passion for the work that they do. We appreciate each and every member." - Darieus A. ZaGara, Assistant Director, ATC/OTD/CBP



The American Planning Association's Federal Planning Division selected the CBP ATC Master Plan for a Citation Award at the 2018 National Convention for Outstanding Federal Planning Project. This award exemplifies our ability to achieve industry recognition and adaptation of the planning process for specific campus applications.

Michael Baker
INTERNATIONAL

We Make a Difference

Indefinite Delivery-Indefinite Quantity Contract for Architectural and General Engineering Services

Tobyhanna Army Depot and, North-Atlantic, Division Locations

Client

Tobyhanna Army Depot
11 Hap Arnold Boulevard
Building 18
Tobyhanna, Pennsylvania 18466

Completion Date

Estimated: 2021

Michael Baker's Role

- Project management
- Planning and design charrette coordination
- Planning and programming
- Space planning
- Architecture
- Multidiscipline engineering services
- Antiterrorism and force protection analysis
- Cost estimation
- RFP Wizard implementation
- Sustainable design – Silver LEED certification
- On-site investigation
- DD Form 1391 parametric cost estimation

Michael Baker is providing planning, architecture, and general engineering services under a three-year indefinite delivery-indefinite quantity contract for projects at U.S. Department of Defense installations within the North-Atlantic division.

Michael Baker's services address virtually every aspect of facility planning and design. Tasks including coordinating and implementing planning charrettes, conducting on-site investigations, conducting antiterrorism and force protection analyses, performing programming, performing space planning and interior design, developing building systems designs **(including HVAC, electrical, and plumbing and fire protection systems)**, developing construction cost estimates, reviewing construction submittals, responding to contractor requests for information, and preparing as-built plans.

Assignments include developing designs for building renovations as well as new construction.

Representative projects awarded to date are summarized below.

Renovation Design of Building 2, Bay 4 Renovation, Tobyhanna Army Depot, Tobyhanna, Pennsylvania. Michael Baker is serving as the designer of record on a design-bid-build project to fully renovate Building 2, Bay 4. Michael Baker performed architecture and engineering for building systems design and develop construction cost estimates. The modifications enabled relocation of offices, warehouse storage and work assembly and packing facilities for mission support. The work was also necessary to comply with building codes and Americans with Disabilities Act requirements.

On-Call HVAC Engineering Support Services, Tobyhanna Army Depot, Tobyhanna, Pennsylvania. Michael Baker provided on-call HVAC engineering support to client staff. Michael Baker's HVAC engineering duties as a technical consultant involved field survey, feasibility study, engineering report, design and layout, and construction support services. Michael Baker provided an on-site mechanical engineer for assignments, as necessary. Projects were accomplished by in-house personnel or contractors. Assignments included modifications of HVAC design for extensive interior renovations to Building 3, the back-ramp-area of Building 1-A, and the first-floor of Building 11, and for the construction of an addition to Building 17; evaluation of HVAC system needs and management of

construction for Building 30 – a new 78,000-square-foot facility – and for two new officer-grade family housing facilities; and the design of new or upgrade of existing HVAC systems as part of renovations to numerous warehouses throughout the depot.

Design and Construction Phase Services for Family Housing Unit Renovations, Tobyhanna Army Depot, Tobyhanna, Pennsylvania. Michael Baker developed designs and construction cost estimates, performed construction submittal reviews, responded to contractor requests for information, and prepared as-built plans for the installation of new front-porch roofs and rear-patio privacy fences for 10 buildings containing 40 family housing units (Buildings 501 through 509).

Barracks Restroom Renovation Design, Tobyhanna Army Depot, Tobyhanna, Pennsylvania. Michael Baker performed design and construction phase services for barracks restroom renovations. Michael Baker's tasks included developing designs for the demolition of the existing second- and third-floor east-end enlisted personnel restrooms, expansion of the shower area to include additional showers, and complete replacement of all plumbing fixtures, lighting fixtures, exhaust components, and floor and wall finishes.

Renovations to Building 5, Bay 1, Tobyhanna Army Depot, Tobyhanna, Pennsylvania. Michael Baker is serving as the designer of record on a design-bid-build project to renovate Building 5, Bay 1. The scope of work involves adding HVAC capacity, installing a drop-ceiling system, expanding existing restrooms, and enhancing door systems. Michael Baker will prepare design and construction plans and construction cost estimates. Michael Baker will investigate options to enhance HVAC performance and increase cooling in work room 155 of Building 5. Individual dedicated air-conditioning units will be designed for the TYQ-23 testbed room and two TYQ-23 mobile shelters to replace the field HVAC units currently being used. A drop-ceiling system with T8 lighting fixtures will be designed for work room 170 of Building 5. Michael Baker will design an air handling unit that provides full HVAC and humidity control for the work room to replace the existing unit heater that serves the space. Restroom renovation design will involve the installation of additional fixtures to increase capacity and replace the existing fixtures. Door system modifications include reconfiguring the double vestibule at the main north entrance and the adjoining office and corridor to maximize the usable space as well as replacing four existing roll-up door installations with automatic sliding glass door systems.

Renovation Design of Building 10, Bay A and Bay C, Tobyhanna Army Depot, Tobyhanna, Pennsylvania. Michael Baker is serving as the designer of record on a design-bid-build project t o fully renovate Building 10 A and partially renovate 10-C at Tobyhanna Army Depot. Michael Baker will perform architecture and building systems design, develop construction cost estimates, and prepare as-built plans. The modifications will enable relocation of the client's Environmental Control Branch repair shop and fabric application shop from other locations at the depot and reconfiguration of the carpenter shop operations that currently exist in Building 10-A. The work is also necessary to comply with building codes and Americans with Disabilities Act requirements.

Erected in the 1950s, Building 10 is of permanent construction and consists of a single-story, steel-frame structure with CMU walls with an EFIS exterior finish on the north and east sides. It is divided into three bays. 10-A encompasses a 200-foot by 134-foot area currently used solely for the carpenter shop. 10C contains approximately 500 square feet of office space that will be demolished and replaced with a two-story, freestanding, in-plant office tower. Work within 10A will entail the demolition of the compressed air and steam stations; demolition of light fixtures and upgrading of the lighting system; upgrade of electrical systems to conform with NEC 2005 and client specifications; establishment of adequate compressed air supply and air drops to machines and work benches; installation of two new steel-stud-and-gypsum-board walls to divide the bay into three separate shops; installation of sliding glass electric doors in the new walls; removal of exterior windows and closure of the openings using CMU

and an EFIS finish system; painting of the interior CMU walls; replacement of overhead and personnel doors; renovation of the office near the mezzanine; renovation of the mezzanine to accommodate two additional offices, with full HVAC; and installation of two modular-office mezzanines with stairwells, one in the Environmental Control Branch repair shop and one in the fabric application shop, with full HVAC. Work within Bay C will entail the installation of a new in-plant modular office tower, which will feature two offices on the upper level with walk-through access and a conference room and copy/print room on the lower level, with full HVAC.

Design and Construction Phase Services for Elevator Installation, Tobyhanna Army Depot, Tobyhanna, Pennsylvania. Michael Baker is providing architectural and engineering services for the installation of a new elevator and related equipment in Building 12. The new elevator will provide access to the proposed second-floor mezzanine that will be installed as part of the Building 12 office renovation project and is necessary to comply with building codes and Americans with Disabilities Act requirements. Elevator installation must also be coordinated with other concurrent Building 12 projects, which include restroom, administrative, and testing area renovations. The scope of work entails installation of ceiling, flooring, and permanent walls and all finishes; modification of the roof to accommodate the elevator penthouse, installation of the elevator pit, modification of foundations, and installation of a hoist beam; installation of a sump pump; demolition of the existing interior wall to enable access to the proposed second floor mezzanine and installation of a lintel for the new wall opening; repair and upgrade of the HVAC system to serve the mechanical equipment room; repair and upgrade of electrical distribution and lighting systems; potential modifications to the existing fire sprinkler system; and installation of common access card readers for elevator access. Michael Baker's services include architecture; mechanical, electrical and fire protection engineering, construction cost estimation, and as-built plans development.

Design and Construction Phase Services for Renovation of Building 12 Administrative Space, Tobyhanna Army Depot, Tobyhanna, Pennsylvania. Michael Baker is serving as designer of record on a design-build project to renovate the administrative space on the east side of Building 12. The project involves renovating the existing administrative space and relocating the majority of functions to the planned new second-floor mezzanine, which will be constructed as part of the office renovation on the west side of the building. The undertaking is necessitated by the transfer of the depot's Test, Measurement, and Diagnostic Equipment testing area from Building 1-A to the east side of Building 12 and must also be coordinated with other concurrent Building 12 projects, which include restroom, elevator, and testing area renovations. The scope of work entails installation of a drop ceiling, flooring, permanent walls, all finishes, and cubicle systems; development of the basic furniture and cubicle layout; repair and upgrade of the existing HVAC system to serve the second-floor space; demolition of existing high-pressure steam lines to accommodate the new layout; repair and upgrade of the building electrical distribution, telecommunications, and lighting systems; modification of the existing Public Address and Audio Visual Information System system to serve the new space; modification of the fire sprinkler system to serve the new space; installation of common access card readers for exterior doors, the elevator, and stairwell areas; and provision of access to the proposed second-floor restrooms that are part of the office renovation project and future access to restrooms from unfinished space on the second-floor mezzanine. Michael Baker will convene and conduct a planning charrette and develop design and construction plans and construction cost estimates. Michael Baker's tasks encompass architecture; interior design; mechanical, electrical and fire protection engineering; construction cost estimation; and as-built plans development.

Michael Baker
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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.

Client
West Virginia State University
124 Ferrell Hall
Institute, WV 25112

Completion Date
10-Year IDIQ ending 2021

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 futher investagation 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.

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.

Michael Baker
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Design-Build Renovation of Dormitory Building 2424

Edwards Air Force Base, California

Michael Baker was the designer of record for the design-build renovation of the 25,933-gross-square-foot, three-story Dormitory Building 2424. Michael Baker's services included project and design management; architecture; civil, structural, mechanical, electrical, and plumbing engineering; structural interior design; life safety, fire alarm and suppression, and telecommunications design; landscape architecture; and construction administration and observation.

Project Overview

Dormitory Building 2424, constructed in the 1950s, consists of cast-in-place concrete columns bearing the concrete slabs of three levels: the second and third floors and a roof slab. The purpose of the project was to renovate the dormitory to comply with the U.S. Air Force Unaccompanied Housing Design Guide. The dormitory was reconfigured to change the building from a 58-room to a 61-room facility and provide seismic, sprinkler, and life-safety system upgrades, and was modified to meet current antiterrorism and force protections standards.

The project involved renovation of the housing wings with some modifications to the central core. The design converted the 58 individual-style units to three- and four-person modules with individual full baths and closets.

The core areas of the renovated facility include a first-floor hall and mail room, storage areas, offices, electrical and mechanical rooms, a communications room, lockers, and a vending area. The second-floor core area includes a hall, TV room, dining area, communications room, mechanical room, lockers, and a storage area. The third-floor core includes a lounge, game room, communications room, lockers, and a storage area.

Client

U.S. Army Corps of Engineers, Los Angeles District
CESLCT-P
P.O. Box 2711
Los Angeles, California 90053-2325

Completion Date

2017

Michael Baker's Role

- Project management
- Design management
- Preliminary and final design
- Architecture
- Civil engineering
- Structural engineering
- Mechanical, electrical, and plumbing design
- Structural interior design
- Life safety and fire protection design
- Telecommunications design
- Landscape architecture
- Construction administration
- Construction observation

The project also involved replacement of all building systems, including the fire suppression system; plumbing; heating, ventilation, and air conditioning systems; electrical systems; and communication systems. The exterior design is compatible with the installation's design standards, providing a contemporary aesthetic and thermally efficient envelope.

Project and Design Management

Michael Baker's project and design management services included facilitation of two-day kick-off meeting and design charrette at the base, participation in biweekly progress meetings with the contractor, and participation in design review meetings.

Michael Baker developed and maintained a SharePoint website for document control, and developed and implemented a design quality control plan for the project.

Preliminary and Final Design

Following the design charrette, Michael Baker performed a pre-design visit to the project site and researched available building construction records and compared them with visible building systems to develop baseline record drawings for the design. Michael Baker prepared design documents at the 65 percent interim, 100 percent pre-final, and corrected 100 percent design phases. Michael Baker prepared Unified Facilities Guide design specifications in SpecsIntact format, and participated in three design review meetings.

The structural design maintained the standing-seam metal roofing that was installed during a renovation in 1992. The new exterior wall finish consists of a 3-inch-thick exterior insulation and finish system over 8-inch concrete masonry block that provides a minimum of R-15 thermal insulation. The project team installed a weather barrier to prevent air and moisture infiltration. Thermally broken, fixed, blast-resistant aluminum windows using glazing filled with argon gas also provide insulation and a measure of antiterrorism and force protection. Other antiterrorism and force protection measures include exterior metal blast-resistant doors.

Interior finishes are low-maintenance and easily cleaned. Colors are comfortable and provide an aesthetically pleasing environment. Interior colors and finishes are coordinated to create a cohesive design and give a residential feel to the facility.

Within the apartments, the bathrooms have ceramic tile flooring with coordinating ceramic tile base. Kitchens and living rooms feature sheet vinyl tile flooring and rubber baseboard. The sleeping rooms and closet floors also have carpet tile with coordinating base. Cabinets and built-in casework in kitchens are medium density fiberboard with a plastic-laminate finish with solid surface counters and backsplashes.

Other flooring includes resilient tile floor and loose entry mat in the vestibule and interior common area corridors. Ceramic tile with coordinating ceramic tile base is in the public restrooms. The lounges and game room have carpet tile floor with coordinating rubber base. The mechanical rooms, electrical rooms, communication rooms have the existing floor finishes from a renovation in the 1990s, and lockers have resilient tile flooring with coordinating rubber baseboards.

The purpose of the electrical design was to support the mechanical system requirements of chillers, exhaust fans, air compressors, roll-up doors, and hot water heaters. The electrical design package included all the electrical construction requirements needed to complete the exterior site work and the interior design for the facility. This consisted of the primary medium voltage connection details and the associated underground duct bank; primary pad-mounted transformer for the facility, parking lot lighting, and primary duct banks; the manhole connection details for the communication systems lighting fixture layout and lighting fixture schedule creation; receptacle layout, panel, and switchboard installation details with panel schedule loading; electrical circuiting to mechanical equipment, primary, and secondary grounding design, power, and communication system one-line diagrams; and communication rack placement and equipment layout.

The renovations included all new light fixtures and lighting controls; replacement of emergency egress lighting; and removal of all abandoned electrical equipment, devices, conduit, and wiring.

Michael Baker designed an upgraded telecommunications system with all new telephone and data outlets throughout the facility, and new 19-inch racks, patch panels, and termination blocks in the telecommunications

rooms on each floor. New 19-inch voice and data racks with separate telephone and data patch panels are installed in each telecommunications room. All new Category 6 UTP horizontal cabling was installed from each telecommunications outlet to the rack-mounted patch panels. New backbone copper and fiber-optic cabling was installed between racks on each floor.

Michael Baker provided mechanical design to upgrade the heating, ventilation, and air conditioning (HVAC) and plumbing systems to meet current standards. The mechanical and plumbing design included replacement of the exterior boiler; the air-cooled chiller; hot and chilled water piping, pumps, and accessories; all fan-coil units and thermostats; and the two exhaust fans.

Plumbing design consisted of upgrades to the building domestic water supply system, including replacement of the domestic hot water heater, main domestic water line, and domestic hot water storage tank, and modification of distribution systems for the new restroom and kitchen layouts. Michael Baker also designed upgrades to the building sanitary system, including the replacement of the sanitary sewer main outside the building and rework of the sanitary sewer lines and vent lines to accommodate the new restroom layouts. The plumbing design also included the replacement of the natural gas main piping and distribution within the facility.

Michael Baker designed a new automatic fire protection sprinkler system with an aboveground double-check backflow preventer, a fire department connection, and control valves. The fire protection upgrade also included the replacement of the entire fire alarm system and mass notification system, including single-station and photoelectric duct smoke detectors that initiate the shutdown of the associated HVAC units, strobe and speaker devices, and fire extinguishers.

The intent of Michael Baker's landscape design concept was to provide moderate solar exposure and wind protection, control noise, screen objectionable or frame good views, provide antiterrorism and force protection measures, and define the area. Michael Baker designed an automated underground irrigation system using the most recent water efficiency technology, and designed site furnishings that complement adjacent facilities.

Construction-Phase Services

During construction, Michael Baker reviewed all contractor submittals and responded to contractor requests for information, and provided on-site construction observation services. Michael Baker prepared as-built drawings based on the contractor's red-line construction documents.

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Architectural and Engineering Services for U.S. Army Reserve and Military Construction Projects

Various Locations

Under a third consecutive indefinite delivery-indefinite quantity contract, Michael Baker is providing architectural design and engineering services for a variety of mission-critical projects that serve the U.S. Army Reserve's expanding needs for personnel training and equipment maintenance and support the activation of additional brigade combat teams.

Michael Baker's tasks include developing preliminary and final designs and request-for-proposal (RFP) performance specifications for U.S. Army Reserve Center horizontal and vertical construction and other military construction projects within the client's area of responsibility. Infrastructure projects included equipment concentration site warehouses; tactical equipment maintenance facilities; and central-issue, container-loading, billeting, and dining facilities.

On full design-bid-build and design-build RFP projects, Michael Baker participates in design charrettes and design review meetings to explore the range of user needs and preferences for structural and system functionality and promote team understanding and consensus, and energy charrettes to identify potential initiatives to promote energy efficiency, minimize environmental effects, and reduce immediate and long-term operating costs. These meetings are critically important, as they form the basis for an iterative and collaborative process to achieve user mission goals.

Client

U.S. Army Corps of Engineers, Louisville District
600 Dr. Martin Luther King, Jr. Place
P.O. Box 59, Room 972
Louisville, Kentucky 40202

Completion Date

2018

Michael Baker's Role

- RFP document preparation
- Planning
- Sustainable design
- Site and civil engineering
- Geotechnical engineering
- Architectural design
- Interior design
- Structural engineering
- Mechanical engineering
- Plumbing design
- Fire protection engineering
- Electrical engineering
- Communications design

Michael Baker's initiatives to promote sustainability addressed all aspects of building and site design and construction. They include specifications for the use of materials that were locally available and products with recyclable content; integration of occupancy sensors to reduce lighting energy consumption; use of water-saving features, such as low-flow plumbing fixtures, to reduce water consumption; use of ozone-friendly refrigerants and refrigerant quantities to minimize ozone depletion; development of landscaping designs that minimize the use of potable water, incorporation of native, low-maintenance drought-tolerant plants, and preservation of existing trees; and the diversion of construction waste from landfills to meet LEED requirements.

Brief descriptions of representative projects follow:

Facility Design

Dining Facility Design, Fort McCoy, Wisconsin. Michael Baker was the designer of record for the design-bid-build delivery of an approximately 20,000-square-foot, one-story annual training-mobilization dining facility. Modeled after the client's operational readiness training complex 1,428-person dining facility standard design, the new building includes two 4,500-square-foot dining areas, a 3,000-square-foot kitchen, men's and women's restrooms, mechanical and electrical rooms, a communications room, and exterior storage space. Michael Baker's services included architectural design, surveys, environmental investigation, geotechnical engineering, all site and building engineering, cost estimating, value engineering, and LEED certification administration.

Container-Loading Facility Design, Fort McCoy, Wisconsin. As designer of record, Michael Baker provided architectural and engineering services for the construction of a 30,862-square-foot container-loading facility; a two-acre, concrete-paved container storage yard; and a 19-space parking lot. Michael Baker designed the container-loading facility to meet LEED Silver certification. Tasks ranged from site and civil engineering to building architectural and interior design and facility engineering, including structural, mechanical, plumbing, fire protection, and electrical and telecommunications systems design, and LEED certification administration.

Fort McCoy serves as a key transfer point for the shipping and receiving of military equipment for U.S. Army Reserve units and troops throughout the world. The new building meets escalating service demands by optimizing equipment and material containerization and transport operations.

Michael Baker promoted sustainability throughout building design and construction. The building design included materials and features that reduce environmental effects, save energy, and minimize costs. Materials that were locally available and products with 20-percent recyclable content were used. Occupancy sensors reduce lighting energy consumption. Interior building water-saving features, such as low-flow plumbing fixtures and urinals, reduce water consumption by 20 percent. Ozone-friendly refrigerants and refrigerant quantities were used to minimize ozone depletion. Long-term energy consumption is reduced through contracting with a Green-E-certified renewable energy provider that supplies 70 percent of electricity for the building.

Billeting Facility Design, Fort McCoy, Wisconsin. Michael Baker served as the designer of record for construction of a 65,000-square-foot, two-story billeting facility for noncommissioned officers and other military trainees. Michael Baker designed the billeting facility to meet LEED Silver certification. Michael Baker's services included architectural design, surveys, geotechnical investigation, all site and building engineering, cost estimating, value engineering, and LEED certification administration.

The billeting facility, which is part of the noncommissioned officer academy campus at Fort McCoy, primarily houses students who are attending noncommissioned officer and other training courses. The project is the third phase of the noncommissioned officer academy campus construction at Fort McCoy, for which Michael Baker provided master planning services. Because the new billeting facility construction limits overlap those of the Phase II academy building, the team had to coordinate project construction efforts.

The new L-shaped billeting facility includes two long wings that predominantly consist of double-occupancy billets. Michael Baker's design provided for 126 double-occupancy units and enabled a buildout to create 12 additional units in support of training initiative expansion at the base. An exterior courtyard was constructed to join the new building with the billeting facility that was constructed during Phase I of the master plan.

The billeting facility project includes a campus-wide stormwater management system for this phase and future phases.

Sustainability measures were integrated throughout building design and construction and included the use of locally available materials and products with 20-percent recyclable content; occupancy sensors to reduce lighting energy consumption; water-saving features, such as low-flow plumbing fixtures, to reduce water consumption by 40 percent; ozone-friendly refrigerants and refrigerant quantities to minimize ozone depletion; solar panels to offset 100 percent of the annual energy consumed by the exterior lighting; best practices site stormwater management systems; and landscaping that includes native, low-maintenance, drought-tolerant plants and preserves existing trees, while avoiding irrigation system use, thereby reducing landscaping-related potable water consumption by 100 percent.

Charrette participation was critically important to project development. Michael Baker facilitated a design charrette and collaborated with the client in identifying needs and preferences and preferred alternatives to the standard design. In addition, Michael Baker held a special energy charrette to target materials and approaches to promote sustainability and conserve energy, with the goal to exceed ASHRAE 90.1 2007 performance criteria by 40 percent. This project involved facility winterization, a very unique and challenging design requirement. The client anticipated winter seasons during which the dining facility may be unoccupied. While Michael Baker's design provided for the contingency of year-round operations, with energy conservation measures to maximize cost savings, Michael Baker included provisions to enable complete wintertime shutdown of all areas except one small room, which houses the water riser and fire alarm panels, and quick reactivation of building systems within two weeks at any time during the year. In addition, all systems, finishes, and equipment were analyzed or selected for the ability to withstand winter temperatures.

This project also included another unique sustainable design feature: outdoor placement of kitchen cooler and freezer condenser units to reduce the building heat load.

Tactical Equipment Maintenance Facility and Equipment Concentration Site Warehouse Design, Fort McCoy, Wisconsin. Michael Baker was the designer of record for the design-build delivery of an approximately 58,000-square-foot, two-story, modified large tactical equipment maintenance facility (TEMF) and an approximately 44,000-square-foot, one-story equipment concentration site (ECS) warehouse, along with 30 acres of gravel hardstand designated for organizational parking. Michael Baker designed both structures to meet LEED Silver certification. Michael Baker's services included architectural design, surveys, environmental investigation, geotechnical oversight, all site and building engineering, cost estimating, value engineering, and LEED certification administration. The new TEMF, ECS warehouse, and additional hardstand will enable ECS-67 at Fort McCoy, the largest ECS in the world, to support the Army Force Generation training initiative by storing and maintaining more vehicles and furnishing all required equipment for training units, eliminating the need for training units to ship their own equipment to and from the installation and related costs.

The ECS warehouse and its vaults, which accommodate the separate U.S. Army Reserve and ECS missions, provide a clear height of 25 feet. This clearance enables forklift access throughout the vaults–a unique design feature.

The project energy charrette was integral to project development. Energy charrette participants evaluated renewable energy sources and passive and active energy-saving measures. These included structure siting and physical orientation; internal layout; R-value enhancements; low-emissivity windows; daylight harvesting measures; energy-saving lighting options; and high-efficiency heating, ventilation, and air conditioning systems. Michael Baker designed an 18-foot-high solar wall for the TEMF that captures heat from the sun and passes it into the building during the winter months. The elimination of exterior light pollution was also extremely important for this project. Michael Baker designed the perimeter security lighting to minimize light pollution and avoid disruption of night maneuver training, which is conducted on an adjacent site.

U.S. Army Reserve Center Renovation and Expansion Design, Homewood, Illinois. As designer of record, Michael 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 included construction of a 22,300-square-foot parking area for military equipment and 130 parking spaces for privately owned vehicles. Michael Baker designed the training facility to meet LEED Silver certification. Michael Baker's services included architectural design, surveys, environmental and geotechnical investigation, all site and building engineering, cost estimating, value engineering, and LEED certification administration.

Sustainability measures included the use of locally available materials and products with 20-percent recyclable content; occupancy sensors to reduce lighting energy consumption; water-saving features, such as low-flow plumbing fixtures, to reduce water consumption; ozone-friendly refrigerants and refrigerant quantities to minimize ozone depletion; a solar photovoltaic array and inverter system, which provides electrical energy to supplement utility provider-supplied electricity and offsets the annual energy consumed by the new exterior lighting; best practices site stormwater management systems; and landscaping that minimizes the use of potable water, integrating native, low-maintenance, drought-tolerant plants and preserving existing trees.

U.S. Army Reserve Center Design, Bethlehem, Pennsylvania. Michael Baker was the designer of record for the construction of a 200-member U.S. Army Reserve Center. Michael Baker designed the center to meet LEED Silver certification.

The U.S. Army Reserve Center consists of a 42,043-square-foot, two-story training building; a 5,480-square-foot, one-story organizational maintenance shop; a 1,358-square-foot, one-story unheated storage building; 3,364 square yards of paved parking for military equipment; and parking for 128 privately owned vehicles. Michael Baker's services included architectural design, surveys, geotechnical investigation, all site and building engineering, cost estimating, value engineering, and LEED certification administration.

Sustainability measures included the use of locally available materials and products with 20-percent recyclable content; occupancy sensors to reduce lighting energy consumption; water-saving features, such as low-flow plumbing fixtures, to reduce water consumption; ozone-friendly refrigerants and refrigerant quantities to minimize ozone depletion; best practices site stormwater management systems; and landscaping that minimizes the use of potable water, integrating native, low-maintenance, drought-tolerant plants and preserving existing trees.

APPENDIX 3 – References

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 local or current clients and contact information:

- **West Virginia General Services Division**
  112 California Avenue
  Charleston, WV 25305
  Mr. Greg Milton, Director
  (304) 558-2317

- **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

- **West Virginia Alcohol Beverage Control Administration**
  900 Pennsylvania Avenue
  Charleston, WV 25302
  Mr. Fred Wooton, Commissioner
  (304) 356-5501

- **130th 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

- **West Virginia Department of Transportation – Division of Highways**
  1900 Kanawha Boulevard East,
  Building 5, Room A 405
  Charleston, WV 25305
  Mr. C Elwood Penn, IV, P.E, Director of Planning
  (304) 558-9269