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WV PURCHASING  
DIVISION



**Expression of Interest**  
**Architectural/Engineering Services**  
**West Virginia Department of Natural Resources**  
**New District VI Complex**  
**CEOI 0310 1900000010**

**April 30, 2019**

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April 30, 2019

Brittany E. Ingraham  
Department of Administration, Purchasing Division  
2019 Washington Street, Est  
Charleston, WV 25305-0130

Re: Statement of Qualifications for CEOI 0310 DNR 1900000010

Dear Ms. Ingraham:

**Omni Associates-Architects** is pleased to submit our Statement of Qualifications to provide architectural and engineering design services for the new District VI Office Complex for the WV Department of Natural Resources in Parkersburg, WV.

We are a West Virginia company with six (6) Registered Architects and four (4) LEED Professionals. Although we are licensed to practice in eleven (11) States, we have maintained just one office location in Fairmont since our inception in 1980. We believe that our experience with similar projects combined with our ability to provide a high quality, value-based product will prove an invaluable asset to this project.

Omni offers a diverse design portfolio with extensive experience in government & military buildings, commercial office, health care, retail, education, entertainment, and recreation. We are known for exceptional designs and for providing creative solutions that exceeds the expectations of our clients' needs and desires. However, what we are most proud of is a repeat client rate of over 90%. Fostering relationships, collaborating and **designing with rather than for our clients** is what we truly enjoy.

In addition to **Omni Associates, H.F. Lenz Company, Barber & Hoffman, Inc.** and **Civil Environmental Consultants** have been included in the project team. We share a long history of successful project collaboration with these team members and each has been selected for their specific relevant project experience. We are a proven team uniquely qualified to offer you the following advantages:

- Innovative cost saving design approach to minimize building costs;
- Sustainable energy efficient systems to minimize operational costs;
- Flexible building design to address current and future needs;
- A realistic design and construction schedule to meet your needs.

Thank you for giving us the opportunity to present our credentials. We would greatly appreciate the opportunity to meet with the selection committee to further discuss our experience and qualifications.

Best regards,  
OMNI ASSOCIATES – ARCHITECTS, INC.

A handwritten signature in black ink that reads "John R. Sausen" followed by a stylized monogram "AS".

John R. Sausen, AIA, NCARB, LEED BD+C  
Senior Principal



## Firm Profile

**OMNI ASSOCIATES - ARCHITECTS** is an award-winning architectural firm located in Fairmont, West Virginia. Our approach to design has allowed us to avoid the confines of specialization and afforded us the opportunity to create a diverse body of work.

Since the beginning in 1980, Omni has earned recognition for the programming, planning, and design of a variety of structures; which includes corporate office and governmental buildings, health care facilities and medical campuses, academic and educational buildings, recreational, religious, military and multipurpose facilities.

Our reputation and superior work product are the result of efficient and effective communication with our clients and consultants.

Each project is a unique undertaking that begins with analyzing the needs and desires of the client, and interpreting them into a distinctive design that exceeds expectations.

Omni has a successful history of designing intimately with each client and creating collaborative solutions that meet the project goals, resulting in an impressive record of customer satisfaction. These qualities that draw our clients back, resulting in lasting relationships.

Omni Associates provides clients with the results they value most: Innovative designs consistent with the building program, cost effective designs which meet the budget, and efficient project management to provide on-time deliverables.

We're proud of our reputation and expertise, and our clients are confident that they will receive superior services.



## Overview of Services

**OMNI provides comprehensive, in-depth professional architectural services for new construction, renovation, addition, and adaptive reuse utilizing a variety of delivery methods to best serve our clients' needs.**

### **Design-Bid-Build Delivery Method**

Omni has performed private and public projects of every building type using this traditional method of project delivery. We organize the entire project in advance of bidding and work extensively with our clients to achieve alternates to program goals. Construction documents are prepared and bid to multiple general contractors to achieve competitive pricing. Our advanced preparation and communication with the owner and contractor has been a proven approach to limiting change orders and allows us to deliver projects on-time and on-budget.

### **Fast Track and Multiple Prime Delivery Method**

To achieve an accelerated building construction time schedule, Omni has experience with both fast-track and multiple-prime contract projects. As a variation of the traditional design-bid-build delivery, the negotiated select team approach allows for selection of a contractor early in the design process. We prepare construction drawings in stages and bid these "parts" of the total building program so construction can be ongoing as the next phase is programmed and designed. We have worked with General Contractors, Construction Managers and multiple prime subcontractors to successfully complete this type of project delivery.

### **Design-Build Delivery Method**

Owners and developers are currently seeking a simpler delivery style with a single point of responsibility for both design and construction. Under design-build, a consolidated entity provides both design and construction services to the owner. A single contract is established between the owner and the architect-contractor or design-builder. Omni has experience with both scenarios as well as contracting with owners and general contractors to successfully achieve this streamlined method of project delivery.

### **Construction Administration**

Omni has worked on projects for the construction phase of the total building life. This would include projects designed by a another firm who needs local supervision or a pre-designed project from a national restaurant or store - which requires local Implementation. Omni has also performed bank or financing inspections to determine the completion status of the project for periodic applications for payment.



## Technical Expertise

Upgrading existing technology and utilizing the latest design tools available is a key component of our business model. Technology facilitates innovative design, results in economic benefits for our clients, and enhances communication with clients and consultants.

### BIM: Building Information Modeling

In 2006, Omni Associates began the transition from traditional CAD software to Autodesk® Revit® Building Information Modeling (BIM). We immediately recognized the basic benefits to both designers and owners: more efficient, cost-effective project delivery, and an accurate building model that can later assist in both energy analysis and building management.

Omni implemented the use of BIM as our primary software platform for all projects in 2006. In utilizing BIM, we discovered the real depth of its value.

With a virtual model of the building, clients can clearly see the design intent as the project progresses and design options can be explored with greater ease than ever before.

Sharing the model among all disciplines as the design progresses allows early input from all of the design professionals involved, resulting in efficient designs.

Creating a building in the virtual world before constructing it in the real world allows the design team to anticipate conflicts and objections before they arise, eliminating many issues which could result in project change orders or Requests For Information from the contractor.

Omni is proud to show that we do not just use Revit software, but we are adept at utilizing it, and can provide skilled support as needed. Omni Pro

ject Manager, Reuben Losh is now an Autodesk Revit Architecture 2011 Certified Associate. Mr. Losh plans to test soon for the next level of certification, Autodesk Revit Architecture 2011 Certified Professional.



## Management & Staffing Capabilities

We firmly believe that the best gauge in determining our performance and abilities is the quality of the personnel of which we are comprised. Omni's greatest resource is our professional staff of dedicated, experienced, and creative individuals.

Our skilled team includes 6 registered architects, intern architects, computer-aided design specialists, an interior designer, and knowledgeable administrative support staff. Their quality, expertise, and dedication integrate to produce the solid foundation upon which Omni has built its reputation.

OMNI organizes its staff into several teams or "studios." A specific project team is established for each commission. Studio resources are combined for larger projects. Younger staff members bring a fresh perspective and gain valuable knowledge under the guidance of more experienced staff. Utilizing this approach, we are able to provide the human resources required for all types of projects, including large and complex projects.

The project team, including the principal-in-charge, actively participates in the project from start to finish. The same professionals who develop an understanding of your needs in programming generate design alternatives, oversee the production of construction documents, and implement the concepts during construction. The consistency afforded by this approach is a benefit to OMNI and you.

In reality, the OMNI project team goes beyond

our in-house staff. It includes consultants, client representatives, owners, and a construction manager, as required. It is the mutual respect of each team member's skills and perspectives that enables the design process to conclude with a successful project of which we all can be proud.

### Specialized Team Members

Throughout our years of experience, we have worked with a variety of consultants specializing in structural engineering, civil engineering, mechanical and electrical engineering, and other disciplines as each project dictated. You can be assured that the consultants we select for your project are selected for their particular and relevant expertise as well as their superior work ethic.

In short, we carefully staff the design team, including in-house professionals and outside consultants, with the type of personnel we would want working for us to work for you.



# Staffing Plan

## Key Personnel

**Omni Associates – Architects** carefully selects its project team based on each member's ability to add directly-related experience, ensuring our ability to meet the specific challenges and goals of each client

### **Omni Associates—Architects**

**JOHN R. SAUSEN, AIA, NCARB, LEED AP**

#### *Principal In Charge*

Mr. Sausen has been Project Architect in charge of design and construction for Omni Associates – Architects since 1984. As a Principal-in-Charge and Project Architect, Mr. Sausen's primary responsibility is to develop the overall concept of design by performing technical tasks which include: Project space programming; Schematic layout of functional spaces; Aesthetic design and development; Concept and coordination of building systems such as mechanical, electrical, plumbing and fire protection; Preparation of bidding documents and material specifications; Project management and Construction administration.

**JASON M. MILLER, AIA, NCARB**

#### *Project Architect*

Mr. Miller is one of Omni's most talented and creative designers with extensive experience with the preparation of construction documents, bidding documents, and material specifications as well as construction administration. He has demonstrated his skill and success in such notable projects as the West Virginia Army National Guard Readiness Center in Buckhannon and the Charleston Professional Building, a federal GSA building.



## John R. Sausen AIA, NCARB, LEED AP

**Project Role:** Senior Principal in charge, Design Architect

**Project Responsibilities:** Principal-in-Charge of design and construction for Omni Associates since 1983. Responsible for coordinating and designing all aspects of a project from schematic design through final completion of construction. Specializing in Design-Build. Worked for three months in 1981 for Kraemer, Sieverts & Partners, Braunschweig, West Germany on an office, residential and civil defense complex for the Ministry of Interior, Kingdom of Saudi Arabia. The complex was to be of pre-cast metric. The design was to be flexible enough for construction in six different cities. Interned with architectural firms in Ohio and West Virginia prior to joining Omni.

### **Achievements and Awards:**

President of American Institute of Architects - West Virginia Chapter in 2000 & 2001. Worked with the Design Awards, Search for Shelter, Architecture for Kids, Livable Communities Committees. Has served on the AIA West Virginia Board of Directors from 1990 to present.

Instructor of Architecture at Fairmont State College, Fairmont, West Virginia - part time to 1990. Responsible for the instruction of design and construction relationships.

Boy Scouts of America, Mountaineer Area Council merit badge counselor, building committee member and Eagle Scout Chairman.

Achieved the rank of Eagle Scout and has been involved with Scouting for over 20 years.

### **Years of Experience**

Joined Omni in 1983

### **Background**

Bachelor of Architecture:

University of Cincinnati, 1982 (Magna Cum Laude)

### **Select Project Experience**

#### **Mylan Pharmaceuticals—Morgantown, WV**

North Expansion—500,000 sf

Executive Corporate Offices

#### **Fairmont Regional Medical Center- Fairmont, WV**

Life Safety Study

Pharmacy Feasibility Study

Long Term Healthcare Hospital

#### **CDC/NIOSH—Morgantown, WV / Pittsburgh, PA**

Building Renovations

Infrastructure Studies

Safety and Security

Mine Rescue and Escape Lab

#### **West Virginia University—Morgantown, WV**

Child Learning Center

Building Renovations

Facility Upgrades

White Hall Lab

Blanchette Rockefeller Neurosciences

Institute Laboratory Fitout

#### **West Virginia University Hospitals- Morgantown, WV**

North & Northeast 8 story addition

Cheat Lake Family Medicine Clinic





**Adam L. Rohaly, , AIA, NCARB**

**Years of Experience**

Joined Omni in 2007

**Background**

Master of Architecture: Virginia Polytechnic Institute, 2004

**Select Project Experience**

WVU Medicine Morgantown South

West Virginia Army National Guard Armed Forces Readiness Center

Charleston Federal GSA Building

West Virginia University Blanchette Rockefeller

Neurosciences Institute

West Virginia University Child Development Center

Morgantown Utility Board Renovations

West Virginia High Technology Consortium

NASA and National White Collar Crime Fit Outs

University Health Associates MRI Addition

Sundale Palliative Care Center Addition

Atlas Chiropractic Center

Timberbrook Townhomes

Starbucks / Chipotle @ University Town Center

Grant Avenue Apartments

Pro Performance at University Place

Assisted Living at White Oaks

WVU Agriculture Science Meat Processing Lab

**Project Role: Project Manager, Design Architect**

**Experience:** Became a Principal Architect in 2015. Seven years' experience as an intern architect with comprehensive knowledge of project management from programming through construction administration. Architectural practice has included diverse project types including educational facilities, government and military facilities, office buildings, health care facilities, commercial design, multifamily and single-family housing, and custom fabrication.

**Achievements and Awards:**

Leadership Marion XXX (2011—2012)

Adjunct Professor at Fairmont State University teaching Advanced Architectural CAD as well as Design classes.

Board of Directors of Monongalia Arts Center

Assisted Habitat for Humanity of Morgantown to develop potential low income housing strategies.

Awarded Outstanding Thesis Award - 2004: Virginia Tech faculty.

**Registration and Professional Affiliations**

American Institute of Architects, Member

American Institute of Architects—West Virginia, Member

National Council Architectural Registration Board

U.S. Green Building Council, Firm Membership

Associated Builders and Contractors Inc., Firm Membership



# Staffing Plan

## Key Personnel (cont'd)

### **H.F. Lenz Company**

*Mechanical, Electrical, Plumbing*

*And Fire Protection Engineering*

Currently in its 70th year, the H.F. Lenz Company (HFL) is a nationally ranked multi-discipline engineering firm with a strong commitment to technical excellence and unparalleled customer service. From planning and design through commissioning and operations support, we work with our clients to find the best solutions that meet current needs while providing the flexibility and scalability to accommodate future growth and new technologies. Today the firm employs 165 individuals working out of our Johnstown-based headquarters and satellite offices in Pittsburgh, Pennsylvania, Conneaut, Ohio, and Middletown, Connecticut.

### **Joel C. Shumaker, P.E., CBIE, LEED AP**

*Principal in Charge*

Mr. Shumaker is experienced in the design of electrical systems for both new buildings and building renovations. He brings vast experience and knowledge in the design of power distribution systems, emergency power systems and monitoring, uninterruptible power supplies, and emergency lighting systems.

systems Additional information on each team member is available in the resume section of this submission.

### **John Weiland, P.E. CEM, LEED AP**

*Mechanical Engineer*

Mr. Weiland specializes in the design of HVAC systems for office buildings and large facilities and institutions. His duties include design calculations, equipment selection, schematic and construction document design, specification writing and life cycle cost analyses.

### **Steven P. Mulhollen, P.E.**

*Electrical Engineer*

Mr. Mulhollen is experienced in the design of power distribution systems, control systems, emergency power systems, lighting and emergency lighting systems, fire alarms systems, security, sound and telecommunications for correctional, educational, military, governmental, industrial and health care facilities.

### **Gregory D. Rummel, CPD**

*Plumbing/Fire Protection Designer*

Mr. Rummel has designed complete plumbing and fire protection systems for colleges, office buildings, military installations, prisons, hospitals, and industrial facilities. He is extremely knowledgeable of NFPA Codes and experience in the design of dry and wet systems.



## Staffing Plan

### Key Personnel (cont'd)

#### Civil Environmental Consultants

##### Civil & Geotechnical Engineering

Civil & Environmental Consultants, Inc. (CEC) provides comprehensive market-oriented consulting services that advance client strategic business objectives. Consistently ranked among the Top 500 Design Firms and Top 200 Environmental Firms by Engineering News-Record, CEC is recognized for providing innovative design solutions and integrated expertise in air quality, civil engineering, ecological sciences, environmental engineering and sciences, survey/geospatial services, waste management, and water resources.

##### Steve Cain, PE—Senior Principal

Steve has more than 27 years experience in civil design and project management encompassing all aspects of civil engineering. Most recently, he was the Project Manager for the Menards home Improvement Store project on Emerson Drive in Parkersburg, WV.

##### Thomas Adams, PE—Project Engineer

Tom has extensive project experience as a project engineer and project manager with specific experience in stormwater management, erosion and sediment control. Tom also has an excellent understanding of construction cost estimating, permitting requirements and bid document preparation.

##### Kow Eshun, PE—Geotechnical Engineer

Kow has worked on a wide range of subsurface investigations over his ten years with CEC. His work provides recommendations for foundation systems, earthwork, and ground improvement techniques.

##### James Christie, PLA—Senior Project Manager

Jim is responsible for complete project management, but also serves the project by providing site layout, and landscape architecture, drawing on his 20+ years of experience.

##### Barber & Hoffman, Inc.

##### Structural Engineering

Barber & Hoffman has been specifically selected to serve as the Structural engineering consultant on the team.

##### Mike Miller, P.E.

##### Principal in Charge

Mike has over 25 years of experience in performing structural building assessments and the design of structural building components. Mr. Miller shares Omni's collaborative design approach philosophy, which allows for unique, but practical solutions.

*Additional information on each team member is available in the resume section of this submission.*

**twin falls resort state park**

mullens, west virginia  
 west virginia department of natural resources  
 23,000 square foot expansion

construction cost: \$7.3 million  
 27 additional rooms

new guests services, main lobby,  
 indoor pool, fitness area, and courtyard  
 improved gift shop and enlarged conference rooms.



**Twin Falls Resort State Park  
 Lodge Addition and Renovations**



**about...**

Omni Associates – Architects was selected by the West Virginia Division of Natural Resources Parks and Recreation Division to design a new wing adjoining the Twin Falls Resort State Park lodge. According to Twin Falls State Park Superintendent Scott Durham, the changes at Twin Falls mark the park’s maturing and coming into its own. "The architects have done a wonderful job putting together two dramatically different styles and preserving both."

With the expansion project, the guest capacity has more than doubled, from 20 to 47 rooms. Other changes include a new courtyard, a transformed lobby, an indoor pool and fitness area, an improved gift shop, and enlarged conference rooms. Accessibility was also a design considera-



**visualization realization**

omni associates — architects



## twin falls (cont.)

tion. Although the original structure's multi-tiered steps present an obstacle for some guests, the new wing is fully accessible. The entrance to the new addition is on the same level as the restaurant and primary conference area, and an elevator provides easy access to other floors.

Although the new lodge is different architecturally, Omni Associates aimed to ensure it was compatible with the original. In 1967, Walter Gropius, the father of modern architecture, led The Architects Collaborative (TAC) in the design of the lodges at Twin Falls Resort, Hawks Nest, and Pipestem Resort state parks. The modernist style eliminates ornamentation and uses steel, glass, and concrete. The original Twin Falls lodge has a flat roof and box shape, while the new addition has a more Alpine appearance, with a peaked roof and exposed timbers. The original building was not altered in this expansion, except where the two sections join. Matching brick was used in the new structure for continuity between the two buildings. The original lodge's architectural details, such as railings and windows, harmonize with those elements in the new structure.

Following the park's tradition of using names from nature to identify its structures, the original Twin Falls lodge is now designated as the Monarch wing, after the state butterfly. The new addition is the Cardinal wing, after the state bird.

www.omniatl.com

visualization realization

omni associates—architects

**West Virginia State Office Complex**  
Fairmont, West Virginia

**Contact:**

Mr. Robert P. Krause, PE, AIA  
WV General Services Division  
1900 Kanawha Blvd. East  
Building 1 Room MB-60  
Charleston, WV 25305  
304-558-9018



**West Virginia State Office Complex**

**about . . .**

Omni Associates—Architects was selected by the West Virginia General Services Division to provide full architectural and engineering services for a new state office building located in downtown Fairmont.

It was important that the new building fit within the context of the downtown area's historical buildings while reflecting an era of progress and new growth. To that end, the building's exterior features traditional brick and cast stone masonry integrated with insulated formed metal panels and an aluminum curtainwall.

The building will be occupied by eight state agencies and include offices for the Secretary of State. Programming services included interviews of the individual agencies to determine the specific requirements of each. Interior fitouts include a variety of user-specific spaces including training rooms, interview rooms, waiting areas, individual offices, large open offices, break rooms, and kitchenettes.

Omni also provided all necessary surveying of the site, and all existing infrastructure systems and material to determine appropriateness for construction. Pre-construction services also included the verification, coordination, and documentation of extensions, tie-ins, and relocations of all utilities as well as an extensive demolition package released prior to the new construction package.

In addition to compliance with all applicable local, State, and Federal regulations as well as ADA requirements, the Owner requested that the building be designed with the goal of achieving LEED™ Silver certification. Current calculations suggest the project could achieve LEED Gold



**visualization realization**  
omni associates—architects

[www.omni411.com](http://www.omni411.com)



**canaan valley institute research and education facility**  
*davis, west virginia*

estimated construction cost: \$8,000,000  
28,866 square feet



## Canaan Valley Institute Research and Education Facility



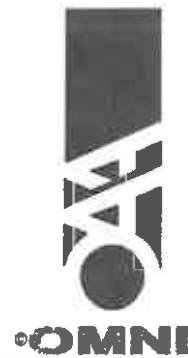
### about ...

Canaan Valley Institute's 28,866 square feet headquarters and education facility located in Davis, West Virginia serves as a center for research into water and wastewater issues. In accordance with their mission of improving the environment by improving water quality, Omni Associates was commissioned to develop a "green" building that demonstrates environmentally friendly systems to visitors and its users. The \$8 million facility utilizes a number of "green" technologies, including a Living Machine system, a wastewater treatment system that uses plants and soils to clean the wastewater. Other "green" features include natural lighting and ventilation, a green roof, composting toilets, and rain water collection ponds.

[www.omni411.com](http://www.omni411.com)

# visualization realization

omni associates—architects



## canaan valley institute (continued)

The building was designed to blend with the existing landscape and utilize locally sourced, recycled, and sustainable construction materials as well as building design technologies that substantially improve indoor air quality. The building houses several research and training laboratories, outdoor classrooms, a computer lab, office space and a 150 seat conference room. It is among the first conference facilities in West Virginia to achieve Silver LEED™ Certification.



### LEED Silver

- Micro-turbines
- Living Machine
- Natural ventilation
- Green roof
- Rain water collection ponds

The "LEED® Certification Mark" is a registered trademark owned by the U.S. Green Building Council and is used with permission.

*"Building Green is more than obtaining LEED Certification. The team of Omni and Manheim (General Contractor) truly listened to CVI's unique vision of sustainable design, and developed a project that brought that vision to life. Their synergy and willingness to become our partner, provided a constant focus on quality, cost, and schedule."*

**Kiena Smith**  
Executive Director  
Canaan Valley Institute

visualization realization

omni associates—architects





grand vue park  
moundsville, west virginia  
marshall county parks & recreation

- phase I  
master plan
- inventory of existing spaces
  - visioning and programming
  - well pad impact analysis
    - conceptual planning
    - final master plan

- additional services
- schematic design of vertical amenities
  - 3d color renderings

phase II  
implementation of master plan

## Grand Vue Park



### about . . .

Grand Vue Park park sprawls out over 650+ acres with vast views into the Ohio River Valley. Park leaders have branded the park as a relaxing family getaway and a high adventure haven, building off the heights and views of the natural landscape.

This project began with a Phase I master planning and feasibility study for the existing park. As a direct result of the Phase I study, the park chose Omni Associates to move forward with two specific projects. The expansion of the high adventure activity zone and the addition of new treehouse cabins nestled among the foliage at the ridge line providing guests with a unique lodging experience. Omni provided both architectural and interior design of the treehouses, which feature beautiful views among the trees in Marshall County, a hot tub, full kitchen, comfortable bedrooms and bathrooms, and a large living room with HDTV.

The design challenge throughout the park was to achieve a functional, economical solution that conveys the distinctive theme that can only be found at Grand Vue Park.

visualization. realization  
omni associates—architects

www.omni411.com





mon health  
heart & vascular center

about ...

Mon Health Elkins is an approximately 7,700 sf facility located in Elkins, West Virginia. The building serves as the primary cardiovascular clinic for the Mon Health System in the central area of the state. There are 12 exam rooms, a full cardio rehab gym, stress, ultrasound and echo lab and flexible space to house a future nuclear treatment component. It is considered to be a Business Occupancy classification but several more stringent healthcare standards were considered and incorporated to meet the client's needs. Along with thoughtful layout encouraging efficient employee work flow, the design is focused on patient experience and includes a warm interiors package with local artwork. The building exterior consists of low maintenance claddings and creates pedestrian friendly scale and aesthetic design to conform with the Building Covenants and Standards for the Elkins Railyard.

www.omni411.com



**ADDENDUM ACKNOWLEDGEMENT FORM**  
**SOLICITATION NO.: CEOI DNR19\*10**

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

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

**Addendum Numbers Received:**

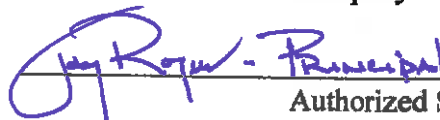
(Check the box next to each addendum received)

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

I understand that failure to confirm the receipt of addenda may cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Omni Associates - Architects

Company



Authorized Signature

April 29, 2019

Date

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

Revised 6/8/2012



## H.F. Lenz Company

H.F. Lenz Company was established 1946 in its present form, under the name H.F. Lenz Company, R.E., and in 1953 the company was incorporated, as a Private Corporation, in Pennsylvania as H.F. Lenz Company. Our projects span the nation, with the heaviest concentration in the Northeast, and exceed \$530 million in MEP, Civil and Structural construction annually. Each market sector—corporate, government, health care, education, and industry—is served by a team of specialists who understand the unique needs of the clients they serve. Our staff consists of 150 individuals, including 50 Licensed Professional Engineers and 17 LEED Accredited Professionals. Our headquarters is in Johnstown, Pennsylvania with branch offices in Pittsburgh, PA, Conneaut, OH, and Middletown, CT.

### Johnstown Headquarters

1407 Scalp Avenue  
Johnstown, PA 15904  
Phone: 814-269-9300  
Fax: 814-269-9301

### Pittsburgh Office

1051 Brinton Road  
Pittsburgh, PA 15221  
Phone: 412-371-9073

### Ohio Office

322 State Street  
Conneaut, OH 44030  
Phone: 440-599-7800  
Fax: 440-599-7801

### Connecticut Office

101 Centerpoint Drive  
Suite 237  
Middletown, CT 06457  
Phone: 860-316-2124

### DISCIPLINES/SERVICES OFFERED IN-HOUSE INCLUDE:

- › Mechanical Engineering
- › Electrical Engineering
- › Data/Communications Engineering
- › Fire Protection / Life Safety Engineering
- › Structural Engineering
- › Civil Engineering
- › Surveying
- › GIS
- › Construction Phase Services
- › Commissioning and Training
- › 3D CADD with Full Visualization
- › Energy Modeling
- › Sustainable design/LEED Services
- › Building Information Modeling (BIM)

### LEED®

Our firm has been a member of the U.S. Green Building Council since 2000 and we currently have 17 LEED® Accredited Professionals on staff. Our experience includes 80+ projects that have attained various levels of LEED Certification and numerous additional projects designed for various levels of LEED Certification, in total over 16 million sq.ft. of facilities.

### WHY H.F. LENZ COMPANY?

Office buildings - both renovated and new, are the H.F. Lenz Company's forte. Our diverse experience includes numerous projects for corporate headquarters facilities. Evidence of this experience is demonstrated in the following overview of relevant office projects that have been awarded in the past five years. This list does not include our larger office building renovations and new construction projects. Over 85 percent of our work consists of repeat commissions from clients who appreciate our responsive, value-added service.





## State of West Virginia

Clarksburg, West Virginia

### CLARKSBURG STATE OFFICE BUILDING

H.F. Lenz Company provided the mechanical, electrical, plumbing, fire protection, and telecommunications engineering services for the design of a new 85,250 sq.ft., five-story office building to house seven West Virginia state agencies.

The HVAC system utilizes a chilled water system with ice storage to save energy costs. The majority of the building is served by three VAV modular air handling units located in the building penthouse. A Direct Digital Control (DDC) System provides the control for the HVAC system. The system interfaces with the current system that the State of West Virginia uses to monitor its buildings from a remote location in Charleston, WV.

Lighting relay panels provide 24/7 control of the lighting in the larger areas on the various floors. Relay panels are installed on all floors except the basement. Vacancy (Occupancy) sensors are installed in all areas not described above to provide automatic shut off lights. In areas subject to larger amounts of natural light, daylight harvesting sensors are placed near windows to step-dim (reduce light output to 50%) local light fixtures in response to amount of sunlight present within the space and save energy.

A Main Telecommunications Room (MTR) is provided that houses all the service entrance equipment for signal system demarcation points as well as distribution equipment to provide the buildings signal infrastructure. Intermediate Telecommunications Rooms (ITR), feed from MTR, are constructed on each floor and contain equipment to distribute signal systems to the end user.

The project was designed to achieve LEED Silver Certification. State agencies began moving into the new building in 2016.

#### Meeting the Project Goals

An important goal of the project was to provide an energy efficient, state-of-the-art facility with sustainable design features capable of achieving LEED Silver Certification. H.F. Lenz Company helped meet this goal by designing an HVAC system that utilizes a chilled water system with ice storage to save energy costs. The lighting system design also contains several energy conserving elements.



## GSA/FBI

Charleston, West Virginia

### NEW OFFICE BUILDING

H.F. Lenz Company provided the engineering services, as part of a Design-Build team, for the design of a new, two-story 19,427 sq.ft. office building in Charleston, West Virginia to house an agency of the intelligence community offices. The facility includes forensic evidence labs, investigators' work and technology spaces, and service bays to modify surveillance vehicles.

The building was designed with energy efficient systems and sustainable design criteria including water conservation, use of regionally manufactured materials, increased ventilation, use of renewable energy sources, and a pre-occupancy construction indoor air quality management plan. The project goal was to meet the requirements of LEED Silver (minimum) and attain an ENERGY STAR rating of 75 or above.

#### Features of the Project Included:

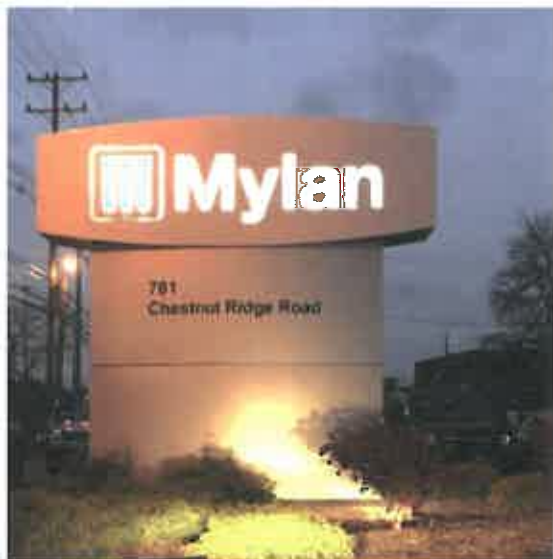
- ▶ Variable air volume HVAC system consisting of gas-fired rooftop air-handling units with DX cooling and energy recovery, supplemental cooling for specialty areas such as server rooms and areas with concentrated high heat loads. A separate air-handling unit for the mailroom area will minimize any airborne threats. Another HVAC security measure includes the strategic placement of outdoor air intakes to minimize the risk of contaminants being entrained into the building through the outdoor air intake.
- ▶ An electrical distribution system that will supply 10 watts/sq.ft. of power to the building, as well as an exterior 50kw standby/emergency generator that will serve the backup power needs.
- ▶ A complete data/communications system which includes separate telecommunications closets for the internal system servers that will be used to meet the function of the building. The system features include category 6A horizontal cabling, incoming optical fiber cabling, wire racks and bridging rings for wire management.
- ▶ A fire alarm system with a voice/alarm communication system
- ▶ An automatic sprinkler system designed to NFPA requirements
- ▶ The design of a wet lab area that includes a separate fume hood exhaust system.
- ▶ Garage bays that are used to modify/examine vehicles
- ▶ Building commissioning

The \$4.5 million project was completed in 2010.

H.F. LENZ COMPANY



PROJECT EXPERIENCE



## Mylan Pharmaceuticals

Morgantown, West Virginia

### 74 ADDITION AREA

H.F. Lenz Company provided the engineering services for the renovation of the 74 Addition Area at the Mylan Chestnut Ridge Facility. The facility includes laboratories, clean rooms, offices and storage space.

The project was completed in a phased approach. The renovation consisted of demolition and the rebuild from the foundation to the roof decking of all utilities (mechanical, electrical and plumbing), equipment and infrastructure. Field verification of all utilities, equipment and infrastructure was required during the engineering design. A roof hatch was designed to be constructed during Phase 1 that would be used during all phases to remove materials and equipment from the facility during demolition.

Phase 2 consisted of the qualification and relocation of production and facilities equipment. Utilities and equipment installed during Phase 1 were qualified. Existing facilities equipment remained in operation and have been modified to be re-balanced.

Phase 3 consisted of the demolition of seven rooms and construction of 11 rooms.

Design is complete and construction is currently on-going.

### THE RENOVATION OF EXISTING MANUFACTURING AREA INCLUDED:

- › Dust collector replacement with HEPA filtration and bag-in/bag-out
- › Installation of a new Compactor
- › Water chiller replacement
- › Fluid Bed with Gral
- › Coater replacement
- › Air-handler w/HEPA filtration replacement
- › Creation of Mid-potent rooms
- › Creation of controlled substance rooms
- › Installation of new blenders
- › Wastewater storage
- › Compressed air, nitrogen, pure water and process water distribution
- › Purified water system



## LAB RENOVATION

H.F. Lenz Company provided the engineering services for the renovation of an existing warehouse and office area, into a new research laboratory. The area is approximately 20,000 sq.ft. and is designed to be dedicated lab space. The first floor is used for existing warehouse space and mechanical equipment support space. The space is designed to maintain a very narrow band of temperature and humidity at all times throughout the year.

Renovation details include:

- › The lab area will house 60 HPLC stations complete with supporting work stations and setup stations
- › A drug storage room with a controlled drug area will be installed on this floor.
- › Balance room with vestibule entry
- › Bathrooms for personnel
- › Glassware wash room
- › Supporting utility space and storage
- › Balance room with vestibule entry
- › Glassware washroom
- › Bathrooms for personnel
- › Explosion proof bulk solvent room
- › Supporting utility space and storage
- › Training/Multipurpose Room
- › Bathrooms for personnel
- › Mechanical room (Boilers, Water System, Compressor)
- › Uninterruptable power system to serve the HPLC stations

### **The project also included:**

- › Field verification for all utilities, equipment and infrastructure
- › Demolition of current utilities
- › Run utility lines (HVAC and ductwork, potable water, sanitary drains, and purified water)
- › Factory Mutual approval for the design, layout, materials, equipment, systems, etc.

Construction was completed in February 2018.





## Various Additional Projects at Multiple buildings on the Morgantown Campus:

### STUDY OF HIGH DENSITY ARCHIVE ROOM

- › Study to bring existing paper storage into environmental requirements of FDA

### BULK SOLVENT STORAGE TANK REPLACEMENT

- › Installation of new 10,000 ethyl alcohol and acetone tanks, containment dikes and distribution piping

### CONDENSATION REMEDIATION

- › Study of existing masonry walls to determine the source, and remediation of, condensation issues in storage areas

### FLUID BED REPLACEMENT

- › Mechanical, electrical and structural design for the replacement of existing fluid bed, air-handling unit, chiller and dust collectors

### CLIMATE CONTROLLED WAREHOUSES

- › Design of a 19,000 s.f., a 16,000 s.f. two-story warehouse, and a 35,000 s.f. warehouse into multiple tightly controlled storage spaces
- › New deionized water system
- › Replacement of air-handling units
- › Security system design
- › Monitors to map temperature and humidity throughout the areas
- › (2) 600 kW Standby generators
- › Installation of stability chambers

### LAB EXPANSION

- › New 12,000 s.f. lab addition to an existing building
- › Purified water system
- › Creation of a Mass Spectrometer Lab
- › 300 kW standby generator
- › Lab exhaust system
- › Methanol and nitrogen storage and distribution system
- › Creation of a Capillary Electropherograph lab

### SECURITY HEADQUARTERS

- › Mechanical, electrical, plumbing and fire protection design of the security headquarters for the North American Operations



## U.S. Department of Agriculture

Morgantown, West Virginia

### TENANT FIT-OUT

H.F. Lenz Company, as part of a Design-Build team provided the mechanical, electrical, plumbing, and fire protection engineering services for the tenant-fit out of approximately 40,000 sq.ft. of a GSA-leased building to be utilized by the U.S. Department of Agriculture. The fit-out space consists mainly of offices, conference areas, lobbies, mailroom, credit union, computer center, storage space and a loading dock.

Key features of the project included:

- › A central HVAC system with main and branch lines, VAV boxes, dampers, flex ducts, and diffusers for the office layout and commons areas. Separate HVAC units for the mail room and lobby spaces were provided in order to prevent contamination of other areas of the building in the event of a security threat. A separate computer room air-conditioning unit was also provided for the central computer center.
- › New 277/480 V and 120/208 V, 3 phase, 5-wire electrical distribution system serving panelboards located on each floor of the complex. Receptacles supplying power to sensitive equipment were provided with an isolated ground system to prevent unwanted noise from being passed through the electrical distribution system.
- › Energy Efficient Lighting with occupancy sensors for automatic control of the lighting fixtures.
- › The project is LEED® Certified

The \$2 million project was completed in 2009.



## Jones Lang LaSalle

Pittsburgh, Pennsylvania

### TENANT FIT-OUT IN TOWER TWO-SIXTY

H.F. Lenz Company provided the Mechanical, Electrical, Plumbing, Fire Protection, and Telecom engineering services along with the Construction Administration and Commissioning services for JLL's office space in the newly constructed 18-story Tower Two-Sixty high-rise located in Downtown Pittsburgh. The JLL space is approximately 54,000 sq.ft. and occupies floor levels 12, 13, and 14 of the office tower. The new tenant space consists of open offices with moveable partitions, some enclosed offices, conference rooms, and a café.

A key component to the engineering services included an emergency generator upgrade providing full-building generation at six of the structures on the main campus to support the trading operations and the development of trading floors in two of the buildings.



#### The key features of the project include:

- › HVAC system consisting of fan powered boxes (FPB) with electric coils to serve the perimeter areas and variable volume boxes (VAV) to serve the interior spaces
- › VAV and FPB's equipped with DDC controls and connected to the base building automation system
- › A dedicated nominal 2-ton, DX supplemental cooling unit with remote condensing unit provides cooling to the server rooms located on each floor
- › Lighting and electric heat for the FPB's served by 480V panels located in electric closets on each floor
- › Receptacles, equipment, and furniture loads served by 208V panels located in electric closets
- › Lighting utilizing LED's for the light source are pendant mounted direct/indirect fixtures
- › Base building fire alarm system extended to serve the fit-out floors
- › Telecommunication pathways for the installation of Category 6 telecommunications wiring
- › Plumbing systems for sink, ice maker, water dispenser, and dishwasher in each of the two cafés
- › Fire protection system including new branch piping and sprinkler heads served off of the existing main risers in the stairwells

**The Project has achieved LEED CI Silver.**

The \$5.5 million project was completed in 2016.



#### OFFICE PROJECT EXAMPLES (AWARDED 2013-2018)

##### **Pittsburgh Technical Corporation** *Pittsburgh, PA*

- › 160,000 sq.ft. New Office Building, (Currently in design)

##### **Confidential Client, RIDC** *O'Hara, PA*

- › Renovation of 16,000 sq.ft. Office

##### **UPMC Magee** *Pittsburgh, PA*

- › Renovation of Administrative Offices

##### **Plastek** *Erie, PA*

- › Corporate Office Renovations

##### **Farm Show Complex** *Harrisburg, PA*

- › Upgrade Farm Show Complex Facilities & Modify/Construct Administrative Office Space

##### **Bridgeside Point Building** *Pittsburgh, PA*

- › Aging Institute Fifth Floor Offices

##### **Independence Center Realty L.P.** *Philadelphia, Pennsylvania*

- › The Lits Building, Brickstone Offices Street level "B" North

##### **Southside Practice Facility, University of Pittsburgh** *Pittsburgh, PA*

- › Renovation of HC offices

##### **Franklin Building, University of Pennsylvania** *Philadelphia, PA*

- › 3rd Floor Office Renovation

##### **JPMorgan Chase** *Columbus, OH*

- › Columbus Data Center/Office Building Infrastructure Upgrade

##### **Fannie Mae** *Reston, VA*

- › 4th Floor Conversion to Offices, Technology Center

##### **PNC Park Administration Building** *Pittsburgh, PA*

- › Pittsburgh Pirates Executive Offices Tenant Fit-out

##### **University of Pennsylvania** *Philadelphia, PA*

- › Annenberg Directors Office

##### **Highwoods Properties** *Pittsburgh, PA*

- › Ryan LLC MEP Fit-out of Office Space, PPG 28th Floor



**U.S. Department of Energy National Energy Technology Laboratory** *Pittsburgh, PA*

- › NETL/DOE Building 58 West Office Renovations

**Yale University** *New Haven, CT*

- › Dunham Lab 2nd Floor Office & Lab Renovation

**Pittsburgh Steelers Training Facility Office Building, Pittsburgh Steelers** *Pittsburgh, PA*

- › Office Expansion

**Farfield Company, Airport Road Facility Office** *Lititz, PA*

- › Office Building Addition

**Digital Reality** *Ashburn, VA*

- › Incorporate New Office Space into Flex Shell Space
- › Building K Suite 206 Customer Office Addition
- › Fit-out for Office Space and a New Network Operations Center

**RIDC – Westmoreland** *Mount Pleasant PA*

- › Aquion Energy Office Renovations Phase 1 Conference Room

**General Services Administration** *Williamsport, PA*

- › Social Security Administration Williamsport Office Renovation

**BFS Food Stores** *Morgantown, WV*

- › New 21,000 sq.ft. Office Building

**NIOSH, Buildings B41 and 172** *Pittsburgh, PA*

- › Interior Renovation of Two Buildings for Creating Office Space

**First Energy Corporation** *Fairmont, WV*

- › Mon Power Office Renovations

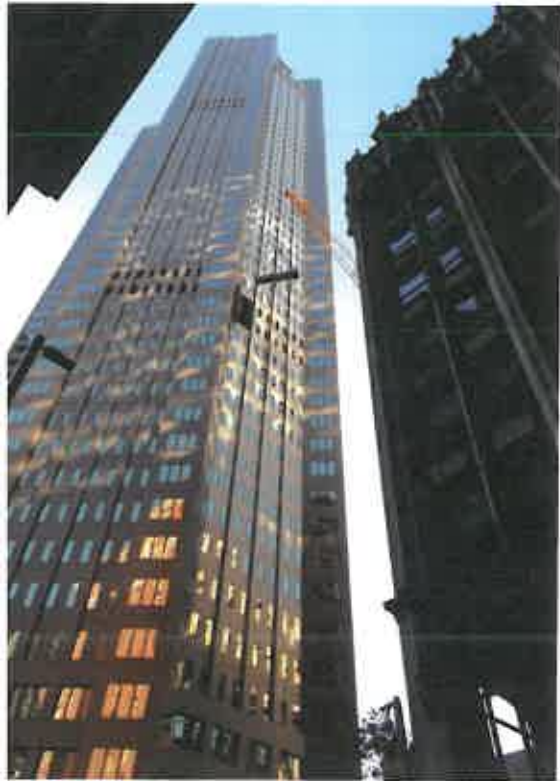
**Sheetz, Inc.** *Claysburg, PA*

- › Facilities Support Center - Interior Office Mezzanine Expansion

**Tower Two Sixty** *Pittsburgh, PA*

- › Tenant fitout of 54,000 square feet of office space





**North American Hoganas** *Hollsopple, PA*

- › Design EAF Control Room and Office Space

**Westmont High School** *Johnstown, PA*

- › New MEP for District Office in High School

**Progressive Casualty Insurance Company** *Cleveland, OH*

- › Progressive Campus I East - Security Office

**Chautauqua County Sheriff's Office** *Chautauqua, NY*

- › Office Addition

**Bald Eagle State Park, PA DCNR** *Howard, PA*

- › Renovate Park Office

**Wistar Institute** *Philadelphia, PA*

- › Office Fit-out

**Indiana University of Pennsylvania** *Indiana, PA*

- › IUP Zink Hall New ADA Restrooms and Office Space

**Statue of Liberty National Monument, National Park Service**  
*Liberty Island, NY*

- › Office Services - Generator Project

**Sproul State Forest Resource Management Center** *PA DCNR*  
*Renovo, PA*

- › State Forest Office Building Geothermal/Electrical Issues

**One Mellon Center, Bank of New York Mellon** *Pittsburgh, PA*

- › 26th Floor Trader Area / Office Upgrades

**Union Trust Building** *Pittsburgh, PA*

- › Renovations on Floors 49, 50 and 51 for Pepper Hamilton

**Letterkenny Army Depot** *Chambersburg, PA*

- › Odyssey Field Office
- › Theatre Readiness Monitoring Directorate (TRMD) Office Building

**Cook Forest State Park, PA DCNR** *Clarion, PA*

- › Replacement of Office/Visitor Center

**Kennametal Inc.** *Bedford, PA*

- › Office Building HVAC Upgrades



**GSA** *Harrisburg, PA*

- › Office Renovation to 5th Floor, Reagan Building, FHA

**Lackawanna State Park, PA DCNR** *Dalton, PA*

- › Forestry and Park Office Addition

**Kennametal, Inc.** *Latrobe, PA*

- › Office Expansion Study, Kennametal Technology Center

**Sheetz, Inc.** *Altoona, PA*

- › Sheetz Transportation Office

**Pittsburgh Parking Authority** *Pittsburgh, PA*

- › Offices HVAC Upgrades, PPA Wood/Allies Parking Garage

**Alcoa Business Center** *Pittsburgh, PA*

- › HVAC Design for Lincoln Office Expansion, Second Floor Conference Room

**Altoona Regional Health System** *Altoona, PA*

- › Relocation of the Security Offices and Renovation of E5 Med Room, E Building

**Yale University** *New Haven, CT*

- › Electron Accelerator Lab Suite 100 Office Renovation

**Vanguard Group, Inc.** *Malvern, PA*

- › Second Floor Conference Room and Office Addition, Victory Building
- › Revisions to Offices and Sector Hub, Goliath Building
- › Corporate Campus Densification Project (18 buildings)

**Slippery Rock University** *Slippery Rock, PA*

- › Office Renovations, Morrow Field House

**Altoona Regional Health System** *Altoona, PA*

- › Renovation and Expansion of the Security Offices, Tower Building

**Conemaugh Health System** *Johnstown, PA*

- › Office Space Renovation

**Principle Development Limited** *Johnstown, PA*

- › Oakridge East Office Complex



**Ascender** *Pittsburgh, PA*

- › Study and fit-out of an older office building for use as a new modern incubator facility for tech companies, healthcare innovators, nonprofits, etc. The new space includes event space, open incubator lab space with moveable partitions, enclosed meeting rooms, conference rooms, small kitchen/gathering area and board room

**Five Below** *Philadelphia, PA*

- › Headquarters renovations

**Indiana University** *Indiana, PA*

- › Stabley Hall – renovation of office suite

**Penn State University** *University Park, PA*

- › Shields Building:
  - › Bursar Teller Area renovation
  - › Server Room 23A, B & C Air Conditioning
  - › Shields Building Server Room 23A, B & C Expansion
  - › ARC Flash Study
  - › 12 kV Service, Transformer and Switchgear Replacement





## Joel C. Shumaker, P.E., CBIE, LEED AP

*Principal-in-Charge*

As Principal-in-Charge, Mr. Shumaker is responsible for client contact, project scheduling, preparation of reports and cost estimates, coordination and supervision of project design teams, and other project management functions. Mr. Shumaker is experienced in the design of electrical systems for both new buildings and building retrofits for educational, health care, commercial, government, industrial, residential, and utility-related facilities. He is experienced in the design of power distribution systems; emergency power systems and monitoring; uninterruptible power supplies; lighting and emergency lighting systems; fire alarm systems; nurse call; security; sound; and telephone systems.

### EDUCATION

Bachelor of Science, Electrical Engineering Technology 1993, University of Pittsburgh at Johnstown

### EXPERIENCE

H.F. Lenz Company 1985-Present

### PROFESSIONAL REGISTRATION / CERTIFICATION

Licensed Professional Engineer in Pennsylvania, Connecticut, Delaware, Maryland, New York, Vermont, Virginia and West Virginia

### PROFESSIONAL AFFILIATIONS

Pennsylvania Society of Professional Engineers, Johnstown Chapter Secretary • National Society of Professional Engineers • Keystone Chapter of Association of Physical Plant Administrators

### PROJECT EXPERIENCE

#### Clarksburg State Office Building – Clarksburg, West Virginia

- › New 85,250 sq.ft., five-story office building to house seven state agencies – designed to attain LEED Silver

#### U.S. General Services Administration – Charleston, West Virginia

- › New, two-story 19,427 sq.ft. office building to house offices for the Federal Bureau of Investigation; the building was designed to achieve LEED Silver

#### Jones Lang LaSalle (JLL) - Pittsburgh, Pennsylvania

- › Fit-out of 54,000 sq.ft, on three floors, of Tower Two-Sixty, the new space includes open offices with moveable partitions, some enclosed offices, conference rooms, and a café

#### Ascender – Pittsburgh, Pennsylvania

- › Fit-out of 15,000 sq.ft. of an existing building for a new incubator facility for tech companies, healthcare innovators, nonprofits, etc.

#### CDC/ National Institute for Occupational Safety and Health - Pittsburgh, Pennsylvania & Morgantown, West Virginia

- › Two consecutive Indefinite Delivery-Indefinite Quantity (IDIQ) contracts under which a variety of projects were completed, including building renovations, studies and utility upgrades.

#### Mylan Pharmaceuticals – Morgantown, West Virginia

- › Various renovations including office spaces, labs, clean rooms, warehouses, manufacturing facilities, etc.



## John M. Weiland, P.E., CEM, LEED AP

*Project Engineer and Lead Mechanical Engineer*

Mr. Weiland specializes in the design of HVAC systems for office buildings, colleges and universities and healthcare facilities. His responsibilities include client contact, project scheduling, preparation of reports and cost estimates, coordination and supervision of project design teams and other projects management functions. His duties include design calculations, equipment selection, schematic and construction document design, specification writing, and life cycle cost analyses.

### PROJECT EXPERIENCE

#### Clarksburg State Office Building – Clarksburg, West Virginia

- › Multi-discipline design of a new 85,250 SF, five-story office building to house seven West Virginia state agencies; sustainable design features include an HVAC system that utilizes a chilled water system with ice storage to save energy costs

#### West Virginia University – Morgantown, West Virginia

- › Phased renovation and life safety upgrade of the 95,500 SF White Hall including a 1,000 SF Computer Cluster Room with specialized cooling and conditioned power

#### U.S. General Services Administration – GSA Region 3

- › Term Contract for AE Design Services; projects involve alteration, renovations, and modernizations of federal buildings and courthouses in Region 3 North Service Sector

#### University of Pittsburgh – Pittsburgh, Pennsylvania

- › Renovation of 400,000 SF Benedum Hall; included the replacement of the existing mechanical, electrical, plumbing and fire protection systems on all 15 floors of the building over three project phases; the project has achieved LEED Gold

#### West Virginia University – Morgantown, West Virginia

- › Renovations to the basement level of the Engineering Sciences Building; replaced the existing mechanical system with a new system capable of meeting the HVAC requirements of new labs

#### University of Pittsburgh at Johnstown – Johnstown, Pennsylvania

- › Mechanical and electrical renovations to the 66,000 Engineering & Science Building that houses chemistry and engineering labs; due to the complex phasing and the desire to replace the majority of the infrastructure, temporary infrastructure services were designed to allow for continuous building occupancy

### EDUCATION

Bachelor of Architectural Engineering, 2002, Pennsylvania State University

### EXPERIENCE

H.F. Lenz Company 2002-Present

### PROFESSIONAL REGISTRATION / CERTIFICATION

Licensed Professional Engineer in Pennsylvania • Certified Energy Manager • LEED Accredited Professional

### PROFESSIONAL AFFILIATIONS

ASHRAE – Johnstown, PA Chapter



## Steven P. Mulhollen, P.E.

*Electrical Engineer*

Mr. Mulhollen is experienced in the design of power distribution systems, control systems, emergency power systems, lighting and emergency lighting systems, fire alarm systems, security, sound, and telecommunication systems for correctional, educational, institutional, industrial, health care, and commercial facilities.

### PROJECT EXPERIENCE

#### Social Security Administration – Woodlawn, Maryland

- › Renovations to a 1.2 million sq.ft. operations building Phase 2 project totaling \$125 million – LEED Certified

#### Carnegie Mellon University – Pittsburgh, Pennsylvania

- › Renovations to 300 Craig Street including University Police State – LEED Certified

#### Philadelphia Police Department – Philadelphia, Pennsylvania

- › Building assessment, energy analysis and operation cost analysis

#### Pennsylvania Turnpike Commission, Central Administration Building – Harrisburg, Pennsylvania

- › New three-story addition and renovation to the Central Administration Building which houses the Police Troop T Command Center including parking lot and exterior building lighting; LEED Certified Building

#### Fifth Third Center (Robinson & McElwee, LLP) - Charleston, West Virginia

- › New 66,000 sq.ft. D/B multi-tenant office building

#### Allegheny County Human Resources Development Commission Cumberland, Maryland

- › New 20,000 sq.ft. office building and community center – LEED Gold

#### U.S. Drug Enforcement Administration (DEA) – Pittsburgh, Pennsylvania

- › New 50,000 sq.ft. building with 24,000 sq.ft. of office space and lower level parking – LEED Certified

#### Pennsylvania State University - Erie, Pennsylvania

- › New 179,640 sq.ft. Research and Laboratory Building with multiple tenants

### EDUCATION

Bachelor of Science, Electrical Engineering, 1988, The Pennsylvania State University

### EXPERIENCE

H.F. Lenz Company 1999 – Present  
• L. Robert Kimball & Associates  
1996 – 1999 • Leach Wallace Associates, Inc. 1990 – 1996 • E.A. Mueller, Inc. 1988 - 1990

### PROFESSIONAL REGISTRATION / CERTIFICATION

Licensed Professional Engineer in Pennsylvania, Alabama, California, Florida, Iowa, Kansas, Kentucky, Louisiana, Massachusetts, Maryland, Missouri, Nebraska, Nevada, New Jersey, New Mexico, New York, North Carolina, Ohio, Rhode Island, Tennessee, West Virginia, DC

### PROFESSIONAL AFFILIATIONS

Institute of Electrical and Electronics Engineers, Inc.



## Gregory D. Rummel, CPD

*Plumbing/Fire Protection Designer*

Mr. Rummel has designed complete plumbing and fire protection systems for colleges, schools, office buildings, hospitals, prisons, laboratories, industrial facilities, and military installations. He is fully knowledgeable of NFPA codes and is experienced in the design of wet, dry, preaction, FM200, and deluge fire protection systems. He is responsible for plumbing and sprinkler system design, layout, and calculations; selection and sizing of equipment; cost estimates; and site survey work. Mr. Rummel supervises drafting personnel; coordinates the plumbing design with utility companies, with other trades, and with the Project Engineer and Project Architect; and is responsible for assembling complete and accurate plumbing bid documents which meet H.F. Lenz Company standards.

### EDUCATION

Bachelor of Science, Mechanical Engineering Technology, 2000, Point Park College

Associate in Specialized Technology 1984, Architectural Drafting and Construction with CAD Technology, Triangle Institute of Technology

### EXPERIENCE

H.F. Lenz Company 1989- Present • Newport News Ship Building 1984-1989

### PROFESSIONAL REGISTRATION / CERTIFICATION

Certified in Plumbing Design, ASPE

### PROJECT EXPERIENCE

#### Social Security Administration – Woodlawn, Maryland

- › Renovations to a 1.2 million sq.ft. operations building Phase 2 project totaling \$125 million – LEED Certified

#### Carnegie Mellon University – Pittsburgh, Pennsylvania

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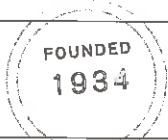
#### U.S. Drug Enforcement Administration (DEA) – Pittsburgh, Pennsylvania

- › New 50,000 sq.ft. building with 24,000 sq.ft. of office space and lower level parking – LEED Certified



**BARBER & HOFFMAN, INC.**  
Consulting Engineers

## Barber & Hoffman, Inc. Firm Overview



### HISTORY

Barber & Hoffman, Inc. (B&H) is a premier structural engineering consulting firm serving the Midwest and Mid-Atlantic states. B&H has been providing structural engineering expertise since its founding by C. Merrill Barber in 1934 in Cleveland, Ohio. The firm opened an office in the Pittsburgh area in 1998, and in 2009, an office in Columbus, Ohio.

During Mr. Barber's distinguished career as a design professional, together with his partners and successors, many impressive landmarks in the public and private sectors have been created.

B&H has the legal status of a professional corporation and a certified small business enterprise.

### EXPERIENCE

B&H serves design and construction professionals, medical and educational institutions, building owners and managers, government agencies, contractors, fabricators, developers, and others. Our firm has a versatile staff of registered Professional Engineers, EITs, and technicians.

A Principal manages each project bringing together knowledge, coordination, and integration of specialized skills needed for completion. The daily interplay among the staff encourages creative solutions while eliminating costly research in design challenges. This approach has retained many of our valued clients.

B&H utilizes integrated computer modeling with associated tools for analysis and design. We are proficient in utilizing AutoCAD and Building Information Modeling (BIM) for design and drafting.

Barber & Hoffman, Inc., list of relevant projects include;

#### **Glenville State College**

Science Building Restoration

#### **West Virginia University**

Advanced Engineering Research Building

#### **Butler County Community College**

Heaton Learning Center

#### **Carnegie Mellon University**

Doherty Hall Additions and Renovations  
Pierce Hall Nursing Addition

#### **Duquesne University**

Rangos School of Applied Health –  
Cadaver Lab Expansion Study  
Gumberg Library - Assessment and Renovation

#### **Juniata College**

Founders Hall Additions and Renovations

#### **Pennsylvania State University**

Advanced Engineering Research Building  
Behrend Campus – Dobbins Hall Addition  
and Renovations  
Fayette/Eberly Campus – Eberly Hall Renovations  
Port Sky Dining Hall Addition and Renovations  
Shenango Valley Campus – Shenango and  
Lecture Halls Renovations

#### **University of Pittsburgh**

Chevron Science Center Annex Addition  
Eberly Hall Renovations (Various)  
Mid-Campus Complex Renovations

### SUMMARY:

- Structural Consultants
- Founded in 1934
- 3 Office Locations
- Headquartered in Cleveland, OH
- 3 Principals
  - Halim Saab, President
  - Ronald Czaplicki, Vice President
  - Michael Miller, CEO
- 26 Engineers (18 Registered)
- 5 Technicians
- 4 Administrative

### STATE REGISTRATIONS:

- Connecticut
- Colorado
- District of Columbia
- Indiana
- Kentucky
- Maryland
- Michigan
- Minnesota
- Mississippi
- New Jersey
- New York
- North Carolina
- Ohio
- Pennsylvania
- Virginia
- West Virginia

### CAPABILITIES:

- Facades
- Existing Structures
- Building Assessments
- Restoration
- Renovations
- Airport Terminals
- Parking Garages
- New Structures

### MARKET AREAS:

- Institutional
- Healthcare
- Education
- Commercial
- Housing
- Public Sector
- Private Sector
- Design-Build

2217 East 9th Street  
Cleveland, OH 44115  
216.875.0100  
216.875.0111

8720 Orion Place  
Columbus, OH 43240  
614.825.9580  
614.825.9581

215 Executive Drive  
Cranberry Twp., PA 16066  
724.741.0848  
724.741.0849

[www.barberhoffman.com](http://www.barberhoffman.com)



**BARBER & HOFFMAN, INC.**  
*Consulting Engineers*

PROJECT

## Frick Environmental Center

YEAR  
COMPLETED  
2016

Pittsburgh, PA  
**\$18.4 Million**



The Pittsburgh Parks Conservancy, in partnership with the City of Pittsburgh, is constructing the new Environmental Center on the same site as the previous center, which burnt down in 2002. The center will include indoor learning spaces, a public gathering and reception area, public restrooms and offices, as well as an outdoor amphitheater.

Being constructed into the existing hillside, two of the three stories are below grade on the north side of the building, with a portion of all three levels exposed on the south side. Concrete basement walls, shear walls, and floor diaphragms are used to resist the large lateral earth pressures. Shallow concrete foundations support the structure at its lowest level.

Steel moment frames vertically and laterally support the sloping roof, which cantilevers out to cover an exterior balcony on the south side of the building. The steel frame allows for large areas of windows in the walls above grade, providing views of the surrounding forest.

Curved concrete framed bridges, with steel "trellis" framing above, provide access to the main level on the east and west sides of the building.

### PROJECT DESCRIPTION:

A three-level, 15,500-gross-square-foot environmental center built into a hillside in the 644-acre Frick Park.

### ADDITIONAL PROJECT FACTS:

- Designed to meet the Living Building Challenge and LEED Platinum standards for energy efficiency, the building will support its own needs for water and energy.
- As part of the Living Building Challenge, all of the building materials must be environmentally safe and locally sourced.
- Concrete framed stair and elevator towers help "anchor" the structure into the hillside on the north side of the building.
- The project also contains a new masonry bearing wall "bam" structure, which will house maintenance equipment, etc.

### PROJECT AWARDS:

- Leadership Award, Green Building Alliance
- Jury Award, Urban Land Institute of Pittsburgh
- Honor Award, AIA Pittsburgh
- Wood Design Regional Excellence Award, Wood Works Wood Products Council
- Special Project of the Year - Transportation, Building & Construction Awards, March of Dimes
- Green GOOD DESIGN Award, The European Center for Architecture and The Chicago Athenaeum
- Sustainability Award, ASCE (American Society of Civil Engineers)



**BARBER & HOFFMAN, INC.**  
*Consulting Engineers*

PROJECT

## DCNR #20 Loyalsock State Forest



Dushore, PA  
**\$4.3M**



### PROJECT DESCRIPTION:

A two-story, 10,750-square-foot operations center which includes offices, training and conference areas. A detached fire-apparatus building houses the center's three support vehicles.

### ADDITIONAL PROJECT FACTS:

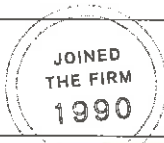
- LEED certified facility (in final stages of certification).
- Publicly bid project utilizing performance based material including: prefabricated wood trusses, SIPs and reclaimed timber framing.
- Clerestory maximized natural light throughout central areas of the building.

The Pennsylvania Department of Conservation and Natural Resources (DCNR) maintains and preserves the 117 state parks and manages over 2.1 million acres of state land.

The 20th District supports Loyalsock State Forest and the surrounding areas at and near Sullivan County in north central Pennsylvania. Loyalsock State Forest includes: Worlds End State Park, Dry Run Picnic Area, Bear Wallow Pond and the High Knob Overlook.

The two-story, 10,750-square-foot operations center provides a support location for the DCNR staff, which includes forest rangers, managers and maintenance support personnel. The center not only includes the operations building, but a detached apparatus garage and a transmission tower. The project will be one of the first DCNR projects to achieve LEED certification.





RESPONSIBILITIES

Mr. Miller is a Principal in Charge and Project Manager on commercial, institutional, medical, research and restoration projects. He initiated and continues to manage operations in our Cranberry Township office. His experience includes structural analysis and design of new structures; investigation, restoration/renovation and reuse of existing structures, building masonry facade investigation, remediation/restoration, preparation of feasibility studies; contract documents and specifications.

In addition, Mr. Miller's collaborative design approach has allowed his clients to develop and incorporate unique, but practical solutions on their projects. His project structural systems capabilities encompass steel, composite steel, steel joist and joist girder, wood, timber, masonry, reinforced concrete and precast concrete. Foundation systems design includes conventional spread footings, drilled piers (caissons), auger cast concrete piles and slab-on-grades on expansive soils, as well as performance specifications for concrete underpinning and soil nailing.

PROJECT EXPERIENCE

**BUTLER COUNTY COMMUNITY COLLEGE** Butler, PA  
Heaton Learning Center

**CARNEGIE MELLON UNIVERSITY** Pittsburgh, PA  
ANSYS Hall  
Doherty Hall Additions and Renovations  
Tepper School of Business (Foundations)  
Pierce Hall Nursing Addition Cresson, PA

**DUQUESNE UNIVERSITY** Pittsburgh, PA  
Rangos School of Applied Health – Cadaver Lab Expansion Study  
Brotter Hall Garage Evaluation and Restoration  
Gumberg Library - Assessment and Renovation  
Public Services Building - Assessment  
Energy Center - Green Roof Load Study

**GLENVILLE STATE COLLEGE** Glenville, WV  
Science Building Restoration

**JUNIATA COLLEGE** Huntington, PA  
Founders Hall Additions and Renovations

**PENNSYLVANIA STATE UNIVERSITY**  
Behrend Campus – Dobbins Hall Addition and Renovations Erie, PA  
Fayette/Eberly Campus – Eberly Hall Renovations Connellsville, PA  
Port Sky Dining Hall Addition and Renovations Altoona, PA  
Shenango Valley Campus – Shenango and Lecture Halls Renovations Sharon, PA

**UNIVERSITY OF PITTSBURGH** Pittsburgh, PA  
Chevron Science Center Annex Addition  
Eberly Hall Renovations (Various)  
Mid-Campus Complex Renovations  
Parran and Crabtree Halls Additions and Renovations  
Scarfe Hall MEP Infrastructure Master Plan

**WESTINGHOUSE SCIENCE AND TECHNOLOGY PARK** Churchill, PA  
Structural Building Assessment

**WEST VIRGINIA UNIVERSITY** Morgantown, WV  
Advanced Engineering Research Building



EDUCATION :

- Cleveland State University, 1996  
Master of Science in Civil Engineering
- The Pennsylvania State University, 1990  
Bachelor of Architectural Engineering (Structural)

REGISTRATION: P.E. 1997

- Pennsylvania
- Ohio
- Maryland
- Mississippi
- New Jersey
- New York
- Virginia
- West Virginia

PROFESSIONAL AFFILIATIONS:

- Structural Engineers Association of Ohio
- Code Management Review Board for City of Butler, PA
- American Institute of Steel Construction
- First Sergeant (retired)  
Pennsylvania Army National Guard



# Civil & Environmental Consultants, Inc. Statement of Qualifications



CEC BRIDGEPORT  
600 MARKETPLACE AVE  
SUITE 200  
BRIDGEPORT, WV 26330  
P. 304-833-3119  
[www.ceclnc.com](http://www.ceclnc.com)

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## 1.0 Firm Overview

Civil & Environmental Consultants, Inc. (CEC) provides comprehensive market-oriented consulting services that advance client strategic business objectives. Consistently ranked among the Top 500 Design Firms and Top 200 Environmental Firms by *Engineering News-Record*, CEC is recognized for providing innovative design solutions and integrated expertise in air quality, civil engineering, ecological sciences, environmental engineering and sciences, survey/geospatial services, waste management, and water resources.

**Safety First** — CEC believes that all accidents are preventable and is committed to creating an accident and incident free workplace for employees and subcontractors through training, safe work practices, and processes for assessing project hazards. CEC strives for safety excellence throughout our entire organization and holds employees and subcontractors accountable for the safe performance of their work. Safety is a key element of CEC's Strategic Plan and is represented by our Accident and Incident Free program.

**Market Oriented** — Multi-disciplined groups are derived from the primary practice areas to strategically focus on the business challenges and drivers of the manufacturing, mining, oil & gas, power, public sector, real estate and solid waste markets. Each of these diverse teams is a conduit to the latest thinking and advancements in the markets we serve, allowing CEC to provide clients with concise, timely information and regulatory updates to facilitate informed decision-making.

**Employee Owned** — CEC's employee-owners are highly motivated by the link between our success and that of our clients. Our continuing growth reflects client confidence in the work of our employees, who are guided by three core business principles:

- Senior Leadership
- Integrated Services
- Personal Business Relationships

**Multi-Disciplined** — CEC is an expanding company with:

- Civil Engineers
- Geotechnical Engineers
- Transportation Engineers
- Structural Engineers
- Environmental Scientists
- Environmental Engineers
- Chemical Engineers
- Geologists
- Hydrogeologists
- Hydrologists
- Ecologists
- Biologists
- Wetland Scientists
- Threatened & Endangered Species Experts
- Agronomists/Soil Scientists
- Emissions Testing Professionals
- Chemists
- Archaeologists
- Construction Managers & Inspectors
- Environmental Technicians
- Treatment Plant Operators
- Land Surveyors
- Landscape Architects
- GIS Analysts & Programmers



### CEC OVERVIEW

CEC Corporate Headquarters  
333 Baldwin Road  
Pittsburgh, PA 15205  
P: 800-365-2324  
[www.cecinc.com](http://www.cecinc.com)

**FOUNDED: 1989**

**EMPLOYEES: 1,000+**

### LOCATIONS:

- Albany, NY
- Austin, TX
- Boston, MA
- Bridgeport, WV
- Charlotte, NC
- Chicago, IL
- Cincinnati, OH
- Cleveland, OH
- Columbus, OH
- Export, PA
- Greenville, SC
- Houston, TX
- Indianapolis, IN
- Kansas City, KS
- Knoxville, TN
- Lake Havasu City, AZ
- Nashville, TN
- Oklahoma City, OK
- Philadelphia, PA
- Phoenix, AZ
- Pittsburgh, PA
- Sayre, PA
- Sevierville, TN
- St. Louis, MO
- Toledo, OH

## Firm Capabilities

### AIR QUALITY

- Air Emissions Testing
- Air Compliance and Permitting
- Greenhouse Gas Reporting
- Air Dispersion Modeling
- Vapor Intrusion Analysis

### CIVIL ENGINEERING

- Predevelopment Site Investigations
- Stormwater Management / BMP Design
- Erosion & Sedimentation Control / NPDES Permitting
- Utility Design
- Site Infrastructure Maintenance / Rehabilitation
- Geotechnical Engineering
- Site Grading / Earthwork Analysis
- Slope Stability/Retaining Structure Design
- Landslide Assessment/Remediation
- Pavement Evaluation and Rehabilitation
- ADA Accessibility Analysis
- Integrated Project Delivery
- Traffic Engineering
- Transportation Planning
- Traffic Signal Design
- Roadway Design
- Landscape Architecture
- Sustainability Planning / Design

### ECOLOGICAL SCIENCES

- Wetlands and Waters Delineations
- Clean Water Act, Section 401/404 Permitting
- Ecosystem Restoration
- Soil Science & Phytoremediation
- Water Quality & Sediment Surveys
- Threatened & Endangered Species Surveys/ Wildlife Surveys
- Fish & Macroinvertebrate Surveys
- Aquatic & Terrestrial Habitat Surveys
- Clean Water Act, 316 (a) & (b) Permitting
- Wetland & Stream Mitigation Design
- Ecological Risk Assessment & Land Restoration
- Wetland AMD Treatment

### ENVIRONMENTAL ENGINEERING AND SCIENCES

- Auditing & Compliance Plans
- Phase I & II Assessments
- Property Condition Assessments
- Site Characterization
- Risk Assessments
- RCRA/CERCLA
- Brownfield Redevelopment Services
- Soil/Groundwater Remediation Systems
- Groundwater Monitoring & Assessment
- Hydrogeology & Groundwater Modeling
- Stormwater Sampling & Permitting
- NPDES Permitting Support
- Environmental Management Systems Development

### SURVEY/GEOSPATIAL SERVICES

- Topographic Surveys
- ALTA NSPS Land Title Surveys
- Boundary Retracement Surveys
- Horizontal & Vertical Control Surveys
- 3-D Scanning Services
- Volumetric Surveys
- Construction Surveys / Staking
- Oil and Gas Pipeline Surveys
- Unmanned Aerial Services
- Highway R/W Surveys
- As-built Surveys
- Bathymetric/Hydrographic Surveys
- LiDAR Surveys – Short and Long Range

### WASTE MANAGEMENT

- Site Selection and Characterization
- Merger & Acquisition Due Diligence
- Landfill Design & Permitting
- Transfer Station & MRF Design & Permitting
- Hydrogeologic Site Investigations
- Environmental Monitoring/Compliance
- Leachate Management and Treatment
- Air Compliance & Permitting
- Landfill Gas Management
- LFGTE and Renewables
- O & M of Control Systems
- CCR & Industrial Waste Management
- Waste Characterization
- Solid Waste Facility Operations Audits and Consulting
- Construction Quality Assurance

### WATER RESOURCES

- Stormwater BMP Design & Inspections
- Compliance Audits
- NPDES Permit Negotiation
- Watershed Planning & Restoration
- Flood Routing and FEMA Map Revisions
- TMDL Modeling & Monitoring
- Water Quality & Quantity Modeling
- Low Impact Development Design
- Erosion & Sediment Control Design and Inspection
- Water Quality BMP Testing
- Stream Assessments & Restoration
- Stormwater Piping & Culvert Inspections
- Municipal Water & Wastewater Treatment
- Industrial Process Water Design
- Industrial Wastewater Treatment

### SPECIALTY SERVICES

- Cultural Resource Management
- Architectural History Investigations
- Archaeological Investigations
- GPS / GIS Services
- Web and Mobile Application Development
- Asset and Information Management
- Economic Master Plans
- Facility Master Plans
- Site Selection Studies
- Airport –Related Development Planning
- Site Capacity / Development Feasibility
- Site Reuse Planning
- Business Attraction Strategies
- Structural Engineering
- Forensic Engineering
- Expert Witness Testimony
- Design/Build Services
- Construction Services
- Construction Management
- IBC Inspection Services

**Locations**

**ARIZONA**

**LAKE HAVASU CITY**

60 S Acoma Boulevard South, Suite C106  
Lake Havasu City, AZ 86403  
Toll Free: 833-815-9640

**PHOENIX**

11811 North Tatum Blvd., Suite 3057  
Phoenix, AZ 85028  
Toll Free: 877-231-2324

**ILLINOIS**

**CHICAGO**

1230 East Diehl Road, Suite 200  
Naperville, IL 60563  
Toll Free: 877-963-6026

**INDIANA**

**INDIANAPOLIS**

530 E. Ohio Street, Suite G  
Indianapolis, IN 46204  
Toll Free: 877-746-0749

**KANSAS**

**KANSAS CITY**

9531 Alden Street  
Lenexa, KS 66215  
Toll Free: 866-250-3679

**MASSACHUSETTS**

**BOSTON**

31 Bellows Road  
Raynham, MA 02767  
Toll Free: 866-312-2024

**MISSOURI**

**ST. LOUIS**

4848 Park 370 Blvd., Suite F  
Hazelwood, MO 63042  
Toll Free: 866-250-3679

**NEW YORK**

**ALBANY**

331 Ushers Road, Suite 19  
Ballston Lake, NY 12019  
Phone: 518-406-3700

**NORTH CAROLINA**

**CHARLOTTE**

3701 Arco Corporate Dr., Suite 400  
Charlotte, NC 28273  
Toll Free: 855-859-9932

**OHIO**

**CINCINNATI**

5899 Montclair Blvd  
Cincinnati, OH 45150  
Toll Free: 800-759-5614

**CLEVELAND**

6151 Wilson Mills Road, Suite 100  
Highland Heights, OH 44143  
Toll Free: 800-365-2324

**COLUMBUS**

250 Old Wilson Bridge Road, Suite 250  
Worthington, OH 43085  
Toll Free: 888-598-6808

**TOLEDO**

4841 Monroe Street, Suite 103  
Toledo, OH 43623  
Toll Free: 855-274-2324

**OKLAHOMA**

**OKLAHOMA CITY**

4045 NW 64th Street, Suite 415  
Oklahoma City, OK 73116  
Phone: 405-246-9411

**PENNSYLVANIA**

**EXPORT**

4000 Triangle Lane, Suite 200  
Export, PA 15632  
Toll Free: 800-899-3610

**PHILADELPHIA**

370 East Maple Avenue, Suite 304  
Langhorne, PA 19047  
Toll Free: 888-267-7891

**PITTSBURGH**

333 Baldwin Road  
Pittsburgh, PA 15205  
Toll Free: 800-365-2324

**SAYRE**

703 S. Elmer Avenue, Suite 125  
Sayre, PA 18840  
Toll Free: 877-389-1852

**SOUTH CAROLINA**

**GREENVILLE**

530 Howell Rd., Suite 203  
Greenville, SC 29615  
Toll Free: 855-574-4331

**TENNESSEE**

**KNOXVILLE**

2704 Cherokee Farm Way, Suite 101  
Knoxville, TN 37920  
Phone: 865-977-9997

**NASHVILLE**

325 Seaboard Lane, Suite 170  
Franklin, TN 37067  
Toll Free: 800-763-2326

**SEVIERVILLE**

229 Prince Street  
Sevierville, TN 37862  
Phone: 865-774-7771

**TEXAS**

**AUSTIN**

3711 S. MoPac Expressway  
Building 1, Suite 550  
Austin, TX 78746  
Phone: 512-329-0006

**WEST VIRGINIA**

**BRIDGEPORT**

600 Marketplace Avenue, Suite 200  
Bridgeport, WV 26330  
Toll Free: 855-488-9539

## 2.0 Service Capabilities for the Real Estate Industry

CEC performs civil engineering and site development services for institutional, retail, commercial, industrial, recreational and residential projects throughout the eastern and mid-western United States. Our services include predevelopment site investigations, site grading analyses, traffic engineering analysis, erosion and sedimentation control design and NPDES permitting, stormwater management, utility and parking lot/roadway design. CEC has assisted developers, architects, retailers, private industry and public agencies/authorities with the development of cost-effective designs for regional shopping centers, industrial and office parks, health care facilities, institutional facilities, commercial, residential and mixed-use site developments. CEC also has in depth experience in all phases of brownfield redevelopment requiring a thorough knowledge base of environmental engineering services. Our service areas are highlighted as follows:



### 2.1 Pre-Development Site Investigations

CEC offers investigative and due-diligence services to evaluate land development feasibility, identify deficiencies or the potential need for off-site improvements in adjacent roadway system, identify utility capacity constraints, floodplain, jurisdictional wetlands/waters issues, geologic conditions, regulatory approval processes, threatened and endangered species, and other site parameters and/or constraints which may impact a proposed development.



#### Due Diligence

One of CEC's core values is integrated services by providing a "one-stop" solution for land use and land development services. CEC's Due Diligence services are designed to assist clients entering into real estate transactions.

CEC provides prudent Due Diligence services to recognize conditions which may result in lower than expected sale price, rental rates, site liability costs or the inability to dispose of or lease the property due to environmental contamination, lack of clear title or other legacy problems. CEC assists our clients to effectively manage these liabilities based on the early identification of potential problems. CEC's environmental services performed during due diligence can include:

- Environmental Assessments (Transaction Screens, Phase I and II Assessments)
- ALTA/Property Surveys
- Property (Facility) Condition Assessments
- Hazardous Material Surveys
- Environmental Compliance Audits
- Floodplain/Floodway Identification
- Geotechnical Assessments
- Preliminary Conceptual Site Planning (Zoning, Grading, etc.)
- Ecological Assessments
- Utility Service Assessments



## 2.2 Planning

CEC combines global economic master planning experience with site development engineering capability to provide innovative, practical solutions to the most complex land planning challenges. Today's competitive economic environment demands creative, comprehensive, coordinated solutions to leverage the greatest return on each business opportunity. CEC develops master plans that are market-responsive and economically viable to provide the greatest chance of project success.



CEC provides a range of economic master planning services, including:

### Economic Master Plans

CEC utilizes a methodology that integrates economic considerations into the process of developing a physical master plan. Market-demand analytics inform land use choices and patterns to appropriately position the project in the marketplace. Conceptual cost estimates help to ensure the project is planned to match available funds. And if required, project financing analyses and options can be incorporated into the process as a means to ensure overall project viability.

### Business Attraction Strategies

CEC develops strategies for business attraction and investment in the project. Working with our market analysis partners, CEC investigates the attributes and characteristics of a region to clearly identify regional strengths, weaknesses, opportunities, and threats. An analysis of industry sector dynamics is performed to identify growth industries and companies. Regional attributes are then synthesized with growth companies to develop a strategy for attracting and retaining businesses.

### Site Selection Studies

CEC performs site selection studies to provide an objective third-party view of often complex choices on site location decisions. Criteria employed includes financial incentives, infrastructure and utilities, labor, site cost, site characteristics & conditions, environmental regulatory issues, zoning and building permits, and permit & system development fees.

### Airport-Related Planning

CEC works with airport authorities, municipal airport operators, and regional economic development entities to prepare land development strategies for non-aeronautical land surrounding airports. With air travel and just-in-time value chains continuing to grow in importance globally, many airports have responded with innovative strategies to attract related business operations to the airport area. CEC taps into these and other market dynamics as a means to uncover optimized strategies for business attraction in the airport area.



### **Site Capacity / Development Feasibility Studies**

CEC develops simple site capacity determinations to identify the preliminary building capacity of a site, often consisting of a site drawing and a corresponding spreadsheet. When warranted, CEC prepares more comprehensive determinations of development feasibility that could include market analysis, master planning, development cost analysis, and projected financial returns.

### **Business Park Master Plans**

CEC prepares master plans for multi-user development parks, including office/business parks, parks to accommodate general and technology industry, research parks associated with universities, and logistics parks accommodating warehouse and shipping uses. Sustainable, live-work-play solutions are incorporated to reduce environmental impacts and grow a sense of community within the park. Infrastructure master plans are an integral part of an overall development park master plan.

### **Facility Master Plans**

CEC develops master plans for single-user sites to accommodate facility-specific needs. Working as part of the overall architectural/engineering design team, CEC develops sustainable site solutions that minimize environmental impacts, lower development costs, and create a sense of place at the facility to encourage harmonious, productive workplace relations.

### **Design/Development Guidelines**

CEC prepares planning and design guidelines to establish minimum standards for the visual theme and overall functionality within a development. Common area addressed in guideline documents include design review process, site design requirements, architecture design requirements, construction responsibilities, and guidelines enforcement.

### **Site Reuse Planning**

CEC develops master plans for repurposing sites that have outlived their original use, including full site reuse and partial reuse involving consolidation of an existing use. Typical reuse planning steps are an evaluation of existing conditions, a market analysis and business attraction strategy, a reuse master plan, and a reuse implementation plan.



## 2.3 Surveying Services

CEC's survey crews utilize a full complement of cutting-edge equipment and technology for data acquisition, including Real Time Kinematics (RTK) and static Global Positioning System (GPS), robotic and conventional Total Stations, automatic and digital levels, data collectors, 3D laser scanners that use terrestrial Light Detection and Ranging (LiDAR) scanning to create spatial imaging, and Unmanned Aerial Vehicle (UAV) technology. Broad-based professional capabilities, specialized experience, and technical competence and capacity have allowed CEC crews to complete numerous projects requiring topographic, boundary, construction, hydrographic/bathymetric, geodetic, route, volumetric, infrared, horizontal and vertical control, and settlement and displacement surveys, as well as due diligence services.



### Conventional Land Survey

- **Horizontal and Vertical Control Surveys** — These applications include photogrammetric control; lake and dam monitoring; waterway channel alignment; tower and transmission line alignment; and site development such as earthwork, utilities, roadway and bridge, oil and gas well pad and pipeline construction control.
- **Topographic Surveys** — CEC employs various topographic techniques depending on site characteristics and requirements such as terrain, vegetation, desired accuracy, and physical improvements.
- **Construction Surveys** — CEC performs surveys of surface/subsurface utilities and stakeouts of roads, bridges, runways, buildings, parking lots, fuel lines, storage tanks, towers, gas well pads, and midstream pipelines. Work also has included construction surveys of upland disposal sites, locks and dams, rivers, lakes, and canals. CEC also performs sedimentation surveys.
- **Boundary and ALTA/NSPS Land Title Surveys** — CEC has completed boundary and route surveys, including American Land Title Association (ALTA) Surveys, as well as mapping for parcels nationwide. All ALTA Surveys are completed to the current national standards and include a review and response to all applicable title exceptions noted in the provided title commitment. ALTA Surveys include the location of all buildings and improvements on the subject property, easements, rights-of-way, and optional "Table A" items such as topography, utilities, zoning information, flood zone identification, parking, building areas, wetland locations, and other requested items.
- **Subdivision, Consolidation, and Easement Surveys** — CEC has completed mortgage surveys, annexations, zoning documents, highway right-of-way plans, subdivision platting, gas well plats, condominium documents, subdivision and consolidation plans, easement exhibits, conveyance documents, and legal descriptions in various local municipalities and counties. CEC is experienced with local and county requirements, approval procedures, and recording processes to assist our clients from start to finish.



- **Volumetric Surveys** — CEC is experienced with performing volumetric computations pertaining to excavation and fill operations. Projects range from mass excavations of commercial sites and landfills to residential building pads.
- **FEMA Elevation Certificates** — CEC has extensive experience preparing FEMA Elevation Certificates as well as Letter of Map Amendment (LOMA) documents for commercial, retail, municipal, and industrial properties, as well as residential developments. The required elevations are located on the applicable vertical datum, the appropriate structure type is identified, and flood studies and maps are reviewed to ascertain the base flood elevation affecting the subject property. These services are typically completed to secure flood hazard insurance, indicate flood hazard insurance is not required, or comply with building permit requirements.



#### **LiDAR/Scanning Services**

CEC utilizes both Phase-Based and Time-of-Flight LiDAR scanners, the performance of which can capture objects up to and more than 1,000 feet away. Using LiDAR data, CEC can create an extremely detailed and dimensionally accurate 3D image using millions of acquired intelligent data points. Downloaded directly to a laptop at the project site, LiDAR generates the 3D model in real time, allowing immediate decision-making ability. Typical deliverables are highly accurate and include:

- 2D CAD Data in plan, elevation, or cross-sectional view
- 3D CAD Data
- Animated fly-throughs of the point cloud
- Text, RCS, DXF, TIN, or XML file of the point cloud



### UAV Technology

CEC offers this new and exciting technology for a wide range of data acquisition applications to benefit commercial and industrial clients. UAVs are often faster, cheaper, safer, and more accurate than conventional alternatives like satellites, planes, or helicopters.

- **Aerial Recording** — Armed with the ability to capture 14 megapixel photos or record 1080p HD video from a unique vantage point, a typical UAV data file can contain 10 to 30 million points due to lower flight heights and high-resolution photographs compared to a conventional aerial survey data file that may only contain up to 50,000 points. Aerial photographs can be used to display time-lapse project progress, monitor remote locations, or provide photography to be used in presentations, displays, or advertising.

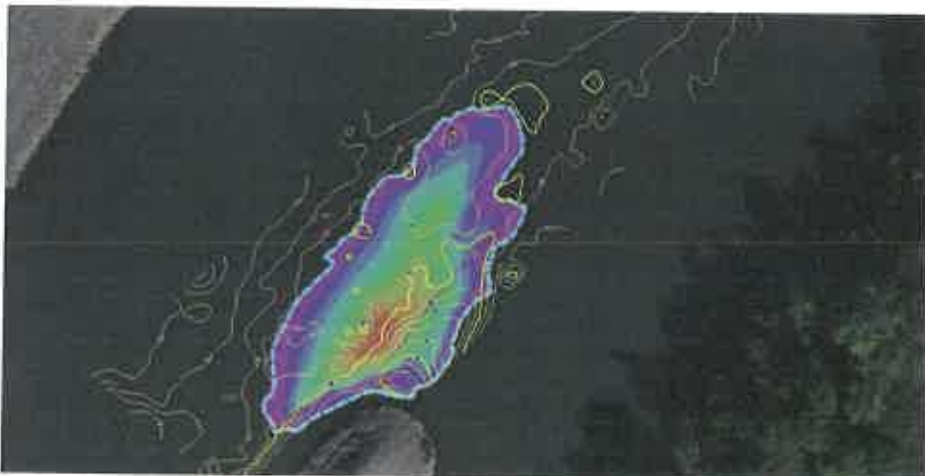
The ability to shoot high-quality, geotagged photos allows for real-time GIS data acquisition and eliminates the need to contract aircraft or work around other schedules. CEC's UAVs collect imagery that can be imported into CAD programs and GIS databases, stitched together to generate 3D reconstructions, or used to develop topographic and aerial base mapping.

- **Visual Inspections** — The ability to fly in close proximity to, and optically zoom in on, a target means that visual inspections of difficult-to-access objects or structures, such as stacks, bridges, towers, pipe racks, etc., can be accomplished quickly and safely from a distance. The high-resolution and HD-quality visual images can then be downloaded and electronically transferred to a host of users.



### Bathymetric/Hydrographic Surveys

CEC performs bathymetric/hydrographic surveys using its in-house fleet of survey vessels and depth-sounding equipment to map underwater environments. Surveys are performed to assist with maintenance dredging, volume estimates, intake and outfall planning and design, harbor facility planning and design, hydrologic/hydraulic cross-section data, horizontal directional drilling (HDD), pre- and post-demolition surveys, impoundment life expectancy, residence time calculations, and draft verification surveys.



## 2.4 Civil Engineering/Land Development

### Site Grading Analyses

CEC is experienced in the preparation of site grading plans producing balanced earthwork conditions. We have developed and evaluated grading plans for sites involving as little as a few thousand cubic yards to over several million cubic yards of earthmoving. Our site grading services consider other pertinent aspects of site development, such as slope stability, drainage, and stormwater management.



### Erosion and Sedimentation Control

CEC staff members have extensive hydrologic and hydraulic design experience and a proven track record of successfully obtaining local, state, and federal erosion and sedimentation control permits and National Pollutant Discharge Elimination System (NPDES) permits for discharges of stormwater from construction and industrial activities. Our objective is to integrate erosion and sedimentation control with post development stormwater management to reduce overall site construction costs.

### Stormwater Management

CEC offers a comprehensive scope of stormwater management consulting services, including flood routing, hydrologic and hydraulic analysis, stormwater detention water quality treatment Best Management Practices (BMPs) and FEMA flood insurance rate map revisions. Our utilization of state-of-the-practice computer software enables CEC to analyze alternative stormwater detention measures and methodologies to satisfy site-specific regulatory requirements. We have successfully solved difficult stormwater management problems using both surface and underground detention measures. CEC has implemented stormwater detention measures for singular sites and for watersheds of greater than 8,000 acres. We have also designed sustainable stormwater management measures to support project Leadership in Energy and Environmental Design (LEED) certification.



### Utility Design

CEC staff members design sanitary sewer collection and conveyance systems, sewage pumping, and on-site treatment facilities, and water distribution systems for domestic and fire protection needs. We also prepare state and federal permits for water and wastewater system construction. Our staff has also demonstrated the ability to effectively coordinate and negotiate with electric, natural gas, telephone, and cable television utility companies to provide service to new site developments.

### Parking Lot/Roadway Design

CEC staff has diverse design capabilities and experience for surface parking facilities for all types of real estate development projects. Our parking lot designs address vehicle and truck maneuverability and turning movements and ADA requirements. CEC has also designed porous pavement systems and other sustainable pavement design measures. CEC also has designed public and private access roads and road improvement projects and prepared state department of transportation highway occupancy permit applications.



### Preparation of Construction Documents

CEC prepares complete construction plans and specifications for site development projects. CEC has developed a reputation for producing quality construction documents that are "buildable" and within reasonable construction budgets. CEC can prepare site development construction specifications in CSI, Master Format, or other desired formats. We utilize AutoCAD Civil 3-D as well as other CAD software applications to meet our client's needs.



## 2.5 Landscape Architecture & Sustainable Design

CEC provides a diverse scope of landscape architectural services to real estate developers, institutional facilities, business and industry. CEC's landscape architecture practice focuses on land development design, including large and small scale land use planning, master development planning, feasibility studies and site plan sketches, preliminary grading plans, stormwater management studies, and landscape design and irrigation. CEC has a broad range of site planning and design experience for all aspects of land development. We regularly assist our clients in the following areas:

### Feasibility Studies

CEC prepares sketch site plans and feasibility studies to assist in the preparation of preliminary budgets and financing, as well as evaluating overall development potential. Our feasibility studies include review of local zoning and land development ordinances, state and federal regulations, site access and roadway patterns, geotechnical issues, floodplain issues, topographic constraints, existing and proposed infrastructure review, stormwater management issues, preservation of natural site features such as existing vegetation and water courses, and review of wetlands and other environmental considerations. CEC staff members have completed site development feasibility studies for commercial, retail, industrial, institutional and residential development sites of less than five acres to over several hundred acres.



### Sustainability Planning / Design

Sustainable design and development is the fastest growing practice in the real estate development, engineering and architectural industries. The United States Green Building Council's (USGBC) LEED rating system is the most widely used measure of sustainable design. CEC regularly participates with the architect, building system engineers and owner to identify, evaluate and implement sustainable design and construction measures into real estate development and re-development projects. Consideration of sustainability using the LEED rating system begins with site selection context and includes numerous components of civil engineering, land planning, landscape architecture and ecology services. CEC routinely plans and leads the sustainable site design aspects of a project pursuing LEED certification, by focusing on the utility and water savings, life cycle cost benefits and the public image of "Green/Sustainable Projects". CEC staff participates with the owner and architect to form a creative and innovative design team to meet the sustainability and LEED project design goals. CEC's sustainable practices focus on the following areas:

- Community Context and Site Selection
  - ◆ Community Connectivity
  - ◆ Public and Alternative Transportation
  - ◆ Community and Parking Density
  - ◆ Brownfield Redevelopment
  - ◆ Habitat Restoration
- Sustainable Site Development Support
  - ◆ Site Construction Activity Reduction (Including Erosion Control)
  - ◆ Heat Island Reduction (paving and vegetated roofs)
  - ◆ Open-space Maximization
  - ◆ Light Pollution Reduction (Dark Sky lighting)
  - ◆ Site Prescreening for Ground-based Geothermal Systems
- Materials Re-Use and Repurposing
  - ◆ Inventory of Existing Properties for Potential Repurposing of Site Materials
  - ◆ Recycling and Re-Use of Demolition Materials
- Site Water Resources
  - ◆ Sustainable Stormwater Management Systems/Processes
  - ◆ Innovative Wastewater Treatment Systems/Processes
  - ◆ Stormwater Re-Use
  - ◆ Groundwater Recharge
- Sustainable Landscaping
  - ◆ Sustainable Landscape Design and Native Plant Species
  - ◆ Irrigation Systems Using Captured Stormwater Runoff
- Ecological Restoration
  - ◆ Wetlands and Waters Restoration and Enhancement
  - ◆ Bio-Habitat Area Design
- USGBC LEED Documentation
  - ◆ Calculations and LEED Rating Documentation
  - ◆ Performance Monitoring



*Vegetated bioswale*



## 2.6 Transportation Engineering

CEC's transportation engineers have wide-ranging knowledge and experience with state and local requirements when preparing Traffic Studies, Highway Permit Plans, Roadway Improvement Plans and Traffic Signal Plans.

CEC's extensive experience allows us to provide Due Diligence Studies, including Feasibility Studies and Alternatives Analyses, at the onset of site selection. The diversity in the experience of our traffic engineers allows us to conduct studies that form the basis of sound and informed decision making, from isolated intersections to congested corridors, determining the impacts of newly proposed development or analyzing the deficiencies in the existing transportation system.

With consideration of the safety of the motoring public always in the forefront of all decisions, CEC provides thorough and detailed analysis of existing and future traffic conditions and develops cost-effective, practical solutions for individual property owners, architects, engineers, commercial developers, institutions and public agencies. These services include:

- Intersection and Driveway Studies
- Site Access and Circulation Evaluations
- Trip Generation Studies
- Traffic Signal and Auxiliary Turn Lane Warrants Evaluations
- Queuing Studies

These individual services can provide an evaluation of specific deficiencies but, when combined, these individual services form the basis of a full Traffic Study.

Following the completion of the Traffic Study, CEC's engineers can apply our extensive experience to public presentations and providing expert testimony.

Whether a project starts out as a Traffic Study or originates from a pre-analyzed need, CEC's roadway engineers have a wide ranging knowledge and experience in preparing plans for the design of roadway and traffic signal improvements. From simple driveway permits and isolated intersections to auxiliary turn lane and traffic signal system design, CEC's roadway engineers provide constructible solutions to add capacity to and improve the flow of traffic on the existing roadway system.

The solution to today's transportation deficiencies is not always as simple as construction of an auxiliary turn lane or the installation of a traffic signal. Whether considering the use of a roundabout in lieu of a traffic signal or recommending the implementation of traffic calming measures to slow traffic through a neighborhood, CEC is on the forefront of current transportation alternatives.

Finally, the experience of CEC's transportation engineers allows us not only to evaluate the conditions and design the improvements, but to review the analyses and designs prepared by other engineers.



## 2.7 Geotechnical Engineering

CEC offers a complete range of geotechnical investigation, analysis, design, and field testing services. CEC's staff of geotechnical engineers and geologists has experience performing geotechnical investigations and designs for many types of projects. These projects include:

- Feasibility Studies
- Landfill and Impoundment Cell Construction & Closure
- Site Development
- Failure Investigations
  - ♦ Foundations
  - ♦ Retaining Walls
  - ♦ Dams
- Ground Movement
  - ♦ Landslides
  - ♦ Mine Subsidence
  - ♦ Expansive Soils and Rock
- Cutoff Walls
  - ♦ Slurry Walls
  - ♦ Sheet Piling Walls
  - ♦ Biopolymer Trenches
- Structural Stabilization
  - ♦ Retaining Walls
  - ♦ Foundations
- Ground Improvement
  - ♦ Lime Stabilization
  - ♦ Deep Dynamic Compaction
  - ♦ Grouting
  - ♦ Wick Drains
  - ♦ Preloading
- Engineer-Led Specialty Geotechnical Design-Build
- Mine Reclamation
- Dams
  - ♦ Design
  - ♦ Inspection



Our staff is knowledgeable of the current trends in geotechnical engineering, but is founded in its basic principles. This knowledge is reinforced by our staff's extensive experience and complemented by the latest computer hardware and software for data analysis, project management, logging, engineering design, and cost control. This enables us to develop a precise understanding of current conditions and to simulate proposed conditions.

Our comprehensive geotechnical services include:

- Geotechnical Analyses
- Earthwork Design & Recommendations
- Foundation Analysis & Design
- Instrumentation & Monitoring Plans
- Geologic Reconnaissance
- Groundwater Cutoff & Drain Designs
- Grouting & Ground Improvement Design
- Landslide Investigation & Stabilization
- Mine Subsidence Investigations, Risk Assessments & Stabilization Plans
- Pavement Analysis & Design
- Seepage Analyses
- Site Development Feasibility Studies
- Soil & Bedrock Stabilization
- Slope Stability & Retaining Structure Design
- Subsurface Investigation, Sampling & Testing
- Geotechnical Construction Phase Services
- Forensic Engineering

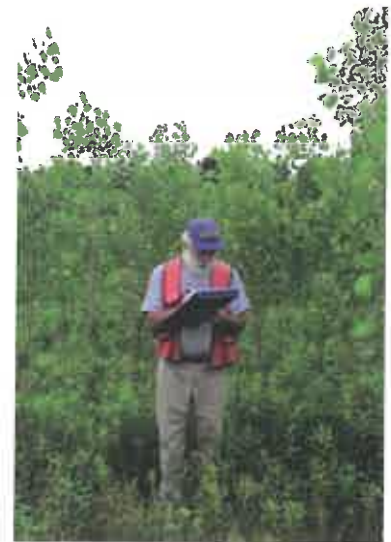
## 2.8 Ecological & Cultural Resources

### Ecological Resources

CEC addresses and solves jurisdictional wetlands and waters issues associated with land development and environmental remediation projects. We have extensive project experience in dealing with the regulatory agencies on wetlands identifications, delineations, state/federal permitting, and in designing successful programs for wetlands and stream mitigation. Our team of ecological specialists has the in-depth knowledge of regulatory requirements and most up-to-date project experience to produce positive, timely results.

Wetlands assessments include site reconnaissance, historical background studies, and integration of proposed developments on U.S. Geological Survey topographic maps, Natural Resource Conservation Service (NRCS) soil surveys, and National Wetland Inventory (NWI) maps. Based on a review of site conditions, CEC identifies the preliminary boundaries of jurisdictional wetlands affected by the land development in accordance with the requirements of the applicable regulatory criteria. At the present time, the 1987 U.S. Army Corps of Engineers Wetlands Delineation Manual is applicable to federal and most state regulatory programs.

Encroachments upon wetlands and streams require state and/or federal permits, and CEC can recommend a permit application strategy based on the results of wetlands delineation, the land developer's objectives, and regulatory requirements. We have the expertise to prepare all permit applications and required supporting documentation, including identification and assessment of wetlands functions and values, alternatives analyses, and public benefits justification. CEC can design wetlands enhancement and replacement mitigation measures, and also prepare the necessary construction documentation, drawings, and specifications to support the overall project.



*2.7-acre emergent constructed wetland, Greenville, Pennsylvania*



### Archaeological, Historical and Cultural Resources

CEC's Cultural Resource Management services guide compliance with Section 106 of the National Historic Preservation Act of 1966 (as amended) along with FHWA, FERC, US Army Corps and other Federal and State regulations. CEC provides a broad range of services including:

- Archaeological Investigations
  - ♦ Phase I Reconnaissance Surveys
  - ♦ Phase II Site Assessments
  - ♦ Phase III Data Recovery/Site Mitigation
  - ♦ Deep Testing
  - ♦ Prehistoric/Historic Artifact Analysis
  - ♦ Artifact Curation
- Architectural History (Above-ground) Resource Investigations
- Area of Potential Effect (APE) Determinations
- National Register of Historic Places (NRHP) Eligibility Determinations
- Assessment of Effects
- Agency and Consulting Party Coordination
- Memorandum of Agreement
- Cultural Resource Management Plans



CEC's expanded capabilities provide the full suite of National Environmental Policy Act (NEPA) services.

CEC's professionals meet or exceed the Secretary of the Interior's Professional Qualification Standards for their respective fields, and each has years of direct experience completing cultural resource investigations ranging from Phase I Reconnaissance Surveys for projects such as roads, pipelines, military facilities and coal mines, to Phase II Site Assessments and Phase III Data Recovery/Site Mitigation for multiple resources.

In addition to NRHP Eligibility Determinations for buildings and structures, CEC provides:

- NRHP Nominations
- Historic Preservation Tax Credit Counseling
- Viewshed Analysis
- GPS/GIS Resource Mapping
- Archival Research
- Historic Context Development
- Building Condition Assessments
- Content for Informational Brochures, Exhibits, and Signage
- Historic American Buildings Survey (HABS) Documentation
- Historic American Engineering Record (HAER) Documentation

## **2.9 Construction Phase Services**

CEC has experienced professionals, technicians, and inspectors, together with the field equipment necessary to provide complete construction phase services on a wide variety of projects. These services include:

- As-Built Drawings
- Certification Reports
- Confirmation Sampling
- Construction Management
- Construction Quality Assurance/Special Inspections per Chapter 17 of the International Building Code
- Fill Placement Monitoring
- Health & Safety Monitoring

CEC has provided construction management services to our clients beginning with the bidding process through project closeout. CEC has developed bid documents, solicited and evaluated bids, and negotiated contracts for site development and environmental remediation projects. During construction, CEC can assist with contractor activities to meet specifications and schedule requirements. This effort generally involves the monitoring of project costs and change orders. Finally, project close-out activities, including site restoration, project completion requirements, and final payments can be administered by CEC.

CEC has monitored the construction of a wide range of civil and geotechnical engineering projects. These projects include large earthmoving projects where CEC was responsible for verifying the acceptability of borrow sources and fill materials, that fill has been placed in accordance with specifications, and that cuts and fills are properly constructed and stabilized. CEC has monitored the implementation of grouting programs to fill mine voids and stabilize soils and bedrock to reduce the risks of surface subsidence. During grouting programs, CEC personnel monitor grout takes and propose procedural modifications, as necessary, to focus on areas requiring additional reinforcement. CEC has also monitored the installation of drainage facilities, such as ponds, ditches, and underdrains, including the construction of landslide correction and earth retaining structures.

Qualified CEC technicians provide Special Inspections per Chapter 17 of the International Building Code. These services include monitoring materials and structural items as they relate to the building structure. Special inspection may include observations and testing/sampling of soil conditions and earthwork, concrete, masonry, reinforcing steel, structural steel (including shear connections, cold-formed steel, welds, and anchor bolt connections), spray applied fire proofing and substrate, wood construction, and exterior insulation and finish systems (EIFS).

## 2.10 Post-Construction Services

### Site Infrastructure Maintenance

CEC inspects, monitors, maintains, restores, repairs and improves property infrastructure. The need for such services can arise from damage, age, poor maintenance of systems, and/or changing regulatory requirements. CEC's one-stop approach saves time and money, while assisting clients with compliance and maintaining the safety and aesthetics of their properties.



- **Stormwater Facilities** — CEC inspects and maintains stormwater facilities to ensure stormwater infrastructure is functioning in accordance with design and regulatory requirements. CEC can provide stormwater facility conversions from erosion control ponds to permanent stormwater detention/retention facilities. CEC's engineers and construction personnel are experienced with the design and functionality of the various types of stormwater best management practices (BMPs) used for controlling, treating and conveying stormwater runoff. These professionals assist in evaluating stormwater infrastructure while providing an effective monitoring, maintenance and turnkey construction program to extend and enhance a site or facility life.
- **Site Surface Features** — Site surface feature review and assessment is intended to identify areas and issues that need to be addressed to maintain the safety, stability and functionality of a site. The results of the review are used to develop recommendations for maintenance and remedial work. Such site surface features can include:
  - ♦ Slopes and embankments
  - ♦ Sidewalks and crosswalks
  - ♦ Pavement markings and traffic signage
  - ♦ Surface drainage controls, such as diversion ditches, swales, riprap, etc.
  - ♦ Slope benches and drainage outlets

CEC offers review, engineering and construction management services to maintain your real estate asset.

- **Site Utilities** — The location of utility infrastructure is an important element of property maintenance, particularly in the absence of as-built information, or if site expansions and/or modifications are proposed. To locate underground utility infrastructure, CEC offers a comprehensive scope of geophysical services and technologies. Geophysical methods can be used with video camera inspections of sanitary sewers and storm sewers to locate and evaluate existing conditions, while fire hydrant flow testing evaluates the water system flow rates.
- **Site Landscaping** — CEC's unique mix of ecological, civil engineering, landscape architecture and construction management services enhances the natural environment of existing pond and landscaped areas – turning functional assets into amenities. CEC creates natural environments, installing native species and improving biodiversity to enhance water quality and reduce the amount of erosion occurring over time. CEC works with property management personnel to develop a sustainable approach to



stormwater management and the landscape along with the appropriate maintenance schedules.

- **Parking and Pavement** — CEC reviews existing site layouts to evaluate the efficiency of site parking, internal access roads and external driveways, and pedestrian and vehicular safety. CEC also manages pavement construction rehabilitation and maintenance, and utilizes the Pavement Surface Evaluation and Rating (PASER) or ASTM Pavement Condition Index (PCI) systems to assess existing pavements and parking lots. Subsurface explorations assess the as-built conditions and thickness of the existing pavement components and the pavement subgrade materials. CEC's geotechnical engineers develop cost-effective methods to rehabilitate pavements, and recommend programs to extend the life of the repaired pavement.



### **Pavement Evaluation and Rehabilitation**

For existing pavements, CEC utilizes the Pavement Surface Evaluation and Rating (PASER) or ASTM Pavement Condition Index (PCI) systems to assess the current pavement condition. PASER or PCI system ratings provide an easy comparative evaluation that provides for cost-effective decisions relative to the maintenance and rehabilitation of the existing pavement. CEC performs subsurface explorations to assess the as-built conditions and thicknesses of the existing pavement components and the pavement subgrade materials. Along with an analysis of the existing pavement, site pavement rehabilitation plans, details and bid documents are prepared for use during maintenance and rehabilitation. CEC incorporates a wide variety of pavement rehabilitation/maintenance techniques, such as overlays, seals, joint repairs, subgrade improvements, etc., to maximize cost-effectiveness.

### **ADA Accessibility Services**

CEC evaluates site parking fields relative to current federal and state/local ADA criteria, including the number/type of accessible spaces, loading aisle and accessible path criteria, maximum gradients and curb ramps. If pavement rehabilitation is required to meet compliance, this provides a unique opportunity to upgrade the parking lots and roadways in an economical manner to meet local zoning requirements, state Department of Transportation requirements, and/or ADA criteria.

Using topographic survey information for the ADA parking fields, accessible paths and curb ramps, site gradients and dimensional features are analyzed with reports and figures prepared highlighting the non-compliant ADA features and providing recommendations to address areas of concern. Plans and specifications detailing the remediation for any required construction include demolition plans, pavement remediation plans, site improvement plans (including new/revised curbing, sidewalks, curb ramps, etc.), grading plans with spot elevations specific to ADA features, restriping plans, and detail sheets.

CEC offers clients variable levels of ADA due diligence ranging from cursory to full ADA surveys and estimates to remediate ADA accessibility deficiencies, including:

- Tier I (Visual) Accessibility Survey
  - ◆ Path of Travel
  - ◆ Parking
  - ◆ Public Toilet Rooms
  - ◆ ADA Compliant Guestrooms (for hospitality use facilities, such as hotels)
  - ◆ Elevators
- Tier II Survey
  - ◆ Building History
  - ◆ Parking
  - ◆ Ramps
  - ◆ Entrances/Exits
  - ◆ Paths of Travel
  - ◆ Elevators
  - ◆ Toilet Rooms
  - ◆ Guestrooms
- Tier III Survey

A Tier III Survey typically involves a full, in-depth survey of a property in full compliance with the ADA and 2010 ADA Accessibility Guidelines (ADAAG).



## 2.11 Additional Professional Services

### GIS, Information & Data Management

CEC is an industry leader in the development of innovative data base applications linked to Geographic Information Systems (GIS), providing a variety of spatial analysis and data management services to clients across many disciplines. We develop and maintain project-specific spatial databases for ecological monitoring, water resource, infrastructure, and related environmental data. GIS analysts, data managers and software developers routinely create relational databases, perform spatial analysis and develop custom mapping products, often working closely with field staff to integrate assessment, monitoring, and other field-derived data.



In addition, CEC develops and hosts custom web-based GIS applications for several clients in a variety of disciplines. We use ArcGIS products, including desktop and web-based solutions, in conjunction with SQL database technology and other web development tools. Our GIS and data management services include:

- Spatial analysis and image analysis
- Geoprocessing
- Cartography and visualization
- Database management solutions
- Custom application development
- Web GIS and internet mapping
- Field and survey data integration
- Mobile & Tablet-based Data Collection Tools

### Environmental Audits & Hazard Assessments

CEC provides environmental auditing services to industrial clients, law firms, site developers, and financial institutions throughout the United States. Services are performed in a phased manner to focus on key compliance and liability issues, often presenting findings in terms of expected capital and operational expenditures necessary to correct problems. CEC's approach allows for adjustments to both the focus and scope of projects as information is collected, providing opportunity for cost savings and integration of all the environmental issues. These audits assist corporate management in understanding environmental liabilities, both short and long-term, and to develop programs to minimize risk exposure.

CEC evaluates the regulatory compliance of current and past activities with the requirements of major environmental laws and regulations, including RCRA, CERCLA, CWA, CAA, TSCA, SDWA, OSHA, and related state and local requirements. We focus on identifying non-compliance issues, recommend appropriate solutions, and present their estimated costs and offer the following support in these areas:

- Environmental Liability Assessments
- Human Health Risk Assessments
- Environmental Policy Development
- Permit & Regulatory Compliance Status
- Financial Risk Analysis

CEC assists with environmental assessments and safety analyses related to existing facilities and on-site manufacturing processes. The purpose of such assessments is early detection of hazards attendant to facility operations and support activities. Following a detailed assessment of the facility's operations, a comprehensive report is developed which includes a prioritized list of deficiencies as well as recommended corrective actions and controls to provide safe operations.

CEC's hazard assessment services include a review of relevant information concerning facility design, process operations, equipment, materials, utilities, and interfaces; a comprehensive assessment of environmental health and safety hazards associated with facility operations; development of integrated environmental controls and hazardous waste handling systems, including waste minimization plans; an assessment of process control and instrumentation, including process flow analysis and programmable control of critical operations; and human factors analysis including ergonomics assessment, work loading studies, fatigue analysis, tool use studies, and product flow evaluations.



#### **Environmental Assessment & Characterization**

CEC has performed preliminary site assessments at both active and inactive facilities across the country, as well as site characterization studies, including Phase II environmental assessments and remedial investigations at RCRA and Superfund sites. CEC stresses senior personnel involvement during these projects, particularly during the initial phases of the project to provide proper interpretation of available data, awareness of potential environmental liabilities, and thorough scoping and focusing of investigative programs. CEC's site assessment and characterization services include:

- Phase I Environmental Assessments
- Regulated Materials Surveys
- Phase II Site Assessments
- Remedial Investigations/ Site Characterization
- Contaminant Fate & Transport Analysis
- Risk Assessment & Modeling

CEC has performed preliminary site assessments for single properties or multiple facilities as part of corporate acquisitions or financing applications. The approach to preliminary site assessments begins with a detailed review of historical records, including information on past property ownership, environmental regulatory agency records, and aerial photographs. This is followed by a comprehensive inspection of the facility to evaluate potential environmental issues at the site. Site inspections include interviews with knowledgeable personnel, identification of waste disposal facilities or underground storage tanks, asbestos surveys, assessment of adjacent properties, and preliminary screening investigations.

### Site Rehabilitation

CEC aggressively works to remediate and rehabilitate active production or idle legacy sites. CEC's projects begin with developing a concrete understanding of the objectives and designing the best strategy to achieve client goals within the confinement of imposed regulatory programs governing the project.

CEC has developed a broad scope of technical expertise to assist clients throughout a site remediation and rehabilitation project. These services include:

- Regulatory Compliance Expertise
- Sampling & Characterization of Affected Media
- Alternatives Analyses, Risk Assessments & Remedial Design
- Bid Document Preparation
- Construction Quality Assurance & Oversight
- Turnkey Remediation Experience (including services relating to asbestos and lead abatement)
- Preparation of Health & Safety Plans
- Owner's Representative of Site Building Demolition Project



*UPMC Sports Complex, Pittsburgh, PA,  
2002 Phoenix Award Showcase Site  
Former site of LTV Pittsburgh Works,  
South Side*

### Brownfield Redevelopment Services

CEC has extensive experience with brownfields issues and the legislative and regulatory requirements of the state programs within the northeastern and midwestern states. We have worked with various community and economic development agencies, as well as commercial and industrial clients to assess, remediate, and redevelop properties in Illinois, Indiana, Ohio, and Pennsylvania.

Four of the projects CEC has provided services for have received national and regional recognition as a "National Phoenix Award," "Regional Showcase Site" or other awards. The National Phoenix Award is an economic and environmental award for urban renaissance that exemplifies the remediation and economic development opportunities of abandoned or under-utilized industrial sites, offering quality-of-life technology and community improvements. The projects are graded on their magnitude, innovative brownfield techniques, environmental regulatory issues, site selection and community impact.

CEC has submitted grant applications and successfully secured grants for our clients, in addition to assisting with amendments to existing grants. Funds are used to remediate environmental impairments at project sites, beginning with the initial investigation of a brownfield site for future redevelopment.



# Pennwood Commons Flex Buildings

Cranberry Township, Pennsylvania

### Owner Objective

Pennwood Commons II, LLC proposed the development of two flex buildings on Pennwood Place in Cranberry Township, Pennsylvania. The proposed flex buildings will be located on two adjacent parcels within the Regional Industrial Development Corporation's Thorn Hill Industrial Park. The project includes two ±50,000 square foot buildings, parking areas with access to Pennwood Place, and an outdoor patio. CEC provided professional engineering services as part of a project team that also included Pfaffman + Associates and Continental Building Systems.

### CEC Approach

CEC provided the survey, environmental services, site/civil engineering, geotechnical engineering, ecological services, and landscape design for the project. CEC's scope of site/civil services included topographic, boundary, and utilities surveys, preliminary site planning, site layout, site grading and earthwork analysis, utility design and coordination, stormwater management design, erosion and sedimentation control design and permitting, landscape design, technical specifications, and Cranberry Township approvals. CEC's environmental services included a Phase I Environmental Site Assessment. CEC completed test borings to determine subsurface conditions and investigate the elevation of bedrock, a review of the drilling and laboratory testing results to estimate allowable bearing capacity for foundation design and geotechnical design parameters for earthwork, a flexible pavement design, and a geotechnical report summarizing the data obtained and presenting the conclusions and recommendations developed from the investigation. The ecological services included an environmental resource review and a wetlands and stream delineation report.

### OWNER/CLIENT

*Pennwood Commons II, LLC*

### CEC SERVICES

- *Surveying*
- *Environmental Services*
- *Site/Civil Engineering*
- *Geotechnical Engineering*
- *Ecological Services*
- *Landscape Design*



## Mon-View Development, Phase III

City of Granville, West Virginia

### Owner Objective

CONSOL Energy, LLC (CONSOL), one of the leading diversified energy companies in the U.S., in conjunction with a private local developer, prepared the site of its former Arkwright Mine near Morgantown, West Virginia, for commercial use as part of the University Town Center project. The project took a coal refuse facility and transformed it into a world-class commercial development. The team will soon complete the third phase of the project, which is being funded by a \$45M property and sales tax TIF. This phase includes a 107-acre tract of land connecting the University Town Center to a proposed interchange with Interstate 79, and is home to a minor league baseball stadium, along with proposed hotels, restaurants, and commercial retail.

### CEC Approach

CEC was retained by CONSOL to perform civil engineering services for the Mon-View site development project. CEC provided master planning services, engineering design, which included site grading and erosion and sedimentation design, and presentation exhibits for approval processes and marketing purposes. The grading plans had to take into account that more than 100,000 cubic yards of coal would be harvested as a result of the grading activities. CEC's master plan and renderings were instrumental in gaining public support and ultimately obtaining the \$45M TIF. The project is nearing completion, with 90% of the pads sold and the baseball stadium wrapping up its inaugural season.

### OWNER/CLIENT

CONSOL Energy, LLC

### CEC SERVICES

- Master Planning
- Site Civil Engineering Design



# Suncrest Town Center

Morgantown, West Virginia

## Owner Objective

The Suncrest Towne Centre development is a “lifestyle” shopping center located at the intersection of State Route 705 and Stewartstown Road in Morgantown, West Virginia. The “lifestyle” center includes approximately 389,350 square feet of retail, restaurant, specialty small shops and outparcel developments. In addition, the project includes a hotel, and second floor office space overtop first floor retail. The outparcel development included banks, fast food restaurants, office buildings, a grocery store, medical office and a gas station.

## CEC Approach

CEC was contracted by 705 Five Development Group, LLC to provide preliminary and final civil engineering and site development services for the project. The site has major topographic, physiographic, utility relocation, archaeological, and geotechnical issues that will impact the proposed development. CEC worked closely with Meacham & Apel Architects and Omni Associates, the project architects, and General Industries, the project’s construction manager and general contractor, to integrate the civil engineering and site design with the geotechnical and topographic constraints of the site. Several major utility lines were required to be relocated to develop the site, and CEC coordinated these relocation designs with the utility service providers. The site development involves over 900,000 cubic yards of excavation/fill placement to create a “balanced” earthwork condition on the approximate 67-acre site. CEC’s scope of services on this project included the following:

- Pre-construction services
- Preparation of phased site grading plans and earthwork computations
- Revised erosion and sedimentation control plans and revisions to a previously issued NPDES permit for stormwater discharges
- Stormwater management plan (underground storage facilities)
- Site utility design and coordination of onsite utility relocations
- Consultation and coordination with the geotechnical engineering investigations
- Coordination with highway access approvals with the West Virginia Department of Highways
- Parking and internal roadway design
- Preparation of civil engineering and site development construction plans and specifications

## OWNER/CLIENT

705 Five Development Group, LLC

## CEC SERVICES

- Site Grading & Layout Plan
- Stormwater Management
- Utility Design
- Erosion & Sedimentation Control Plan



## Rue 21 Warehouse Expansion

Weirton, West Virginia

### Owner Objective

Rue 21, a specialty discount retailer of young men and women's casual apparel and accessories, needed to increase distribution capacity for their growing number of stores and elected to expand their existing warehouse facility in lieu of building a new one on a different site. The Rue 21 warehouse facility is located on a former strip mine within Three Springs Industrial Park in Brooke County, West Virginia. The expansion project consisted of a 195,000 square foot warehouse and bistro facility addition, 100-space tractor trailer parking lot and over 189,000 square feet of existing distribution center improvements. The project also included a 5,000 square foot employee area.

### CEC Approach

CEC provided surveying, site development and geotechnical engineering services for the expansion. CEC obtained local and state permits for development, stormwater, erosion and sediment control and sewage capacity.

As the site was a former strip mine, a challenge of the project was the potential for expansive soils and differential settlement. To address this challenge, CEC performed large-scale ground improvements in the form of deep dynamic compaction (DDC) in order to develop the site. CEC performed the design-build DDC ground improvement as a subcontractor to Wesex Corporation. The DDC resulted in significant savings versus deep foundation construction.

### OWNER

Rue 21

### CLIENT

Triangle Development Corporation  
and Wesex Corporation

### CEC SERVICES

- Predevelopment Site Investigations
- Surveying Services
- Geotechnical Engineering
- Site Grading / Earthwork Analysis
- Erosion & Sedimentation Control / NPDES Permitting
- Roadway Design and DOT Permitting
- Stormwater Management / BMP Design
- Utility Design
- Design-Build Ground Improvements
- Construction Services



Deep Dynamic Compaction

**Steve A. Cain, PE - Senior Principal**

Mr. Cain, a professional engineer with CEC, has more than 27 years of experience in civil engineering design and project management. Steve's experience in civil engineering design encompasses many aspects of civil engineering design including land surveying, mapping, site development, sanitary sewer system design, storm sewer system design, potable water distribution system design and hydraulic modeling. As a project manager Steve has assisted clients in identifying potential project needs, assisting the client in securing project funds, performed and directed detail design, and participated in and managed construction activities. Most recently, Mr. Cain was the Project Manager on the Menards Home Improvement Store project on Emerson Drive in Parkersburg WV along with the interchange improvements approved by the WVDOH.

Professional Engineer - WV15264

**James R. Christie, PLA - Senior Project Manager**

Mr. Christie is a Senior Project Manager in the Civil department. In his capacity, he is responsible for complete project management within CEC. He is responsible for site design, landscape architecture, site development entitlement services, construction documents, client management, personnel supervision, and construction administration on numerous governmental, commercial, and institutional projects. Mr. Christie is a detail-oriented, highly-creative Landscape Architect with 21+ years of dedicated experience in designing and implementing projects to support client needs and meet business objectives. His wide range of project experience ranges from landscape design to destination resort design in multiple regions both within the United States and internationally.

Professional Landscape Architect - WV414

**Thomas W. Adams, PE - Project Engineer**

Mr. Adams has experience as a project engineer and project manager in completing site development projects both commercial and residential in Ohio, Maryland and West Virginia. His Design experience includes site layout, grading, storm water management, erosion and sediment control, water and wastewater design, utility coordination, and NPDES permitting. Mr. Adams has an excellent understanding of construction cost estimating, permitting requirements, and bid documents preparation.

Professional Engineer - WV19863

**Kow O. Eshun, PE - Geotechnical Engineer**

Mr. Eshun has more than ten years of diverse experience in Geotechnical engineering, Logistics, Transportation and Construction Quality Assurance. Mr. Eshun has worked on a wide range of subsurface investigations to provide recommendations for shallow foundations, intermediate foundations, deep foundations, slope stability analyses, ground improvement techniques, mine subsidence, and earthwork for both greenfield and brownfield projects.

Additionally, Mr. Eshun has managed a wide range of projects in the transportation, health, natural gas, manufacturing, telecom and utilities industries including roadway projects, well pads, compressor stations, building projects, substation construction and expansion.

Professional Engineer - WV22377

\* Complete Resumes are available upon request