

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)

Ernest Dellatorre, Director

(Printed Name and Title)

129 Summers Street - Suite 201, Charleston, West Virginia 25301

(Address)

(304) 340-4267 x115 | (304) 233-4613

(Phone Number) / (Fax Number)

edellatorre@mckinleydelivers.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contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise stated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.

McKinley Architecture and Engineering

(Company)



(Authorized Signature) (Representative Name, Title)

Ernest Dellatorre, Director

(Printed Name and Title of Authorized Representative)

22 March 2021

(Date)

(304) 340-4267 x115 | (304) 233-4613

(Phone Number) (Fax Number)

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 exceeds five percent of the total contract amount.

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (W. Va. Code §61-5-3) that: (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: McKinley Architecture and Engineering

Authorized Signature:  Date: 22 March 2021

State of West Virginia

County of Ohio to-wit:

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

My Commission expires August 27, 2025

AFFIX SEAL HERE



OFFICIAL SEAL
NOTARY PUBLIC
STATE OF WEST VIRGINIA
KATHRYN MCKINLEY
32 20th St. Ste. 100
Wheeling, WV 26003
My Commission Expires August 27, 2025

NOTARY PUBLIC 

Purchasing Affidavit (Revised 01/19/2018)

Per your request in the Solicitation, in GENERAL TERMS AND CONDITIONS, Part 8. INSURANCE, here are sample copies of our various Insurances and their Coverages:

ACORD **CERTIFICATE OF LIABILITY INSURANCE** DATE (MM/DD/YYYY) 02/03/2021

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. IF SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER: Paul Associates, Inc. 1311 Chapline Street PO Box 990 Wheeling WV 26003-0123
 CONTACT: Amy Slover PHONE: (304)233-3303 FAX: (304)233-3333 EMAIL: aslover@paulassociates.com
 INSURER(S) AFFORDING COVERAGE: INDEMNITY # 3280

INSURED: McKinley & Associates Inc. 32-20th Street Ste 100 Wheeling WV 26003-
 INSURER A: CINCINNATI INDEMNITY # 3280
 INSURER B:
 INSURER C:
 INSURER D:
 INSURER E:
 INSURER F:

COVERAGES CERTIFICATE NUMBER: REVISION NUMBER:
 THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

LINE	TYPE OF INSURANCE	APPL. SECT.	POLICY NUMBER	POLICY EFF.	POLICY EXP.	LIMITS
A	COMMERCIAL GENERAL LIABILITY <input checked="" type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER POLICY: <input type="checkbox"/> PRO <input type="checkbox"/> RET <input type="checkbox"/> LOC OTHER: _____	X	EPP 0146335	06/15/2020	06/15/2021	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (As outlined) \$ 1,000,000 MED EXP (As per schedule) \$ 500,000 PERSONAL & ADV INJURY \$ 10,000 GENERAL AGGREGATE \$ 1,000,000 PRODUCTS - COMPOUND AGG \$ 2,000,000
A	AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO <input checked="" type="checkbox"/> OWNED <input checked="" type="checkbox"/> AUTO ONLY <input checked="" type="checkbox"/> HIRED <input checked="" type="checkbox"/> AUTO ONLY <input type="checkbox"/> NON-OWNED <input type="checkbox"/> AUTO ONLY		EPP 0146335	06/15/2020	06/15/2021	SINGLE LIMIT \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per person) \$ OTHER \$
A	UMBRELLA LIAB EXCESS LIAB DEPT. RESTRICTION \$ WORKERS COMPENSATION AND EMPLOYERS LIABILITY ANY EMPLOYER'S LIABILITY OFFICERS/DIRECTORS/EXCLUDED (See schedule in 109) If not describe under 109-SECTION OF SCHEDULE 109 below	X	EPP 0146335	06/15/2020	06/15/2021	EACH OCCURRENCE \$ 1,000,000 AGGREGATE \$ 1,000,000 <input checked="" type="checkbox"/> PER OCCUR <input type="checkbox"/> EACH ACCIDENT \$ 1,000,000 <input type="checkbox"/> DISEASE - EA EMPLOYEE \$ 1,000,000 <input type="checkbox"/> DISEASE - POLICY LIMIT \$ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required) Specimen Copy to be held for McKinley and Associates.

CERTIFICATE HOLDER: Specimen
 CANCELLATION: AI 005479
 SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
 AUTHORIZED REPRESENTATIVE: *[Signature]*

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ACORD **CERTIFICATE OF LIABILITY INSURANCE** DATE (MM/DD/YYYY) 10/12/2020

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. IF SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER: The James B. Oswald Company 1100 Superior Avenue, Suite 1500 Cleveland OH 44114
 CONTACT: Steven Gelber PHONE: (440) 306-0047 FAX: (440) 306-2815 EMAIL: sgelber@jbooswald.com
 INSURER(S) AFFORDING COVERAGE: INDEMNITY # 3280

INSURED: McKinley Architecture and Engineering 32-20th Street #100 Wheeling WV 26003
 INSURER A: CINCINNATI INDEMNITY COMPANY # 3280
 INSURER B:
 INSURER C:
 INSURER D:
 INSURER E:
 INSURER F:

COVERAGES CERTIFICATE NUMBER: 1067424632 REVISION NUMBER:
 THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

LINE	TYPE OF INSURANCE	APPL. SECT.	POLICY NUMBER	POLICY EFF.	POLICY EXP.	LIMITS
A	COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER POLICY: <input type="checkbox"/> PRO <input type="checkbox"/> RET <input type="checkbox"/> LOC OTHER: _____					EACH OCCURRENCE DAMAGE TO RENTED PREMISES (As outlined) \$ MED EXP (As per schedule) \$ PERSONAL & ADV INJURY \$ GENERAL AGGREGATE \$ PRODUCTS - COMPOUND AGG \$
A	AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED <input type="checkbox"/> AUTO ONLY <input type="checkbox"/> HIRED <input type="checkbox"/> AUTO ONLY <input type="checkbox"/> NON-OWNED <input type="checkbox"/> AUTO ONLY					SINGLE LIMIT \$ BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per person) \$ OTHER \$
A	UMBRELLA LIAB EXCESS LIAB DEPT. RESTRICTION \$ WORKERS COMPENSATION AND EMPLOYERS LIABILITY ANY EMPLOYER'S LIABILITY OFFICERS/DIRECTORS/EXCLUDED (See schedule in 109) If not describe under 109-SECTION OF SCHEDULE 109 below					EACH OCCURRENCE \$ AGGREGATE \$ <input type="checkbox"/> PER OCCUR <input type="checkbox"/> EACH ACCIDENT \$ <input type="checkbox"/> DISEASE - EA EMPLOYEE \$ <input type="checkbox"/> DISEASE - POLICY LIMIT \$

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required) Waiver of Subrogation as designated above is provided when required of the Named Insured by written contract of agreement.

CERTIFICATE HOLDER: Specimen
 CANCELLATION: AI 005479
 SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
 AUTHORIZED REPRESENTATIVE: *[Signature]*

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CEOI 0603 ADJ2100000008

Brushfork Armory HVAC Design



ARCHITECTURE + ENGINEERING

22 February 2021

Tara Lyle
Department of Administration, Purchasing Division
2019 Washington Street, East
Charleston, WV 25305-0130

Dear Ms. Lyle,

McKinley Architecture and Engineering is pleased to provide the Acquisition and Contract Administration Section of the Purchasing Division, on behalf of the West Virginia Army National Guard, Construction and Facilities Management Office, with our Expression of Interest for professional architectural and engineering design services for the updates and renovation of the HVAC systems at the Brushfork Armory facility in Bluefield, WV. As you review this submission, we emphasize the following strengths of McKinley Architecture and Engineering with respect to your projects:

McKinley Architecture and Engineering (*McKinley & Associates*) has been providing design services since 1981. With offices in **Charleston** and **Wheeling, WV** and **Pittsburgh, PA**, we support a professional staff of **Engineers, Architects, an HVAC Qualified Commissioning Process Provider, Construction Administrators**, and more. Our staff also includes a **LEED Accredited Professional, who is a Mechanical Engineer, and LEED Accredited Professionals specializing in Building Design and Construction** who can add energy efficient aspects into your project. **McKinley has made the 2020 Inc. 5000 list, the most prestigious ranking of the nation's fastest-growing private companies!** McKinley ranks on the 2020 Inc. 5000 List with 3-Year Revenue Growth of 62.86%.

Your **Project Manager** is **Tim E. Mizer, PE, RA, QCxP**, our **Director of Engineering Services**, whom is also a **Qualified Commissioning Process Provider** who has been formally trained to fully understand how integrated **HVAC systems** function and how systems interface with others to run your building efficiently. He understands that the systems' performance can reduce operating and maintenance costs, improve the comfort of a building's occupants, and extend the life of equipment. During the past 39 years, our firm's expertise has been called upon many times upgrading outdated and antiquated machinery, designing energy efficient systems, and even evaluating and correcting errors in existing design.

We are ready to begin immediately and will meet all your Goals and Objectives. Thank you for reviewing our submission and considering McKinley Architecture and Engineering for your project; we are very excited about the possibility of continuing our working relationship with the West Virginia Army National Guard!

Personal Regards,

Ernest Dellatorre
Director of Business Development
(304) 340-4267 x115
edellatorre@mckinleydelivers.com

Corporate Information

Firm History

Founded in 1981, McKinley Architecture and Engineering is a multi-discipline **full service A/E firm**, offering comprehensive **professional services in Architecture, Engineering, Interior Design, Energy Efficient and Sustainable (LEED) Design, Commissioning, Construction Administration, and more.** We have a broad range of skill and experience for projects involving **emergency response facilities, public safety, governmental, municipal, commercial, industrial, schools, and sports & recreation** to name a few. Over the years, our firm won multiple **State and National awards and recognitions** for our designs. **McKinley has made the 2020 Inc. 5000 list, the most prestigious ranking of the nation's fastest-growing private companies!**



Firm Information

Ernest Dellatorre
Director

Tim Mizer, PE, RA, QCxP
Director of Engineering Services

Patrick J. Rymer, AIA, ALEP
Director of Architectural Services

Date of Incorporation

July 1, 1981
Wheeling, West Virginia

Professionals on Staff

Architects
Engineers
Arch./Eng. Designers
LEED AP BD+Cs
Historic Preservationist
Construction Admins.
HVAC Commissioning Provider
ALEP (CEFP)
REFP

Locations

32 Twentieth Street
Suite 100
Wheeling, WV 26003
P: 304-233-0140
F: 304-233-4613

129 Summers Street
Suite 201
Charleston, WV 25301
P: 304-340-4267

5000 Stonewood Drive
Suite 200
Wexford, PA 15090
P: 724-719-6975

Credentials

McKinley Architecture and Engineering is a member of the following **organizations:**

A4LE (formerly CEFP), ACI International, AIA, ASCE, ASHRAE, ASPE, AWI, BOCA, NCARB, NFPA, WVEDC, and more

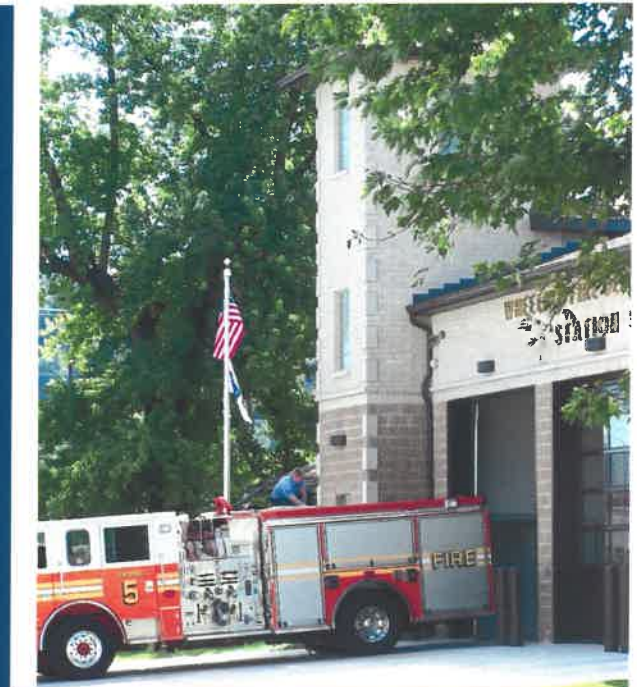
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www.Linkedin.com/company/McKinleyDelivers

Instagram: @McKinleyDelivers



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ARCHITECTURE + ENGINEERING

Project Approach

First and foremost we can state that our large professional staff will devote whatever time is necessary to provide you with a successful project. If our project team is chosen for this project; they are available to **start immediately** upon our being selected, and will provide the necessary hours to complete your project on time. Tim E. Mizer, PE, RA, QCP, our **Director of Engineering Services**, is also a **Qualified Commissioning Process Provider**. Furthermore, Kurt A. Scheer, PE, LEED AP is our **Senior Mechanical Engineer** and is also a **LEED Accredited Professional**. Together, they will **design an energy efficient HVAC system that will meet all of your Goals and Objectives!**

To start your projects, kickoff meetings will be held at the Brushfork Armory Facility with the West Virginia Army National Guard representatives, along with all our design professionals. From this meeting, the Owners Project Requirements will be defined and documented, to be used as a guideline through the design phases. We will **verify the existing conditions** of the facility through the review of the existing conditions, existing drawings if available, and with discussions with the Owner. From our overall facility survey, we will use all this information to produce a full reporting of the current conditions, with our **recommendation** of rework to best fit the present needs of this building, and will create floor plans of your existing building. We will then use all this information to **design the HVAC replacement/upgrade and specify new equipment and systems, utilizing energy efficient, economically and maintenance friendly equipment. All electrical and mechanical systems will be provided within the design to support the facility. Cost effective energy conserving features will also be incorporated within the design.** This system will best fit the standards of today's design and energy efficiency standards, and will meet all current building codes.

Over the years, McKinley Architecture and Engineering has designed **hundreds of projects which involve HVAC assessments, renovations, replacements, upgrades, and/or repairs** - which gives us invaluable experience to utilize within your project, whether it is working with alternate suppliers or evaluating and recommending the best HVAC concepts. During the past **39.5 years**, our expertise has been called upon many times upgrading outdated and antiquated machinery, bringing the systems and load requirements up to compliance, designing energy efficient systems, scheduling for phased construction around occupied areas of the projects, and even evaluating and correcting errors in existing design (pipe sizing, piping material errors, control valving, equipment accessibility, etc). We currently support clients on a number of significant HVAC projects that illustrate this ability. Our HVAC redesign will include any required Building Load Calculations of the renovation space for accurate sizing of new equipment. This will be used for the evaluations of the existing spaces and also to include any additional new conditions as described by the Brushfork Armory personnel.

The **timeline** of any project, especially an **HVAC project**, is **critical**. Whereas almost all systems and equipment have a multi-month lead time, potential issues could be lead times for hardware and equipment, or compatibility with any existing systems. McKinley Architecture and Engineering has a **great working relationship with various HVAC suppliers**, which has helped us reduce the response time for our recent projects. A **positive relationship with the installing contractors is also needed**, and we have worked with all of the major HVAC contractors in the area. Therefore, we know we can successfully complete your project on time and budget. McKinley Architecture and Engineering can also work with the Contractors and Testing Adjusting & Balancing (Rebalancing) Company to verify proper system operation. The purpose of the verification is to verify all systems and equipment are operating as intended, and to the designed efficiency.

With our **vast HVAC renovation experience, understanding of codes**, and our **great working relationship with various state agencies**; we are confident that we have the talent and technology needed to make these projects successful. Also, as your **MEP Engineers/Architects and single point of responsibility**, you can be reassured of **smooth project delivery and sensitivity to all relevant guidelines in our state. We will meet your goals and objectives.**

Commissioning

On staff, we have a **Qualified Commissioning Process Provider** who can provide independent commissioning services, not only on new facilities but also existing facilities.

Your project manager is **Tim E. Mizer, PE, RA, QCxP**. His **QCxP accreditation** was earned at the University of Wisconsin-Madison. He has been formally trained to fully understand how integrated HVAC systems function and how systems interface with others to run your building efficiently, and has a comprehensive knowledge of the full American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) Commissioning Process. From this, we commission the project to ensure everything is working properly, and to teach the maintenance personnel how to use the machinery and gives them all the correct manuals.



For existing buildings, the commissioning provider can troubleshoot the existing systems to determine the fault of non-performing equipment or the reasons for uncomfortable spaces.

For new buildings and their systems, commissioning entails the review of the design plans, verifying the installations, and the oversight of the testing of the mechanical and electrical systems to ensure the owner is getting the type and quality of product expected.



Sustainable “Green” Design

Buildings designed today will need to meet the demands of the future; McKinley Architecture and Engineering identifies the changes necessary in the design of today and to meet these demands. This approach helps to retain the buildings’ long-term profitability and value, which achieves the buildings’ **sustainability**.

McKinley approaches ecological design from a business perspective, offering **proactive** solutions to complex problems such as **indoor air quality, energy efficiency, resource depletion, and water quality**. With **commercial and governmental office project experience**, the McKinley Team can work alongside local designers to provide sustainable design and construction guidance. We also offer full architectural design services and guided design workshops on sustainable design issues.

Our Philosophy is to provide our clients with experienced leadership as well as state-of-the-art and **innovative** design expertise to accomplish the goals of your projects. Function, economics and versatility, in addition to the development of **strong aesthetic appeal**, are crucial elements in our design process. We also believe that enhancement of the physical environment in which each individual lives and works should add significantly to the enjoyment of life. Our firm has dedicated our professional skills to attain these goals.

For a few recent sustainable awards, McKinley Architecture and Engineering was



presented with the **2019 Governor’s Award for Leadership in Buildings Energy Efficiency** at the 2019 Innovation & Entrepreneurship Day at the Capitol! We were recognized for our commitment to sustainability and energy efficiency in the design of office buildings, schools, multi-use facilities, and a wide variety of commercial, industrial, **government**, and historical structures.

Our designs have also won **West Virginia Department of Environmental Protection’s Clean Energy Environmental Award, 2 Black Bear Awards for the Highest Achievement** for the WV

Sustainable Schools program, **2 U.S. Department of Education Green Ribbon Schools**, and a **Gold Medal Green Building Award** by Building of America, among others!

We also have a project that is **Collaborative for High Performance School (CHPS) Registered**; the United States’ first green building rating program designed for schools.

Furthermore, we have designed 4 projects listed on the **U.S. Environmental Protection Agency’s ENERGY STAR** program: Building 55: West Virginia State Office Building in Logan, Hilltop Elementary School, Cameron Middle/High School, and Johnson Elementary School. To receive an ENERGY STAR, you need to perform in the top 25% of the most energy efficient projects in the program. **Building 55: West Virginia State Office Building** is one of the most energy efficient buildings in the State, and is in the **Top 5%** of all Energy Star rated buildings in the Country!



Leadership in Energy and Environmental Design



LEED® (Leadership in Energy and Environmental Design) Green Building Rating System™ developed by the U.S. Green Building Council (USGBC) is the nationally accepted standard for the design, construction, and operation of high performance green buildings (www.usgbc.org). In January 2001, our firm was the **first organization in West Virginia to join the USGBC**. No other WV firm joined until nearly 2 years later! We have **LEED Accredited Professionals** on staff, along with our skilled architectural/engineering team, who will efficiently and cost effectively achieve certification under this standard or we can guide you through the process in order to develop sustainability goals specific to your project.

We have **LEED® Accredited Professionals**, including 2 who are **specialized in Building Design & Construction**:

- Kurt A. Scheer, PE, LEED AP (Mechanical Engineer)
- Christina Schessler, AIA, LEED AP BD+C
- Thomas R. Worlledge, AIA, LEED AP BD+C, REFP



Our **LEED Certified** Projects are (LEED Rating System in parentheses):

- Hilltop Elementary School** in Sherrard, WV (LEED for Schools 2.0)
- The First LEED Certified School in the State of West Virginia!
- Building 55: West Virginia State Office Complex** in Logan, WV (LEED NC 2.2)

All of our current **LEED Registered** Projects are either under construction or in design with potential **LEED Platinum Certification** or potential **LEED Silver Certification**. Our LEED Registered Projects are (LEED Rating System in parentheses):

- Bellann in Oakhill, WV (LEED EB O&M)
- Cameron Middle/High School in Cameron, WV (LEED for Schools 2.0)
- SMART Office in Williamson, WV (LEED CI)

The LEED AP Specialty Logos signify advanced knowledge in green building practices and specialization in a particular field.



The LEED AP BD+C designation that both Thom and Christina have achieved represents specialization in commercial design and construction.



Thomas R. Worlledge, AIA, LEED AP BD+C, REFP has been a member of the USGBC since 2001; he was the first LEED Accredited Professional in the state of West Virginia! As a professional trainer for the Sustainable Building Industries Council, he teaches other design professionals in the art of High Performance School

design. He is also a Founder & Chairman of the Board for the US Green Building Council's West Virginia Chapter.



Christina Schessler, AIA, LEED AP BD+C has been a member of the USGBC since 2009. In 2012 she received her Masters in Historic Preservation, so not only can she incorporate LEED "Green" aspects into new buildings; she can even incorporate energy efficient design into renovation/preservation

projects. Twenty percent of a building's energy consumption is embodied in the existing physical structure itself!

The 'USGBC Member Logo' is a trademark owned by the U.S. Green Building Council and is used by permission.

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Quality Control

Quality control at McKinley Architecture and Engineering is a constant process which **begins with the initial project activity and continues through document submissions, bidding, construction and owner occupancy.** The longevity and size of the firm and our history of success completing complex and innovative projects is founded upon our commitment to this process.

During the design phases, all personnel become fully versed in the client's program, project requirements and design standards. The design team is responsible for identifying for you any potential conflicts between program criteria and design standards and resolving those conflicts to your satisfaction.

As the schematic/concept plans are developed, Tim E. Mizer, PE, RA, QCxP, your Project Manager, will present plans for review and comments to a plan group depending on the nature of the work; e.g. engineers commenting on the engineering and architects critiquing the architecture (*a peer review is seen below*). Once a consensus is reached, the plans advance in the process.

Prior to the completion of each phase, a set of project documents is issued to each discipline for coordination, cross-checking and review. The following items are checked at that time:

- Drawings and specifications for program compliance.
- Drawings and specifications for internal coordination.
- Cost effectiveness of the design.
- Drawing accuracy.
- Compliance with appropriate codes and client standards.

After coordination check corrections are completed, Tim will review the documents and compare the completed documents with check prints to verify that corrections have been made in accordance with the project design criteria. A review set will be sent to you, the Fire Marshal and other governing authorities for preliminary review.

During the subsequent phases of design, all items are checked by persons other than those performing the daily design work in order to provide fresh insight. Prior to the final release of the documents, revisions are once again checked by the Project Manager and appropriately referenced on the drawings. Copies of the final documents will be distributed to you for final review and approval. A set is also sent to the Fire Marshal and other governing authorities for final review comments. Comments are incorporated into the documents prior to issuance for advertising, bidding and construction.

Bid documents are issued after a final check to verify that all bid packages have current revisions included and are appropriately identified. Bid sets are numbered and registered to bidders so that each bidder may be kept informed of clarifications and addenda. We will provide assistance in analyzing and evaluating bids for construction, and assist with awarding the construction contracts.



During the construction, the processing of shop drawings and submittals will be controlled and monitored by Mr. Mizer, and includes the receipt, logging, review and return of submittals. Urgent items can often be expedited to satisfy the construction schedule. In addition, Bob Smith, your Construction Administrator, will monitor the contractor's progress to ensure that they are following the Construction Documents, and verify that closeout documents are submitted in a timely manner upon Substantial Completion.

Construction Administration & On-Site Representation

Construction Administrator Involved from the Beginning of the Design Phase

Observe the Construction Progress

Liaison between the Owner, Contractor, and Architects/Engineers

Responsible for All Construction Progress Meetings and Minutes

Monitor the Construction Schedule

Ensure that the Contractor is Following the Construction Documents

Verify Pay Application and Change Orders

**Typically On-Site Once Every Two Weeks
(Provide Additional On-Site Representation if Requested)**



Our **Construction Administrators** have an extra responsibility than what most firms' Construction Administrators have; our CAs are a part of the design process from **Day 1** (they are not thrown into the project only when construction starts; they are here from the beginning), so they know the ins-and-outs of the project. Our CAs have an important role as being the **liaison between the Owner, Contractor, and Architect**. The primary objective of the Construction Administration services is to ensure completion of work the way the client wants it - **as scheduled and as budgeted**. Our CAs evaluate the quality of the work to verify that it meets the level required by clients; in addition, they monitor the contractor's progress to ensure that they are following the Construction Documents. They observe the construction progress, are responsible for all construction meetings and minutes, and they verify pay application and change orders. The Construction Administrator is typically on-site once every two weeks, but we can provide additional on-site representation if requested.

References

We feel that the best way to demonstrate our strengths and leadership in **HVAC renovation design** is by referring to our clients. We have an ever-growing list of repeat clients. We are able to respond to their needs, and we are certain that we are able to respond to all of your needs as well. So that you don't only have to take our word for it; we encourage you to call our references:

(HVAC Projects)

Mr. Joshua Smith, PE
Buildings & Grounds Program Manager
Maintenance Division
WVDOT Division of Highways
1900 Kanawha Boulevard, East
Building 5, Room 350
Charleston, WV 25305
304 / 887-2325

*(Building 55: West Virginia State Office Complex -
LEED Certified; energy efficient HVAC system)*

Mr. Gregory L. Melton
State of West Virginia
General Services Division
1900 Kanawha Boulevard East
Charleston, WV 25305
304 / 558-1808

(Brooke High HVAC renovation)

Mr. Rob Robinson
Brooke County Schools
1201 Pleasant Avenue
Wellsburg, WV 26070
304 / 737-3481

*(Open-Ended IDIQ Contracts, including
multiple HVAC projects)*

Mr. Michael Douglass
United States Postal Service
27497 Albert Pick Road
Greensboro, NC 27498
336 / 665-2875

(Multiple HVAC renovation Projects)

Dr. Kim Miller
Ohio County Schools
2203 National Road
Wheeling, WV 26003
304 / 243-0300

(4 HVAC renovation projects)

Ms. Amanda Kimble
Tyler County Schools
P.O. Box 25
Middlebourne, WV 26149
304 / 758-2145

Design Team Flow Chart



Project Manager / Point of Contact

Tim E. Mizer, PE, RA, QCxP

Engineering Team

Tim E. Mizer, PE, RA, QCxP

*Director of Engineering Services / Architectural Engineer / Architect
/ Qualified Commissioning Process Provider*

Kurt A. Scheer, PE, LEED AP

Senior Mechanical Engineer / LEED Accredited Professional

Richard G. Berger

Senior Mechanical Engineering Designer

David A. Ullom

Mechanical & Fire Protection Engineering Designer

Scott D. Kain

Plumbing & Electrical Engineering Designer

Michael J. Clark Sr.

Electrical Engineering Designer

Architecture

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

*Architect / LEED Accredited Professional specializing in Building
Design & Construction*

Construction Administration

Robert E. Smith

** McKinley Architecture and Engineering is willing to dedicate more professionals if they are needed; including more Architects and Designers, LEED Accredited Professionals, CAs, and more.*

Licenses

For your convenience, you will see a copy of Tim Mizer's (your Project Manager's) West Virginia State Board of Registration for Professional Engineers License (WV PE #013169), and Kurt Scheer's (Mechanical Engineer / LEED AP) License (WV PE #24408). We would be happy to provide you with copies of other Professionals' licenses if you wish to see them. In addition, a listing of all the professionals' certifications, degrees, and licenses are found on their resumes.



Tim E. Mizer, PE, RA, QCP

Architectural Engineer / Architect / Commissioning Provider

Director of Engineering Services

EDUCATION:

Kansas State University
B.S. Architectural Engineering - 1983

University of Cincinnati
Architecture

PROFESSIONAL AFFILIATIONS AND REGISTRATIONS:

Registered Engineering in:
West Virginia
Ohio

Registered Architect in:
Ohio

**Qualified Commissioning Process
Provider**

PROFESSIONAL EMPLOYMENT:

McKinley Architecture and Engineering
Director of Engineering Services
Architect / Engineer / Commissioning
Wheeling, WV (1995 to present)

M.C.C. Engineering
Director of Design
Columbus, Ohio (1988-1995)

Schooley Caldwell and Associates
Electrical & Mechanical Design
Columbus, Ohio (1986-1988)

Mizer Design
Free Lance Architectural Engineering Design
Columbus, Ohio (1985-1986)

Envirotek, Inc.
Drafting and Electrical & Mechanical Design
Raleigh, NC (1984-1985)

SUMMARY OF EXPERIENCE:

A very talented and unique professional who is registered **both** in **engineering** and **architecture** which has provided him with a total understanding of the engineering components and the process necessary for integrating architectural design and building systems. Furthermore, as a **Qualified Commissioning Process Provider**, he has been **formally trained to fully understand how integrated HVAC systems function and how systems interface with others to run your building efficiently. He understands that the HVAC system's performance can reduce operating and maintenance costs, improve the comfort of a building's occupants, and extend the life of equipment.** He joined McKinley Architecture and Engineering in 1995, and has over 30 years of experience. As the **Director of Engineering Services**, Mr. Mizer's presence is a key to the design procedures required to coordinate the functionality of the engineering systems into the aesthetics of a building space. He has worked on many relevant projects, such as building assessments, HVAC renovations, energy efficient projects, and more.

NOTABLE PROFESSIONAL EXPERIENCES:

WV Army National Guard - multiple projects, including several SPCC Certifications and Amendments, AASF#1 Hangar HVAC, Mountaineer Challenge Academy, and Camp Dawson Multi-Purpose Building

West Virginia Department of Health & Human Resources' Ohio County Office Building fit-out / renovations, including HVAC

Building 55: WV State Office Complex in Logan (LEED Certified)

Building 34: WV State Office Complex in Weirton

USPS - worked on a multitude of Post Offices in WV & PA, including dozens of HVAC projects (many involved Commissioning)

West Virginia State Police - dozens of renovations, additions, and new detachments, including multiple HVAC modernization projects

West Virginia School Building Authority - Dozens of HVAC projects State-Wide, as well as new construction and renovations

West Virginia Department of Transportation, Division of Highways - Buckhannon & Moundsville Headquarters HVAC

West Virginia Independence Hall, including HVAC

Grave Creek Mound Museum renovations, including HVAC

Raleigh County Emergency Services Authority HVAC renovations

West Virginia University - multiple renovations, additions, and new buildings, including multiple HVAC projects

Orrick's Global Operations Center, including HVAC

Wagner Building, including HVAC

Belmont County Divisional Courts & Offices renovations, including HVAC

The Towers Building renovations, including HVAC

Kurt A. Scheer, PE, LEED AP

Senior Mechanical Engineer / LEED Accredited Professional

EDUCATION:

Penn State University
B.S. Architectural Engineering - 2001

PROFESSIONAL AFFILIATIONS AND REGISTRATIONS:

Registered Engineering in:
Pennsylvania
West Virginia

Member:
US Green Building Council

ASHRAE

ASPE

PROFESSIONAL EMPLOYMENT:

McKinley Architecture and Engineering
Senior Mechanical Engineer
Wexford, PA (2020 to present)

Allen & Shariff Corporation
Senior Mechanical Engineer
Pittsburgh, PA (2018-2020)

BDA Engineering, Inc.
Senior Mechanical Engineer
Homestead, PA (2006-2018)

Allen & Shariff Corporation
Mechanical Engineer
Pittsburgh, PA (2004-2006)

LLI Technologies, Inc.
Mechanical Engineer
Pittsburgh, PA (2001-2004)

SUMMARY OF EXPERIENCE:

Mr. Scheer is a **Mechanical Engineer** with 20 years of experience in the Architectural Engineering industry with a focus on mechanical systems design. In addition, Kurt has overseen electrical, plumbing, and fire protection engineering for all his projects for 15 years. Market sectors such as hospitality, higher education, and commercial office are areas where he has significant experience. Additionally, Mr. Scheer has experience with **LEED Certified** projects and energy modeling.

NOTABLE PROFESSIONAL EXPERIENCES:

City of Moundsville - Municipal/Public Safety Building

Brooke County Judicial Courthouse renovations

Tyler County Commission - Judicial Annex Building

Nicholas County Division of Homeland Security & Emergency Management - E911 and Emergency Operations Center

Light of Life Rescue Mission

Fayette County Schools - NEW Meadow Bridge School PK-12 School & School Based Health Clinic

Harrison County Schools - Gore Elementary School build-out renovation / addition

Harrison County Schools - NEW Lost Creek Elementary School

Ohio County Schools - Warwood School renovations

Ohio County Schools - Wheeling Park High School Athletic Complex

Ohio County Schools - Woodsdale Elementary School cafeteria addition & renovations

Fort Henry Building - Fourth Floor office build-out

City of Weirton - Park Drive / Three Springs Drive Development

YWCA Renovations

Allen & Shariff Corporation*

Some notable projects are the historic Pittsburgh Athletic Association high rise renovation, the new Bakers Crossing apartments and retail spaces (Nashville, TN), City of Pittsburgh Building @ 412 Blvd of the Allies (LEED Commercial Interiors), several urban multifamily projects, and several retail projects and commercial projects ranging in size from 5,000 – 50,000 square feet.

**previous work experience with a firm other than McKinley Architecture and Engineering*

Richard G. Berger

Senior Mechanical Engineering Designer

EDUCATION:

CCAC of Allegheny County
Concentration: HVAC

PROFESSIONAL AFFILIATIONS AND REGISTRATIONS:

Pennsylvania Sheet Metal Journeyman License
Volunteer Fireman (retired)

PROFESSIONAL EMPLOYMENT:

McKinley Architecture and Engineering
Senior Engineering Designer
Wexford, PA (2020 to present)

CJL Engineering
Lead HVAC Senior Mechanical Designer
Moon Township, PA (2019-2020)

Lovorn Engineering
Lead HVAC Senior Mechanical Designer
Blawnox, PA (2013-2019)

Stantec Corporation (formerly Burt Hill)
Lead HVAC Mechanical Designer
Butler, PA (1997-2013)

Peter F. Loftus division of Eichleay Engineers
Lead HVAC Mechanical Designer
Pittsburgh, PA (1989-1997)

SSM Industries, Inc.
Sheet Metal Professional Licensed Journeyman
Pittsburgh, PA (1979-1989)

SUMMARY OF EXPERIENCE:

Mr. Berger is a mechanical engineering professional with over 35 years of experience in HVAC design. His skills include Revit, AutoCadd, Microstation CADD, HVAC duct work and piping design, HVAC calculations, project management, and HVAC and piping field experience. Rich is a Professional Sheet Metal Journeyman license Sheet Metal Workers Local 12. Have designed for healthcare, K-12 schools, universities, high rise commercial, lab renovations and hotels.

NOTABLE PROFESSIONAL EXPERIENCES:

McKinley Architecture and Engineering

Tyler County Commission - Judicial Annex Building

Fayette County Schools - NEW Meadow Bridge School PK-12 School & School Based Health Clinic

Harrison County Schools - Gore Elementary School build-out renovation / addition

CJL Engineering*

Mr. Berger was the Lead HVAC Senior Mechanical Designer for Healthcare/Commercial/Restaurants. Projects have included Hospital related area design, PNC Bank Scranton multi-story office, Parkway West Tech Center, Erie Water Works, and more.

Lovorn Engineering*

Mr. Berger was the Lead HVAC Senior Mechanical Designer for Healthcare/Commercial/Restaurants. Projects have included OR design, MRI design, Radiology department, Central Sterile, Higher education institutions, Restaurants, Hotels/Motels, and more.

Stantec Corporation (formerly Burt Hill)*

Lead HVAC Mechanical Designer for the Healthcare Division. His projects have included but are not limited to OR design, MRI design, Radiology departmental, Central Sterile, lab design, Higher education institutions, Cornell University Sciences Building, Beachwood Ohio High School renovation, UPMC Biomedical science tower and Scaife Hall lab renovations.

Peter F. Loftus division of Eichleay Engineers*

Lead HVAC designer for Healthcare and University projects. Projects included West Penn Hospital North Tower, Carnegie Mellon University Center, General Motors chiller replacement and UPMC facility upgrades and additions.

SSM Industries, Inc.*

Projects worked on included Allegheny County Prison, PPG Place, West Penn Hospital, One Mellon Bank Center, Bristol Medical Center and UPMC Hospital facilities.

**previous work experience with a firm other than McKinley Architecture and Engineering*

David A. Ullom

Mechanical Engineering Designer

EDUCATION:

Fairmont State University
B.S. Mechanical Engineering Technology - 2011

Pierpont Community and Technical College
Associates Degree in Applied Sciences:
Drafting and Design - 2011

PROFESSIONAL EMPLOYMENT:

McKinley Architecture and Engineering
Engineering Designer
Wheeling, WV (2019 to present)

Kennametal Inc.
Sales Engineer (2016-2019)
Applications Engineer (2012-2016)
Latrobe, PA

Marion County Assessors Office
Map Developer
Fairmont, WV (2010-2012)

SUMMARY OF EXPERIENCE:

Mr. Ullom is a results-driven individual who prioritizes safety, cost-effective solutions, and exceeding customer expectations. He is proficient in Autocad, Inventor, and Revit software. David also has experience as a Sales Engineer, Applications Engineer, and Map Developer, which provides a unique understanding for problem solving.

NOTABLE PROFESSIONAL EXPERIENCES:

Belmont County Divisional Courts renovations

Jefferson County Justice Center renovations

Trinity Health System - Crisis Rehabilitation Unit

Ft. Henry Building renovation

General Services Administration - Social Security
Administration's Wheeling, WV Office

Fayette County Schools - New Meadow Bridge K-12 project

Harrison County Schools - Lost Creek Elementary addition and
renovations

Harrison County Schools - Gore Elementary addition and
renovations

Ohio County Schools - Bethlehem Elementary renovations

Ohio County Schools - Bridge Street Middle renovations

Ohio County Schools - Elm Grove Elementary renovations

Ohio County Schools - Madison Elementary renovations

Ohio County Schools - Middle Creek Elementary renovations

Ohio County Schools - Triadelphia Middle renovations and
additions

Ohio County Schools - Warwood Elementary and Middle School
renovations

Ohio County Schools - West Liberty Elementary renovations

Ohio County Schools - Wheeling Middle renovations

Ohio County Schools - Wheeling Park High renovations and
additions

Ohio County Schools - Woodsdale Elementary renovations

Tyler County Schools - New Bus Maintenance Facility

Mid-Ohio Valley Technical Institute (MOVTI) renovations

Scott D. Kain

Plumbing & Electrical Engineering Designer

EDUCATION:

Technology Education College /
Ohio State University
Associates in Mechanical Design - 1996

PROFESSIONAL EMPLOYMENT:

McKinley Architecture and Engineering
Engineering Designer
Wheeling, WV (2001 to present)

HAWA Inc.
Mechanical Designer
Columbus, OH (1998-2001)

Autotool Inc.
Engineer
Columbus, OH (1995-1998)

SUMMARY OF EXPERIENCE:

Mr. Kain is an accomplished engineering designer who has performed in all the engineering trades we provide; specializing in electrical, plumbing, and fire protection. He has been utilized for various McKinley Architecture and Engineering' projects that needed additional mechanical, structural, and architectural manpower. In addition, Mr. Kain has also provided 3D renderings, to aid in business development, during his long tenure at McKinley Architecture and Engineering.

NOTABLE PROFESSIONAL EXPERIENCES:

West Virginia Army National Guard - multiple projects

WVDHHR's new Ohio County office fit-out / renovations

Building 55: WV State Office Complex in Logan (LEED Certified)

Building 34: WV State Office Complex in Weirton

WVDRS Wheeling District's new office space fit-out / renovations

United States Postal Service - statewide post offices

West Virginia State Police - multiple projects state-wide

Orrick's Global Operations Center

Bennett Square - multiple phases of tenant fit-outs

Wagner Building - multiple phases of tenant fit-outs

Ft. Henry Building - multiple phases of tenant fit-outs

Panhandle Cleaning & Restoration warehouse and office building

Wheeling Island Hotel•Casino•Racetrack multiple projects

Wheeling Island Fire Station

Jefferson County Jobs & Family Services renovations

Harrison County Jobs & Family Services renovations

West Virginia University - Colson Hall

West Virginia University - State Fire Training Academy

WVU Institute of Technology - Maclin Hall

Cabela's Eastern Distribution Center

WV Northern Community College - B. & O. Building

Marshall County Schools - Hilltop Elementary School (LEED Certified)

Marshall County Schools - Cameron High School (LEED Registered)

Boone County Schools - multiple projects

Brooke County Schools - multiple projects

Hancock County Schools - multiple projects

Ohio County Schools - multiple projects

Wood County Schools - multiple projects

Michael J. Clark Sr.

Electrical Engineering Designer

EDUCATION:

Eastern Gateway Community College
A-ATS Electro-Mechanical Engineering - 2012

Jefferson Community College
A-ATS Electrical Trade Technology - 2003

PROFESSIONAL AFFILIATIONS AND REGISTRATIONS:

Certified in SMAW Weld Process & Basic
Welding and Applications 2002

West Virginia Journeyman License

Ohio Fire Alarm License

OSHA 30 Certified

PROFESSIONAL EMPLOYMENT:

McKinley Architecture and Engineering
Electrical Engineering Designer
Wheeling, WV (2012 to 2018, 2020 to present)

Arcelor Mittal
Maintenance Technician Electrician
Weirton, WV (2012)

M.J. Electric
Journeyman Electrician
Iron Mountain, MI (2010-2012)

Erb Electric Company
Journeyman Electrician
Bridgeport, OH (2009-2010)

Bechtel Group Inc.
Journeyman Electrician
Glendale, AZ (2009)

Cattrell Companies, Inc
Journeyman Electrician
Toronto, OH (1998-2009)

SUMMARY OF EXPERIENCE:

Mr. Clark is an Electrical Engineering Designer and a Certified Journeyman Electrician with over 20 years of industrial, commercial and residential experience. He is knowledgeable in all areas of the national electrical code and excels in analyzing and solving problems with various electrical controls and systems. Mr. Clark brings a cross-trained background to our projects, being skilled in both the design and the construction ends which gives him a unique ability to understand all aspects of a project. He is also adept in performing electrical and mechanical installations, maintenance and repairs in plant facilities. Furthermore, he is seasoned as an Electrical Foreman and Superintendent on both commercial and industrial job sites. His key skills include Electrical Systems & Controls, Installations & Maintenance, Electromechanical Repairs, Blueprints & Schematics, Generators & Transformers, Switches & Circuit Breakers, Electrical Code, Safety & QA, Wiring Diagrams, Troubleshooting, Testing Instruments, Motors & Conduit, CAD-2D/3D, Welding, & Residential construction.

NOTABLE PROFESSIONAL EXPERIENCES:

City of Moundsville - New Municipal Public Safety Bldg

Belmont County Divisional Courts & Offices renovations

Jefferson County (OH) Courthouse upgrades and Annex demo

Brooke Co. Commission - Judicial Center & Historic Courthouse

Tyler Co. Commission - Courthouse & Police renovations

Building 55: WV State Office Complex in Logan (LEED Certified)

Brooke County Schools - NEW Brooke Middle School

Hancock County Schools - several projects, including Oak Glen High School renovations, Senator John D. Rockefeller IV Career Center HVAC renovations, Weir High renovations, Weir Middle renovations, NEW Weirton Elementary, and more

Harrison County Schools - NEW Johnson Elementary

The Linsly School - Banes Hall addition/renovations

Holiday Inn Express Hotels - on-call contract / multiple projects

City of Steubenville - 5 Parks Lighting and Security project

Franciscan University OP#1 Multi-tenant Retail Building

Franciscan University OP#2 Office / Retail Building

Wheeling Island Hotel•Casino•Racetrack - multiple projects

WVDRS Wheeling District's new office space fit-out

Carenbauer Wholesale Corporation warehouse addition/renovations

Bennett Square office build-out

Ft. Henry Building - multiple tenants fit-outs

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

Architect / Specialized LEED Accredited Professional

Charleston Office Manager



EDUCATION:

Virginia Polytechnic Institute & State University
Master of Architecture - 1992

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

PROFESSIONAL AFFILIATIONS AND REGISTRATIONS:

Registered Architect in:

West Virginia
Ohio
Pennsylvania
Tennessee
Virginia

National Board Certification:

NCARB #48600

President:

West Virginia Society of Architects

Member:

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

Former voting member:

ASHRAE 90.1 International Energy Code Committee

PROFESSIONAL EMPLOYMENT:

McKinley Architecture and Engineering
Manager, Charleston Office
Charleston, WV (2005 to present)

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

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

TAG Architects
Charleston, WV (1985-1990)

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

SUMMARY OF EXPERIENCE:

Mr. Worledge is a skilled **Architect** with over 30 years of experience, who has been the former President of the WV chapter of AIA, has received State and National design awards, and placed in National and Global design competitions. Unlike many architects who are new to green building and alternate energy, Thom started his career designing and building alternate energy systems, and was the first LEED Accredited Professional in West Virginia! He believe energy efficient design is simply good design practice. As a **LEED Accredited Professional specializing in Building Design & Construction (LEED AP BD+C)** and a **recognized sustainable design expert**, he has **2 LEED Certified** projects, **multiple LEED Registered** projects, several other energy-efficient projects, has articles published in State and National trade publications, was a featured speaker at multiple State and National conferences, served on the committee that set the ASHRAE 90.1 Standards for the International Energy Code, professionally teaches and trains other professionals in the art of High Performance Design, is a Founder & Chairman of the Board for the US Green Building Council's West Virginia Chapter, and much more.

NOTABLE PROFESSIONAL ACHIEVEMENTS:

West Virginia Department of Health & Human Resources' Ohio County Office Building fit-out / renovations

Building 55: WV State Office Complex in Logan (**LEED Certified**)

Veterans Affairs Medical Centers - multiple VAMCs around WV and PA

United States Postal Service - multiple projects throughout WV

West Virginia State Police - new Logan Detachment / Back-Up Data Center for the WVSP Headquarters

West Virginia State Police Academy - Renovations to Buildings A, B, and C, including exterior walls; New Buildings D and Multi-Purpose Building

Nicholas County Division of Homeland Security & Emergency Management - E-911 and Emergency Operations Center studies

Fairmont State University - College Apartments Complex

WVU Institute of Technology - Maclin Hall Dormitory in Montgomery

West Virginia University - University Police Building

Charleston Enterprise Center renovation (WV AIA Design Award)

Williamson SMART Office (LEED Registered / Placemaker Award)

Natural Energy Design (NED) Building (Placemaker Award)

Bellann in Oakhill, WV (LEED Registered)

Big Sandy Arena & Convention Center

Marshall County Schools - Hilltop Elementary School (**LEED Certified** - won multiple WV and National Awards & Recognitions)

Wood County Schools - Parkersburg High renovation (\$23 million) & Williamstown High renovation (\$13.5 million)

Robert E. "Bob" Smith

Construction Administrator

EDUCATION:

University of Pittsburgh
M.S. Industrial Engineering - 1989

United States Air Force Academy
B.S. Behavioral Science /
Human Factors Engineering - 1983

PROFESSIONAL AFFILIATIONS AND REGISTRATIONS:

Board Member:

Indian Creek School District (elected in 2009)

Instructor:

Mechanical Engineering, Eastern Gateway
Community College

President:

Mingo Business Association (2007 to present)

Commander:

American Legion Post 351 (2008 to present)

PROFESSIONAL EMPLOYMENT:

McKinley Architecture and Engineering
Construction Administrator
Wheeling, WV (2009 to present)

Jefferson County Regional Planning Commission
Regional Planner
Steubenville, OH (2008-2009)

Edison Local School District
Director of Operations (1999-2008)
Transportation Supervisor (1998-1999)
Hammondsville, OH

MILITARY SERVICE:

Wright Patterson Air Force Base - Dayton, OH
Chief B-2, Block 20 Field Retrofit, \$300 million
B-2 Systems Program Office (1994-1996)
Team Leader, Process Improvement Technology
Armstrong Laboratory (1989-1994)

Randolph Air Force Base - San Antonio, TX
Chief, Test Construction Section
Occupational Measurement Center (1987-1988)
Quality Control Psychologist
Occupational Measurement Center (1985-1987)
Supervisor of Test Construction Team
Occupational Measurement Center (1983-1985)

SUMMARY OF EXPERIENCE:

Mr. Smith has been a **Construction Administrator** at McKinley Architecture and Engineering for 10 years. Bob is a self confident, articulate and highly motivated individual with superior interpersonal and teamwork skills. He has a plethora of experience in mid to upper level personnel management, advanced information systems integration, training, acquisition, contract management, transportation and maintenance, and quality control. He has 23 years of direct supervisory experience, as well as 13 years of documented success as an Air Force Officer. He is currently a member of the Board of Education for the Indian Creek School District in Jefferson County, Ohio. He is also an Adjunct Professor at Eastern Gateway Community College in Steubenville, Ohio, where he is teaching Mechanical Engineering.

NOTABLE PROFESSIONAL EXPERIENCES:

United States Postal Service - multiple projects thru multiple open-ended IDIQ contracts, including Parkersburg Carrier Annex and Hub renovations & HVAC

The Towers Building renovations, including HVAC

Lincoln National Bank Building renovations

Cameron American Legion renovations

Jefferson County Courthouse renovations & Annex demo

West Virginia Army National Guard - AASF#1 HVAC renovations

Harrison County Courthouse renovations

Cabela's Eastern Distribution Center

City of Steubenville - multiple projects

Jefferson County Jobs & Family Services renovations

Brooke County Schools - Brooke High HVAC, new Brooke Middle, Follansbee Middle & Carlin Dodrill Fieldhouse renovations

Grant County Schools - Maysville Elementary & gymnasium renovations/HVAC & Union Educational Complex renovations

Hancock County Schools - A.T. Allison Elementary renovations, New Manchester Elementary renovations, Oak Glen High renovations/HVAC, Oak Glen High Multi-Sports Complex, Oak Glen Middle addition/renovations, Senator John D. Rockefeller IV Career Center HVAC, Weir High Multi-Sports Complex, Weir MS/HS HVAC, & new Weirton Elementary

Marshall County Schools - new Cameron High (LEED Registered) & new Hilltop Elementary (LEED Certified)

Ohio County Schools - multiple projects

The Linsly School - Baner Hall addition/renovations & Behrens Memorial Gymnasium renovations

Fairmont State University's new 3 building "University Terrace" Student Housing Apartment Complex

Statewide On-Call Agreement

WVDOT, Division of Highways

State-wide, West Virginia

Owner

West Virginia Department of Transportation,
Division of Highways

Construction Cost

Multiple projects completed under
2 multi-year open-ended contracts

Project Architects-Engineers

McKinley Architecture and Engineering

Project Engineer

Tim E. Mizer, PE, RA, QCxP

McKinley Architecture and Engineering has been honored to be a partner with the **West Virginia Department of Transportation, Division of Highways**, and we are now on our **2nd consecutive Statewide On-Call Agreement** with them. This open-ended contract is to provide both architectural/engineering consulting services (along with Construction Administration, and more) for the performance of various "tasks."

The **scope of services** generally consist of planning, studying, designing, renovating, repairing, conducting plan/specification reviews, preparing equipment specifications and related services for Department of Transportation facilities, including the site, utilities, buildings, and structures.

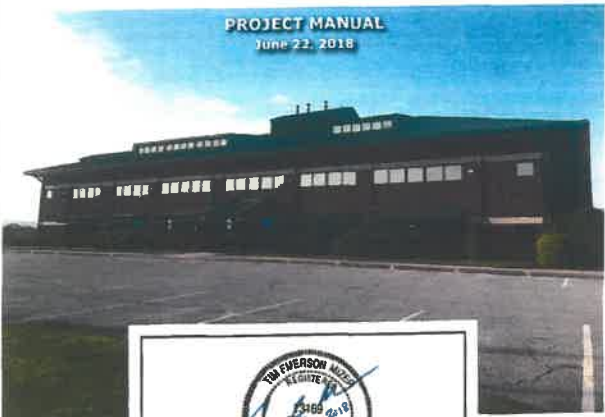
For one task, we designed the **HVAC replacement** to the existing 2-story, 8,820 square foot **WVDOH Equipment Division Facility in Buckhannon** (State Project N081-BLD/GR-0.00 00). We designed a new Variable Refrigerant Flow (VRF) air handling unit with remote condensing unit to condition the offices and conference room. A complete digital controls system was installed, with a desktop computer to allow authorized users access to the system.

For another task, we designed the **HVAC replacement** to the **WVDOH District 6 Headquarters Complex in Moundsville** (State Project N081-BLD/GR-0.00). The 31,000 SF building was conditioned with cooling only Air Handling Units and duct mounted heaters. That served full floors of office cubicles with no regard to proper zoning. As the conditioning units began to fail, it was determined that the complete system be replaced with a more economic system. McKinley Architecture and Engineering designed 2 Air Handling Units that provided ventilation air to VRF cassettes in the ceilings above the office areas. This solution provided individual control of all office spaces.


West Virginia Department of Transportation,
Division of Highways

District 6 Headquarters
HVAC Renovations
Moundsville, West Virginia

PROJECT MANUAL
June 22, 2018



REGISTERED DESIGN CERTIFICATION



McKINLEY
ARCHITECTURE + ENGINEERING

32 20th Street, The Maxwell Centre - Suite 100, Wheeling, West Virginia 26003 • 304-233-0140
129 Summers Street - Suite 201, Charleston, West Virginia 25301 • 304-340-4267
416 Longridge Drive, Pittsburgh, PA 15243 • 724-223-8250

Building 55 West Virginia State Office Complex



Logan, West Virginia

Owner

State of West Virginia

Size

53,200 SF approx.

Project Architects-Engineers

McKinley Architecture and Engineering

Project Architect

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

Contractor

Massaro Corporation

Commissioning Agent

Iams Consulting, LLC

City leaders were searching for a catalyst to stimulate community efforts to revitalize downtown Logan, West Virginia; this office building has become that inspiration. The building is designed to reflect the history and culture of the area while incorporating current technology and safety elements, thus empowering the community leaders to create a vibrant connected urban core. This new 5-story building underscores its major role in the development and revitalization of downtown Logan by uniting office space for 127 employees for **6 State agencies** under one roof, whom were once scattered throughout the city. The 53,200 SF building provides current technology, flexibility for future growth, and security features for existing and future tenants.

At the request of the Owner, the building was designed to be **energy efficient** and meet **sustainable design** goals, confirmed by LEED and energy star requirements. In March 2014, this project became **LEED Certified** for energy use, lighting, water, material use, as well as incorporating a variety of other sustainable strategies; by using less energy and water, this LEED certified building will save money for businesses and taxpayers, reduce greenhouse gas emissions, and contribute to a healthier environment for workers and the larger community. **To help achieve this, the HVAC System included the installation of custom air handling units with chilled and hot water coils, variable air volume boxes with hot water heating coils, 2 high efficiency condensing boilers, pumps with variable speed drive control, water cooled chiller with cooling tower, packaged rooftop energy recovery ventilator, and direct digital controls.** For a few other features, a **tight building envelope system** was created with closed cell foam insulation, pre-cast panels, rigid polyisocyanurate, gypsum board, and thermal efficient windows. The interior lighting systems utilize LEDs and occupancy sensors.



After the project was completed, the firm *alliantgroup* completed an **Energy Efficient Commercial Building Tax Deduction** study regarding the energy efficient features of the building (*seen on the following pages*), and they **projected the building's total energy costs and power costs to have savings of \$34,231 annually!**



Building 55 West Virginia State Office Complex



alliantgroup

September 5, 2014

Sent Via CMRRR: 7013 2630 0000 2069 4021

Mr. David J. Hildreth
West Virginia Department of Administration
900 Pennsylvania Ave., Ste. 500
Charleston, WV 25302

Re: Logan State Office Bldg. – Energy Efficient Commercial Building Deduction

Mr. Hildreth:

alliantgroup has completed an Energy Efficient Commercial Building Tax Deduction study for Logan State Office Bldg. for Massaro Corporation. As required by U.S. Tax Code § 179D, notification must be given to the building owner regarding the energy efficient features of the building and the building's projected annual energy costs.

Below is a list of the energy efficient features of the building which were installed on or in the building as part of a plan designed to reduce the total annual energy and power costs in comparison to a reference building which meets the minimum requirements of ASHRAE (American Society of Heating and Refrigeration, and Air-Conditioning Engineers) Standard 90.1-2001.

Heating, Ventilation, and Air Conditioning Systems:

- Boilers
- Unit Heaters
- Chillers
- Energy Recovery Ventilation

Interior Lighting Systems:

- Fluorescent Bulbs
- LEDs
- Occupancy Sensors

Building Envelope System:

- Pre-Cast Panels
- Rigid Polyisocyanurate
- Gypsum Board

3009 POST OAK BOULEVARD, SUITE 2000 | HOUSTON, TEXAS 77056

www.alliantgroup.com | 800.564.4540

McKINLEY
ARCHITECTURE + ENGINEERING

Building 55 West Virginia State Office Complex



The projected annual energy cost for Logan State Office Bldg. was calculated to be \$34,231. Please note that the projected annual energy costs may vary from the building's actual energy costs due to the exclusion of process loads, exterior lighting, variations in occupancy, and variations in usage schedules among other variables.

Please be advised that the amount of the deduction that has been allocated to Massaro Corporation is \$98,658 for the building envelope, HVAC and hot water, and lighting systems in the building. For more information on the allocation of the section 179D deduction, please refer to the U.S. Tax Code § 179D and IRS Notice 2008-40. A copy of the notice can be found at www.irs.gov

If you have any questions, please do not hesitate to contact me.

Very truly yours,

Rizwan Virani
Managing Director



www.allinigroup.com | 800.564.4540

West Virginia Department of Health and Human Resources Office Building

Wheeling, West Virginia

Owner

WV Department of Administration:
Real Estate Division

Size

56,783 SF

Construction Cost

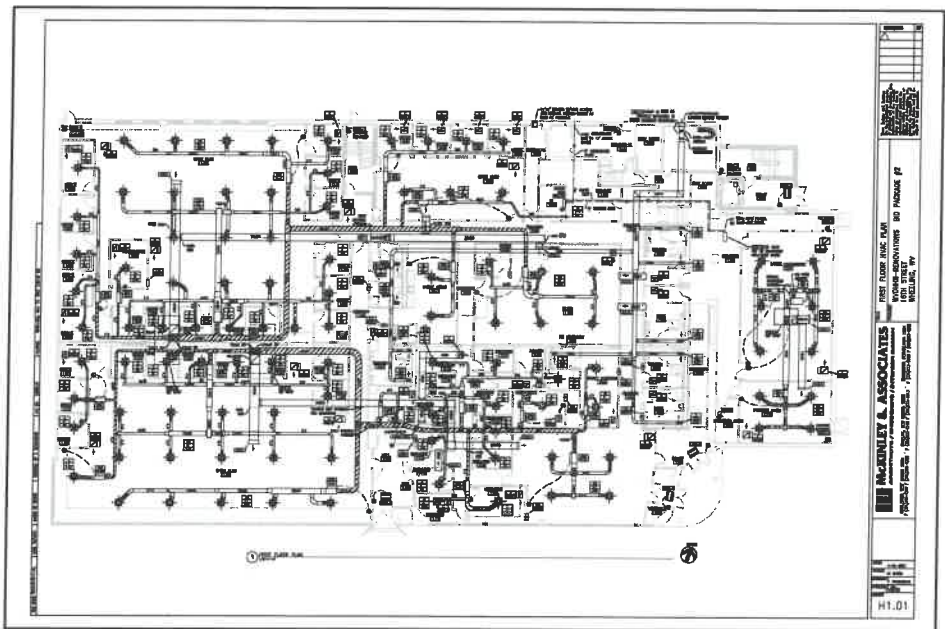
\$2 million

Project Architects-Engineers

McKinley Architecture and Engineering

Project Architect

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



We were asked by our client to **renovate/adaptively reuse** a car showroom and service area into an office building (now called the Mary Margaret Laipple Professional Building). The first floor fit-out includes space for the **West Virginia Department of Health and Human Resources' (DHHR) Ohio County office**. The 56,783 SF building was concrete and designed for cars; not people. The first challenge of the **renovation** was to remove a large ramp that connected two floors of the building and level the concrete floors. **We worked with our client to fit the DHHR's program into the space and maximize the use of the space.** We had to work around the existing structural walls and columns and provide fire escapes at the different floor levels of the floor structure. **The initial \$2 million fit-out project was built in three phases: the exterior was completed first (including new security doors, windows, skin, etc.), next the interior design and renovations including major HVAC**

/ mechanical and electrical systems to provide a state of the art facility for the DHHR's use, and then the parking lot and emergency exit fire stair tower so the project could be fast tracked to meet the Owner's 2013 move-in requirements. We worked with the local and state code officials to bring the building into compliance with the current building and fire codes and provide access to all of the occupied areas of the building. The fit-out was divided into three distinct spaces: secure office space, Client space, and training areas. There are dozens of individual offices, open office work areas, a large video conference room, smaller conference rooms, training rooms, interview rooms, and much more. The Office space is secured from the client area by an access control system.

The training space was designed to be stand alone for use by other State staff training. We provided a separate entrance for future tenants of the upper two floors and to keep the future renovation cost to a minimum. There are multiple entryways and doors, both interior and exterior, with different levels of security access. The showroom windows were mostly in-filled because of the sensitive nature of the materials in the DHHR's office, but windows high on the wall provide **natural daylighting.**



BEFORE
and AFTER



2 Open-Ended IDIQ Contracts

United States Postal Service

Appalachian Area (West Virginia & Virginia) and Erie/Pittsburgh District in Pennsylvania

Owner

United States Postal Service

Construction Cost

Multiple projects completed under 2
multi-year open-ended contracts

Project Architects-Engineers

McKinley Architecture and Engineering



McKinley Architecture and Engineering has had **2 separate multiple year open-ended IDIQ agreements with the United States Postal Service**. One is for the **Appalachian Area** [Indefinite Quantity Contract 360070-15-J-0095, which includes the State of West Virginia, and 49 counties and/or independent cities in Virginia], which was awarded on September 29, 2015, and is our **fourth consecutive** multiple year open-ended contract for WV. The second is for the **Erie/Pittsburgh District in Pennsylvania** (Indefinite Quantity Contract 362575-09-J-0232).

We have designed **dozens of facilities** for the USPS, including **new construction, additions, renovations, and rehabilitations** in numerous cities within these areas. We have completed studies, reports, general building renovations, HVAC and electrical systems improvements, utility infrastructure, roofs, elevators, building envelope improvements, and much more. **HVAC projects include commissioning, testing and balancing**. One recently completed example was a \$1.8 million **build-out / renovation project** for the Parkersburg Carrier Annex & Hub, which includes **new HVAC systems, testing and balancing, masonry wall, concrete work, exterior wall thermal and moisture protection, site concrete paving, etc.** In addition, we have designed over 100 Postal facilities for ADA compliance. We have also completed **Historic Preservation** work, such as extensive interaction with The Secretary of the Interior's (NPS) Standards for the Treatment of Historic Properties and working with the Section 106 process required by SHPO and the Federal Department of the Interior.

For the newest projects, they incorporate **energy efficient** design which follow the newest USPS Standards compliance to provide a **more efficient systems**. For example, **the energy saving on a recent HVAC replacement project was achieved with the use of economizers to allow free cooling when ambient temperatures are below 60° F, and there was commissioning provided on the RTUs. We followed the USPS Standards, and we also completed Form ECC-EZ - Energy Compliance Certification for Low Energy-Impact R&A Projects.**

A majority of the projects we have completed for the USPS over the past 20+ years have been various HVAC projects, including these recent examples which were all completed while the buildings remained occupied!:

- Altoona, PA Post Office - \$350,000 HVAC project involved Air Handling Units be replaced along with an addition of a DDC Control System in a historic 1931 facility.
- Charleston Processing & Distribution Center - \$375,000 HVAC renovation project involved replacing thermofusers and the ceiling fan coil units with 8 fan powered VAV boxes and 3 single duct VAV boxes with hot water reheat coils; replacing 3 failed rooftop units with new RTUs with electric heat and economizers; installing 2 new 5-ton mini split AC units in an area without cooling; and extending the existing DDC control system to control these new items.
- Clarksburg Finance Station - \$460,000 HVAC project involved the replacement of the outdated 120-ton water cooled chiller and two 107-ton cooling towers, with new energy efficient systems.

2 Open-Ended IDIQ Contracts

United States Postal Service

- Huntington Processing & Distribution Center - \$201,000 HVAC project replacing hot water boiler with like-in-kind.
- Martinsburg Processing & Distribution Center - \$280,000 HVAC project replacing 4 packaged rooftop units with new, like-in-kind, packaged rooftop units to bring the units in to USPS Standards compliance and to provide a more efficient system.
- Monongahela, PA Main Office - \$330,000 HVAC project replacing hot water boiler with 2 high efficiency condensing boilers in a historic 1913 facility; we recommended the most energy efficient solution that is life cycle cost effective over a 20-year period (with the upgrade from 83% to 95% efficient boilers the system operates more efficiently). While cutting the openings in the structural slab for the supply and return duct, the contractor created and/or noticed cracks; therefore we performed an emergency engineering site visit the next day on the condition of the concrete, provided a sketch for the required structural reinforcements, and the reinforcements were installed.
- Williamson Main Office - \$422,000 HVAC project replacing hot water boiler with high efficiency condensing boiler.



The Towers Building

Steubenville, Ohio

Owner

Jefferson County Commissioners

Size

76,300 SF

Construction Cost

\$6.1 million approx.

Project Architects-Engineers

McKinley Architecture and Engineering

Project Architect

Christina Schessler, AIA, LEED AP BD+C

Project Engineer

Tim E. Mizer, PE, RA, QCxP

We have worked with the Board of Commissioners of the County of Jefferson on several projects over the past few years, and currently have an engineering and architectural services open ended contract with them. One major project example is multiple phases of renovations and upgrades to **The Towers Building**. This is a **40+ year old, 8 story high-rise** in downtown Steubenville. Unusually cold weather, age, and the culmination of years of insufficient maintenance had resulted in a series of situations resulting in frozen pipes, systems shutting down, and continuing emergency maintenance issues in the building. In February 2014, due to primarily system malfunctions and weather related damages at the building, an overall building condition assessment was determined to be necessary by the Owner. Therefore, McKinley Architecture and Engineering was hired to perform an emergency Preliminary Analysis of the Needs and Energy Efficient Services (including site visits, and write a report outlining our findings). Existing conditions related to the architectural, mechanical and electrical portions of the building were the primary focus of the study with the goal of **addressing concerns associated with occupancy comfort, continued tenant satisfaction and to determine an efficient repair and maintenance recommendations for the building**. Our recommendations addressed repair options, efficiency and energy saving solutions. McKinley Architecture and Engineering's observations were conducted in a non-invasion fashion; essentially, this means that nothing was permanently removed or destroyed during the process. We completed a Building Condition Assessment and Energy Efficiency Analysis Report, and presented our findings.

After this, we have **designed multiple phases of renovations for the building**; a main roof replacement, mezzanine roof replacement and new lobby skylight, **building envelope repairs**, a new boiler, new ADA handicapped ramp, and an **overall HVAC replacement**. In addition, there was an adaptive reuse of a former bank on the first floor, into an office fit-out / renovations for the Jefferson County Board of Elections. **The construction was performed with the building in operation**. These projects were completed over time, with different General Contractors.

For one example, the **new boiler** project involved the replacement of existing inefficient electric boilers with a new gas fired boiler. The new boiler is **high energy efficiency**, and has a much **smaller footprint**.

The \$800,000 **exterior envelope repair** project required masonry-clean all precast panels, including remove and replace all joint sealant, precast column repairs to realign columns as closely as possible, attached new steel anchors, patch precast concrete where required, restoration of glazing system including new gaskets and anodized caps, and more.

The **\$3.4 million HVAC replacement** project included **renovations to the entire building**. The **demolition** included the removal existing cooling tower, exhaust fan, rooftop unit, and associated ductwork and piping from upper roof (tower); removal of existing exhaust fan and gravity ventilating intake hoods from lower roof (mezzanine); removal of basement air handling units, chilled water piping and pumps, condenser water piping and pumps, ductwork, chiller, and VAV boxes throughout the building. **The new HVAC system** included the installation of variable refrigerant flow system (VRF) throughout the building; installation of new dedicated outside air system (DOAS-1) on the upper roof (tower) and an air handling unit (AHU-1) in the basement with the condensing unit installed on the lower roof (mezzanine); installation of new and the reworking of existing ductwork; new shut-off and control valves installed on the existing hot water perimeter finned-tube baseboard; and installation of a new DDC Control system throughout the building. The electrical work included disconnecting existing power from demolished equipment and the installation of new circuits to the new equipment, which included adding a sub-panel on every floor. There was also partition extensions, ceiling removal and replacement, fire sealant work, and fireproofing repairs.



The Towers Building



BEFORE
& AFTER



BEFORE & AFTER



Brooke County Schools

Brooke High School HVAC

Wellsburg, West Virginia

Owner

Brooke County Schools

Size

278,000 SF

Construction Cost

\$5 million

Project Architects-Engineers

McKinley Architecture and Engineering

Project Engineer

Tim E. Mizer, PE, RA, QCxP

Contractor

R&B Mechanical, Inc.

For the **Brooke High School HVAC** project in Wellsburg, West Virginia, McKinley's role had originally included preliminary planning stages to secure a successful bond vote and state funding requests. Brooke High School HVAC is 1 of 2 projects within Brooke County Schools' \$36 million District-Wide Construction Program (funded with a \$18 million local bond vote passed in the November 2014 election, and supplemented with matching \$18 million from WV School Building Authority). We gathered data, analyzed, and performed services to help promote HVAC upgrades at Brooke High as well as a new Middle School. We worked on brochures and flyers to be distributed before the election, and provided evidence that this work is a solid investment; which helped aid in the successful Bond passage.

This **278,670 SF of HVAC replacement/renovations for Brooke High School** included **major HVAC/mechanical**, electrical, and plumbing engineering design, and associated architectural design. The vocational shops and science labs were brought up to Code. The design meets the 2012 International Building Code, 2012 International Mechanical Code, 2012 International Plumbing Code, 2011 National Electric Code (NFPA 70), and WV State Fire Code. The **\$5+ million** project involved the removal of the existing hydronic heat pump system equipment and replace such with a new Variable Refrigerant Flow (VRF) System, we replaced 19 Air Handling and ERV units with electric heating and cooling to gas units serving the required ventilation in the classrooms. There were approximately 200 VRF indoor consoles to replace floor mounted water source heat pumps. There were alteration and reconfigurations to the existing ceiling ductwork for the installation of the new VRF Units. There was also demolition of other existing equipment and material.

Furthermore, the HVAC replacement/renovation package also includes HVAC control modifications, exhaust fans, exhaust valves, louvers and gravity ventilators, grilles, register, and diffusers, new gas piping and painting, and electrical modifications. There was testing, adjusting, and balancing of the installed equipment. This project was designed with **energy efficiency** in mind; the VRF system to cool/heat the building has an anticipated energy cost reduction of 30% compared to existing mechanisms. The project was completed in September 2016. **The entire work was less than 1% in total non-elective change orders!**



Brooke County Schools

Brooke High School HVAC



BEFORE



& AFTER



BEFORE



& AFTER

Hilltop Elementary School



Sherrard, West Virginia

Owner

Marshall County Schools

Size

49,700 SF

Construction Cost

\$8.4 million

Project Architects-Engineers

McKinley Architecture and Engineering

Project Architect

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

Contractor

Grae-Con Construction

Commissioning Agent

Iams Consulting, LLC

The 49,700 SF Hilltop Elementary School didn't start out as a green school but the design intent was to incorporate good sustainable design practice. During design coordination with the engineering team members the energy model that was developed compelled the designers to reduce the chiller capacity and system design; thus reducing energy use while saving money. It was not until after construction had commenced that the Owner decided to submit for LEED Certification. This required a great deal of coordination with the architects, engineers, subcontractors and suppliers. A lot of time was spent researching LEED-approved furnishings, finishes, etc. to make the indoor environmental quality conducive to learning, and to minimize maintenance. Since we incorporated good sustainable design practices **from the beginning of design**, this allowed for an easy transition, and for the project to be successfully completed. **Hilltop Elementary is the first LEED Certified school in the state of West Virginia!**



For the LEED Certification, we received points for the HVAC system design and commissioning, such as Thermal Comfort Controllability, Design, & Verification, as well as Mold Prevention. The HVAC System consists of 3 Single Zone Packaged Rooftop Units and a Series of Fan Coil Units, having ventilation air provided by a Dedicated Outside Air Unit. The Packaged Rooftop Units have Electric Heat, DX Cooling, Enthalpy Controlled Economizer with CO2 Override (on the Cafeteria Unit) and Hot Gas Reheat for Dehumidification Control. Upon a space RH value above 60% the DX Cooling will be energized, and Hot Gas Reheat will be utilized to prevent overcooling of the space. We are also preventing elevated humidity by limiting the ventilation air in the seldom occupied spaces, with the use of CO2 control. Upon a CO2 level of 800 ppm, the outside air damper will modulate open. However, the majority of the time the ventilation air will be kept at a minimum, since the space is seldom used at full capacity, greatly limiting the humidity. The Maximum Calculated RH value for the Classrooms served by the Fan Coil Units is 60%. The ventilation air is delivered to the spaces through a Dedicated Outside Air Unit. The Dedicated Outside Air Unit includes a Total Energy Wheel. When the outside air humidity levels are elevated, the Energy Wheel will provide the first level of dehumidification. Based on the interior sensible loading, the reduced airflow and cooling supply air temperature, the resulting RH in the space will not exceed 60%.

We also received multiple other LEED points in areas such as: low-emitting materials, acoustical performance, daylighting & views, lighting system design, light pollution reduction, optimized energy performance, recycled content, regional materials, innovation in design, and much more. The School Building Authority's 2009 Limit on New Elementary School Design is \$217/SF, but Hilltop Elementary's final price is less than \$170/SF. This amount was well below the national average for elementary school construction, sustainable or not. Also, this project had less than 1% in non-elective change orders!

HES won a 2010 Gold Medal Green Building Award by Building of America. HES also won the 2012 West Virginia Department of Environmental Protection's Clean Energy Environmental Award. HES received the 2012 Black Bear Award for the Highest Achievement for the West Virginia Department of Education's Green Ribbon Schools program. In addition, in April 2012, Hilltop was one of 78 schools nation-wide to be awarded the first-ever U.S. Department of Education Green Ribbon Schools! Moreover, on Hilltop won a 2013 Placemaker Award for Leadership of/for Place from the West Virginia GreenWorks.



Ohio County Schools

Madison Elementary School

Wheeling, West Virginia

Owner

Ohio County Schools

Size

74,820 SF approx.

Construction Cost

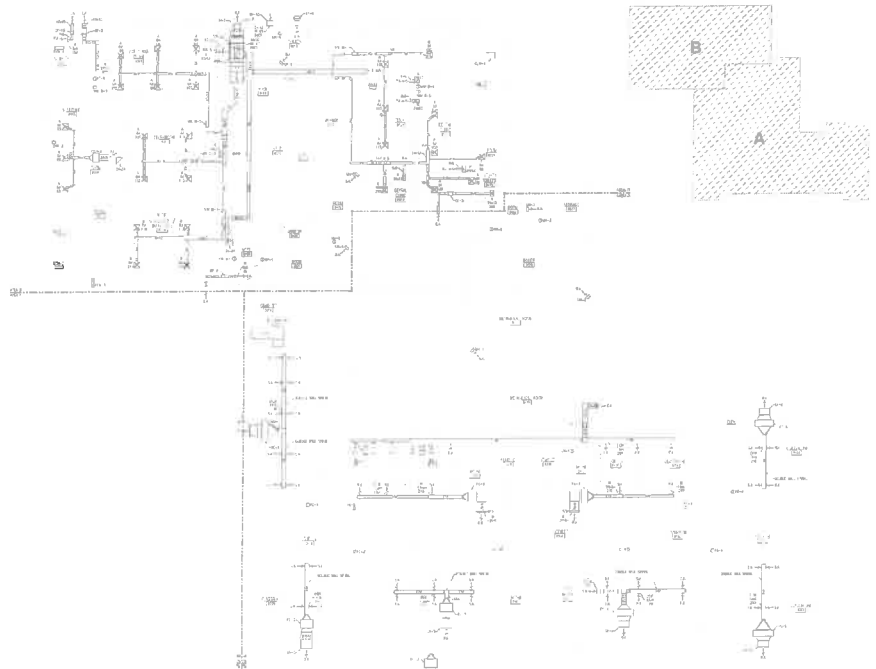
\$3.7 million

Project Architects-Engineers

McKinley Architecture and Engineering

Contractor

Climatech, Inc.



The **Madison Elementary School renovation** is one of our many projects we have completed for Ohio County Schools; our relationship has been **on-going since the 1980s**. The 74,820 SF school was built in 1916; it is now a Contributing Structure in the Wheeling Island Historic District on the National Register of Historic Places, so our design had to respect the State Historic Preservation Office standards.

The **HVAC replacement** was a major goal of the **\$3.7 million** project. The existing heating system consisted of steam radiators, served from a single steam boiler located in the basement of the school. The entire lower level of the school, including the boiler room was located below the flood plain. The only air conditioning in the building was provided by individual window AC units, and ventilation air was not adequate.



BEFORE
and **AFTER**

The renovations to the building included relocating the Boiler Room to the main level, to bring it out of the flood plain. This required structural reinforcement of the floor from below, installation of a concrete floor, sound dampening panels around the perimeter of the room, floor drains, and new lighting. The remainder of the **HVAC renovations** included the installation of Custom Air Handling Units with chilled and hot water coils, 2 high efficiency condensing boilers, pumps with variable speed drive control, Variable Air Volume boxes with hot water heating coils, packaged Rooftop Units and Direct Digital Controls. In order to hide the new ductwork and piping we also installed new acoustic tile ceilings with high efficiency, dual switch lights. The Air Cooled Chiller also needed to be elevated above the flood level, so a structural platform was installed with an integral sound wall, so the chiller will not be seen or heard. There was also HVAC testing, adjusting, and balancing, as well as performance commissioning. **The renovations were partially completed while school was in session. The project involved a lot of coordination with the State Fire Marshal.**



Southern WV Community & Technical College

Williamson Campus

Williamson, West Virginia

Owner

Southern WV Community & Technical College

Size

60,000 SF

Construction Cost

\$763,635

Project Architects-Engineers

McKinley Architecture and Engineering

Contractor

Elco Mechanical Contractors, Inc.

For the HVAC portion of this \$763,635 Southern WV Community & Technical College project, which is an American Recovery & Reinvestment Act of 2009 (ARRA) grant project, we expanded the existing digital controls system to incorporate new equipment. Duct and grille modifications were made to correct insufficient airflows within the system. Reheat coils were added to provide proper separation of HVAC zones. In addition, a 13 ton rooftop unit, a 23,500 cfm supply fan, and a return fan were replaced. Due to the restrictions from the funding source, the project was designed in a shortened timespan. The building included multiple construction types and multiple HVAC systems. The budget did not allow for a complete renovation to the HVAC, so McKinley Architecture and Engineering identified the problem areas, prioritized them, and designed solutions. The end result was occupant comfort in all areas of the building for the first time in many years. In addition, corrections made to the supply and return fan corrected a building structural vibration issue.

The Owner was also experiencing water penetration in several areas of the 60,000 SF facility; **due to our findings during the HVAC renovations**, it was decided to replace the roof. A new, built up roof system was installed, replacing the worn and over extended ballasted system. Special consideration was given to flashing in areas of unique design. Moreover, the 8,664 SF roof replacement project was designed, specified, bid, awarded and constructed in 8 weeks. The Owner had a very tight timeline due to funding restrictions placed by the federal government. This project was successful in part due to our relationship, developed prior to the project's inception, with the roofing consultant. This relationship allowed McKinley Architecture and Engineering to develop clear and concise estimates for the Owner to determine what product best suited their situation and needs, as well as bring in a viable number on bid day.



Southern WV Community & Technical College

Wyoming/McDowell Campus

Saulsville, West Virginia

Owner

Southern WV Community & Technical College

Size

22,800 SF

Construction Cost

\$293,700

Project Architects-Engineers

McKinley Architecture and Engineering

Contractor

Elco Mechanical Contractors, Inc.



This \$293,700 HVAC renovation project included the replacement of a 75 ton rooftop unit, including duct modification, roof work, crane, electric, piping, and more. Also involved was the replacement of a boiler plant with a new high efficiency plant, including 2 condensing boilers, 2 pumps, breeching, concrete pads, and hydronic accessories. In addition, a new DDC controls system was installed and custom programming was written for this 22,800 SF project. Due to the restrictions from the funding source, the project was designed in a shortened timespan. We reduced the energy usage for the building by installing high efficiency equipment and controlling the entire HVAC system via custom programming that utilizes energy saving techniques.



and AFTER



Raleigh County 911 and Emergency Operations Center HVAC

Beaver, West Virginia

Owner

Raleigh County Emergency Services Authority

Size

12,855 SF

Construction Cost

\$250,000

Project Architects-Engineers

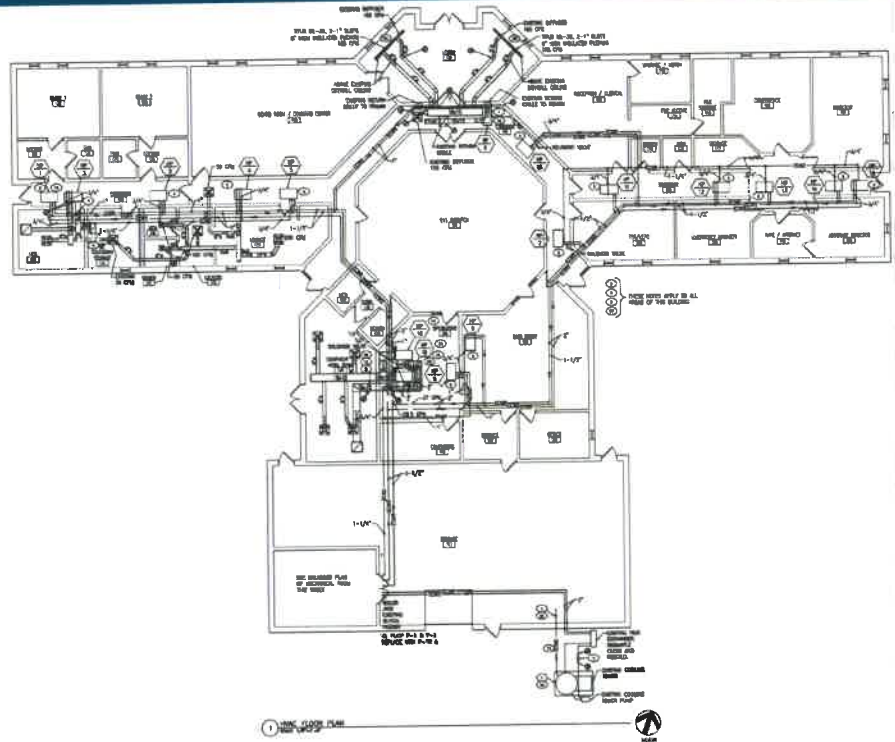
McKinley Architecture and Engineering

Project Manager

Tim E. Mizer, PE, RA, QCxP

Contractor

Pennington Plumbing & Heating



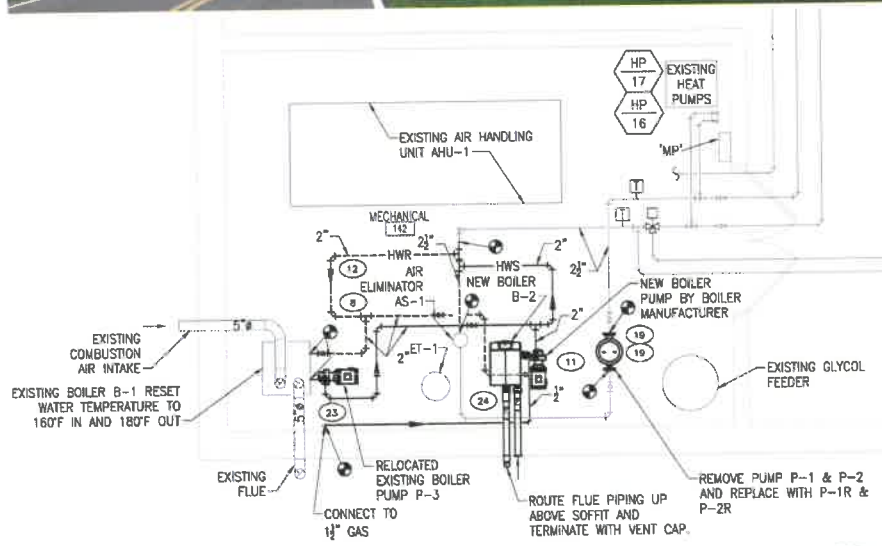
McKinley Architecture and Engineering was commissioned to investigate and provide Construction Documents to repair the ill-functioning HVAC system in the Raleigh County Emergency Services Authority's office building (911 Center and Emergency Operations Center).



Upon investigation of this 13,000 SF facility, it was determined that many of the heat pumps were undersized within the 911 Center's most critical areas (such as the Dispatch Room). More importantly, it also was determined that the building was not constructed architecturally as designed and this deficiency greatly influenced the total building's HVAC system's performance.

Since the facility is a 911 Center, it must remain in operation 24/7; therefore, the pumps were replaced one at a time so that the building could stay in operation, while the building remained occupied.

In addition to HVAC renovations, the project also includes associated electric work, miscellaneous interior renovations and insulation work.



2 ENLARGED MECHANICAL ROOM PLAN
SCALE: 1/4"=1'-0"

