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WV PURCHASING
DIVISION

PERFIDO WEISKOPF WAGSTAFF + GOETTEL
PROPOSAL FOR A/E DESIGN SERVICES

CEO1 0211 GSD2000000004 Building Four Renovations

PREPARED FOR
STATE of WEST VIRGINIA GENERAL SERVICES DIVISION

February 26, 2020

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WAGSTAFF +
GOETTEL

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: GSD2000000004

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

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

Perfido Weiskopf Wagstaff + Goettel (PWWG)

Company



Anthony Pitassi, AIA
Managing Principal

Authorized Signature

25 February, 2020

Date

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

February 25, 2020

Melissa Pettrey, Senior Buyer
Department of Administration, Purchasing Division
2019 Washington Street East
Charleston, WV 25305-0130

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RE: CEOI 0211 GSD2000000004 for Building Four Renovations

Dear Ms. Pettrey and Members of the Evaluation Committee,

Perfido Weiskopf Wagstaff + Goettel (PWWG) is pleased to submit our qualifications for Architectural and Engineering Services in response to EO: Building Four Renovations at the Capitol Complex. We have carefully studied the RFP and we have previously visited the building. Based on our recent experience with similar work on Building Three and other similar projects, we are confident that the enclosed materials demonstrate that our team is exceptionally well qualified to provide the best overall value to the State of West Virginia. We are excited for the opportunity to continue our work on your Capitol Complex campus. We also want to underscore specific qualifications of our team and unique aspects that PWWG will bring to this project:

- PWWG is a regional leader in the rehabilitation of historic structures and architecturally significant buildings.
- Our team includes consultants skilled in complex upgrades to existing buildings.
- We have experience in the design of open office systems that meet the standards of contemporary workplace environments.
- We have experience preparing comprehensive facility assessments and building consensus among constituent groups.
- We have experience designing for continued occupancy during construction and have recently completed projects at universities where this was successfully achieved.

I would like to highlight another aspect PWWG brings to your project — our meticulous, creative approach to exploring options to develop solutions that match your needs, and that bring the best overall value to the project and to the taxpayers of West Virginia. For example, carrying forward our knowledge of this project from a previous EO, and other studies PWWG completed for Building Four, we feel there is opportunity to consider alternatives to address critical deficiencies in life safety and barrier-free access while preserving the building's architectural character and maximizing your investment in the project. We expand on this in the "Approach" section of the submission.

We see this as an exciting project and a great commission for our office. We appreciate your consideration of our credentials and look forward to the opportunity to discuss your project in detail.

Thank you,



Anthony L. Pitassi, AIA, LEED AP

Managing Principal

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PWWG

Tower Engineering

Langan

Moment Engineering

The Sextant Group

SKA Elevator Consulting Group

Morgan Property & Construction



QUALIFICATIONS / PROJECT TEAM



PWWG PROJECT LEADERSHIP



Kevin Wagstaff, AIA, LEED AP
Principal
Role: Principal in Charge & Design Lead



Joe Filar, RA, LEED AP
Senior Associate
Role: Project Manager



Andy J. Fortna, AIA
Associate
Role: Project Architect



Jan Irvin, AIA, LEED AP
Senior Associate
Role: Specifications Specialist / Quality Control



Tonya Markiewicz
Graduate Architect
Role: Interiors / FF & E

We will provide additional in-house design and production staff to the project as needed based on schedule and phasing. We have capacity and experienced staff ready to go.

SUB-CONSULTING FIRMS

MECHANICAL ENGINEER

Tower Engineering

James N. Kosinski, PE, LEED AP

Senior Project Manager

Thomas R. Valerio, PE, CEM, LEED AP

Project Manager

Michael S. Plummer, PE, CPD, LEED AP

Lead Plumbing / Fire Protection Designer

T. Steffanie Bako, PE, LEED AP

Lead Electrical Designer

STRUCTURAL ENGINEER

Moment Engineering

Douglas Richardson, PE, LEED AP

Principal Structural Engineer

SITE/CIVIL ENGINEER

Langan

Scott D. Rowland, PE, LEED AP

Principal-in-Charge

Joshua Diaz, PE

Senior Project Manager

Paul J. Ceriani, PE

Senior Project Manager

COST ESTIMATOR

Morgan Property & Construction

Morgan Kronk

Principal Cost Estimator

AV / IT / SECURITY

The Sextant Group

Gregory P. Clark, CTS, INCE

Principal-in-Charge

Paul Dooley, RCDD, CTS

Lead IT/Telecom & Security

Steven Miller, CTS

Systems Designer / Lead Audiovisual Technologies

ELEVATOR CONSULTANT

SKA Elevator Consulting Group

Steve Kinnaman

Principal Elevator Consultant

PERFIDO WEISKOPF WAGSTAFF + GOETTEL

Main Office

PWWG Pittsburgh
408 Boulevard of the Allies
Pittsburgh, PA 15219

Branch Office

PWWG Cincinnati
1432 Elm Street Unit 1A
Cincinnati, OH 45202

History & Description of the Firm

PWWG was established in, and has been continuously in business since 1975 (45 years). The firm has 4 Principals:

Anthony Pitassi, AIA, LEED AP Lisa Carver, AIA, LEED AP
Brent Houck, AIA, LEED AP Kevin Wagstaff, AIA, LEED AP

PWWG is a diverse, versatile architectural practice, with experience in a wide variety of building types. Our portfolio includes projects, large and small, for cultural institutions, higher education, government, businesses, and individuals.

Current Staff

PWWG offers clients the production capabilities of a large firm with the personal attention that only a mid-size firm can consistently offer. The partners lead an interdisciplinary studio comprising: 26 total employees; 16 Registered Architects (8 LEED AP); 4 Administrative and Support.

Areas of Specialization

While PWWG's portfolio is diverse, we offer specific expertise in projects of the following types:

- Facilities for higher education (labs, classrooms, offices, administrative, and workforce training buildings).
- Rehabilitation, preservation, and adaptive reuse of historic architecture and existing buildings.
- Multi-family residential design (affordable and market rate, student and senior housing, and luxury condominiums).
- Commercial and civic architecture including parking structures, retail, theatres, hotels, and galleries.

Repeat clients include non-profit institutions, private businesses, public/private partnerships, and government.



PWWG Pittsburgh Office



PWWG Cincinnati Office



Kevin Wagstaff, AIA, LEED AP

Principal

Role: Principal in Charge & Design Lead

Kevin has been practicing architecture for over 28 years and has been a principal with PWWG since 2004. He serves as lead designer on many of PWWG's most significant projects, and has a broad range of experience as principal-in-charge or project architect on projects ranging from higher education, to market rate and subsidized housing, to hospitality, corporate and government offices, to institutional buildings and parking structures. A number of his projects have received awards from the Pittsburgh and Pennsylvania chapters of the AIA, as well as national associations and publications.

Education

Princeton University
Master of Architecture, 1988

University of Virginia
B.S. in Architecture, 1986

Registration

Architect in PA & WV

Professional Associations

American Institute of Architects

LEED Accredited Professional

AIA Pittsburgh Board of Directors
2007-2012; President 2010

Chairman, Urban Design
Committee, 1994-1996

Carnegie Mellon University
Adjunct Assistant Professor,
2009-2011

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SELECT PROJECT EXPERIENCE

Eighth and Penn, Pittsburgh, PA — Rehab of two historic buildings and design of two new ones for 135 residential rental units at a prominent location in downtown Pittsburgh. Storefront retail and restaurants wrap around the building at street level.

Union Trust Building Restoration and Adaptive Reuse, Pittsburgh, PA — 517,000 sf restoration and adaptive reuse of an 11-story landmark building for office and retail uses.

Cincinnati Music Hall Rehabilitation, Cincinnati, OH — After coordinating the client's competitive application for \$25M in "Catalyst Grant" funding, the firm led a team of experts in the restoration and selective modernization of this iconic 225,000 sf multi-arts performance venue.

Hatfield+Home, Pittsburgh, PA — 53,000 sf of new, high end, compact urban housing incorporating sustainable principles.

Palumbo Science Center, La Roche University, Pittsburgh, PA — 13,300 sf comprehensive reorganization, renovation, and systems upgrade for teaching labs and offices.

The Allison Condominiums, Cincinnati, OH — Phase I of the 15th and Race Development in the Over-the-Rhine neighborhood; 16 one- and two-bedroom units, each 800-1200 sf, with 3 street-level commercial spaces totaling 4,500 sf.

4830 Hatfield St Residences, Pittsburgh, PA — Rehab and adaptation of a 10,000 sf 1874 Historic Register school in a residential neighborhood for 11 apartments.

15th and Race Development, Phase 2, Cincinnati, OH — A mix of new construction and adaptive reuse of historic buildings for 24 condominium units, 5 townhouses, street level retail and parking, in the Over-the-Rhine neighborhood.

Ziegler Park Garage, Cincinnati, OH — 400-car, 2-level underground garage that is part of the rehabilitation and renewal of a 1.4 acre park in the burgeoning Over-the-Rhine neighborhood.

Ridge at Robinson, Pittsburgh, PA — 448,000 sf new development of market rate rental housing; 342 one, two, and three bedroom units in 5 apartment buildings, with clubhouse, fitness center, and pool.



Joseph Filar, RA, LEED AP

Senior Associate
 Role: Project Manager

Joe began his professional career working in New York City. He moved back to Pittsburgh in 1999, joined Perfido Weiskopf Architects as an intern architect, and became an associate of the firm in July 2003. Joe has a broad range of design and contract management experience and experience as a Project Manager on higher education, market rate and subsidized housing, corporate offices, and historic rehabilitation of landmarks buildings. Several of his projects have received awards from the Pittsburgh and Pennsylvania chapters of the AIA.

Education

Penn State University Bachelor of Architecture, 1995

Sede di Roma Foreign Studies Program, 1993

Registration

Architect in PA

Professional Associations

LEED Accredited Professional

National Historic Trust

Pittsburgh History & Landmarks Foundation

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SELECT PROJECT EXPERIENCE

IUP New Kopchick Hall Science Building, Indiana University of PA, Indiana, PA — Project Architect for 181,000 sf new construction of lab/classroom/planetarium building, LEED Silver goal.

Oglebay Hall & Ming Hsieh Hall, West Virginia University, Morgantown, WV — Project Architect for 55,000 sf historic renovation and 20,000 new building; Both buildings are LEED Certified.

Becht Hall, Clarion University, Clarion, PA — Project Architect for 53,000 sf historic renovation for a Student Success Center; LEED Silver goal.

Comprehensive Roof Safety Assessments, Carnegie Mellon University, Pittsburgh, PA — Project Manager for evaluation and recommendations for a total of 57 buildings and 225 different roofs on campus.

West Virginia Capitol Building 3 Comprehensive Restoration and Modernization, Charleston, WV — Project Manager for forensic evaluation, roof repair, and complete interior renovation of a 154,000 sf historic office building for 21st century use; scope included new systems throughout, new floor layouts for a variety of work environments, new furnishings, AV/IT systems and security and accessibility upgrades.

Union Trust Building Comprehensive Interior Restoration and Modernization, Pittsburgh, PA — Project Manager for adaptive reuse of an 11-story landmark building for Class 'A' office and retail uses.

21c Museum Hotel Durham, Durham, NC — Project Manager for Comprehensive restoration and conversion of the historic 17-story Hill Building in downtown Durham to an upscale 120 room hotel and museum.

4830 Hatfield St. Residences, Pittsburgh, PA — Project Manager for Comprehensive exterior and interior restoration and conversion of a 10,000 sf 1874 Historic Register school in a residential neighborhood for 11 apts.

Courtyard by Marriott Hotel, Pittsburgh, PA — Comprehensive interior restoration and conversion of a 9-story historic building into a 182-room downtown hotel.

Historic Bayard School Apartments, Pittsburgh, PA — Project Manager for rehab and adaptation of a 10,000 sf 1874 Historic Register school in a residential neighborhood for 11 apartments.



Andy J. Fortna, AIA

Associate

Role: Project Architect

Andy Fortna recently joined PWWG architects bringing experience in project planning, design, documentation and construction administration including master plans, building studies and community planning projects. Andy has been a project architect for various higher education projects such as classrooms, academic facilities, performing and visual arts, music and communications facilities, student commons and housing. Other projects include mid-rise office, parking garage, mental health, secondary education and religious facilities. Andy's experience includes renovations, historical restorations and incorporating principles of environmentally conscious, green design such as LEED and ParksMart.

Education

University of Cincinnati
B. Arch, 1993

Registration

Architect in PA

Professional Associations

American Institute of Architects

Member of Bike Pittsburgh

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SELECT PROJECT EXPERIENCE

Friendship Circle Pittsburgh Addition, Pittsburgh, PA — Renovation of an adjacent 4,500 sf storefront building adding a street front café and expanding program space for a children, youth and young adult support services facility previously renovated by PWWG in 2016.

Fifth and Clyde Residence, Carnegie Mellon University, Pittsburgh, PA — New student residence hall using laminated-timber structure on the edge of the CMU campus.

IUP New Kopchick Hall Science Building, Indiana University of PA, Indiana, PA — A new \$90 million 150,000 SF science facility including 51,000 SF of laboratory space to begin construction in 2020.

Palumbo Science Center, La Roche University, Pittsburgh, PA — 13,300 sf comprehensive reorganization, renovation, and systems upgrade for teaching labs and offices.

Pioneer Apartments, New Kensington, PA — 36 unit apartment building and social services center designed to the Passive House requirements.

AHN Connected Health, Pediatric Orthopedics Institute, Pittsburgh, PA*

Beacon Light Behavioral Health Systems, Master Plan, Bradford, PA*

Siena Student Housing, Bellarmine University, Louisville, KY*

City of Bradford Community Parks & Trails*

Recreation Center, College of Wooster, Wooster, OH*

David Lawrence Hall, University of Pittsburgh, Pittsburgh, PA*

Produce Terminal in the Strip, Restoration & Feasibility Study, Pittsburgh, PA*

Master Plan, Seton Hill University, Greensburg, PA*

Korean Heritage Room in the Cathedral of Learning, University of Pittsburgh, Pittsburgh, PA*

Bradford Campus, University of Pittsburgh, Bradford, PA*

Titusville Campus, 10-year Master Plan, University of Pittsburgh*

Technology Center, Washington & Jefferson College, Washington, PA*

New Dormitory, Western Pennsylvania School for the Deaf, Wilkesburg, PA*

* While with another firm



Jan Irvin, AIA, LEED AP

Senior Associate

Role: Specifications Specialist / Quality Control

Jan Lyle Irvin has practiced architecture across a broad spectrum of users and project types including historic restoration, museums, educational facilities, labs, and commercial structures. Jan has extensive experience with renovations and additions including adaptive reuse. He brings to the firm an unusual depth of knowledge about the connections between design, constructability, and in-service performance. Jan has developed specifications for many of the firm's recent high profile historic projects with demanding quality, maintenance, and durability standards, and led workshops for staff and local architects on construction specifications. He also develops and implements many of the firm's quality control initiatives.

Education

Kent State University
B. Architecture, 1980

Masters of Arts, Pittsburgh
Theological Seminary, 1996

Registration

Architect in PA

Professional Associations

American Institute of Architects

LEED Accredited Professional

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SELECT PROJECT EXPERIENCE

21c Museum Hotel, Durham, NC — Conversion of historic 17-story Hill Building in downtown Durham to an upscale 120 room hotel.

21c Museum Hotel, Lexington, KY — Conversion of historic 15-story First National Bank Building in downtown Lexington to an upscale 90 room hotel.

Cincinnati Music Hall Rehabilitation and Part 2 Tax Credit Application, Cincinnati, OH — After coordinating the client's competitive application for \$25M in "Catalyst Grant" funding, the firm is leading the restoration and upgrade of this iconic 225,000 sf performance venue.

Pedestrian Bridge, Western PA School for Blind Children, Pittsburgh, PA — Feasibility Study and design of an enclosed, temperature controlled crossing to safely connect 2 campus locations.

Child Development Center, WVU Parkersburg, Parkersburg, WV — New 8,000 sf early learning and clinical teaching facility.

Applied Technology Center, WVU Parkersburg, Parkersburg, WV — New 20,000 sf classroom & lab building.

New Campbell Health Sciences Hall, West Liberty University, West Liberty, PA — 71,000 sf new building to house every health care major offered by the university.

S. Greengate Commons, Hempfield Twship, PA — New 47,200 sf 3-story low-income housing for seniors; PHFA Tax Credit funding.

Utilities and Infrastructure Improvements & Quad Design, West Virginia University, Evansdale, WV — PWWG is leading a team of engineers developing and implementing a coordinated infrastructure plan for 5 facilities on 150 acres on the campus.

Campus Parking Expansion, West Virginia University, Evansdale, WV — PWWG is leading a team of engineers developing new parking capacity on the campus, as a component of the Utilities and Infrastructure Improvements project.

Elevator Upgrades and Modernizations on the WV Capitol Complex, Charleston, WV — Modernization and upgrades to 19 elevators in 11 buildings at the Capitol, several on the Nat. Register of Historic Places.

National Center for Youth Science Education, Davis WV — Master plan study for year round STEM education facility.



Tonya Markiewicz

Graduate Architect

Role: FF&E

Tonya has been working in the architecture field in various capacities since 2009. Before joining PWWG, she worked at Morris Adjmi Architect in New York City for 3 years on a variety of high-end residential and hospitality projects. Here she worked to approve a project through NYC Landmarks and Preservation Board, and conducted construction administration on a project requiring some of the strictest preservation standards in the city. Before that she worked at Massaro Corporation in Pittsburgh in their Design-Build Department. Here she worked on a range of architectural projects, and acted as Sustainability Coordinator for the Corporation, providing support for LEED jobs, and hosting Continuing Education courses. Tonya has also worked in the non-profit sector at Braddock Redux, most notably managing the design and installation of a Green Roof garden, and acting as owners rep. for the Nyia Paige Community Center.

Education

University of Pennsylvania
M. Arch, 2008

Pratt Institute,
Bachelor of Industrial Design, 2003

Professional Associations

Carnegie Mellon University,
Adjunct Associate Professor of
Architecture

Braddock Redux, Board of
Directors

NCARB member

Green Building Alliance

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SELECT PROJECT EXPERIENCE

Garden Theater Block Apartments, Pittsburgh, PA — The new construction and design of a 50,000 SF, 52 unit apartment building, and the rehabilitation of two historic buildings, approx 15,000 SF, with ground level commercial space.

Mellon's Orchard Apartments, Pittsburgh, PA — The new construction and design of 5 buildings and 47 apartment units, 75% of the units are affordable, while the remaining units are Live/Work designated. The project site is approx 1.1 acre and total NSF is 44,768.

Allegheny College Guest House Interior Renovation, Meadville, PA — The selection of finishes, furniture, fixtures, and equipment for the interior renovation of this 5 bedroom historic guesthouse.

Palumbo Science Center, La Roche University, Pittsburgh, PA — The design and selection of finishes for a 13,700 SF interior renovation

Laborer's Union Training Center Interior Renovation, Saxonburg, PA — The interior renovation, including finishes and fixtures, for an office building and training center, approx 21,000 SF.

Carnegie Mellon University Window Replacement Projects, Pittsburgh, PA — The replacement of various monumental historic windows at Carnegie Mellon University.

85 Jay Street Apartments, New York, NY*

41 Great Jones Street Apartments, New York, NY*

Palihouse Hotel and Spa, Washington, CT*

Howard University, Campus Area Master Plan, Washington DC*

36 Perry Street Apartments, New York, NY*

465 Pacific Street Apartments, New York, NY*

16 W 18th Street Apartments, New York, NY*

30 Journal Square, master planning, Jersey City, NJ*

Duquesne University, Keller Locker Room Interior Renovation, Pittsburgh, PA*

* While with another firm

TOWER ENGINEERING, INC.

Tower Engineering has been providing innovative mechanical, electrical, plumbing, and fire protection solutions since 1931. While Tower is a generalist firm, it primarily serves the higher education and K-12, healthcare, senior living, hospitality and recreation sectors in both renovations and new construction. The firm's highly-trained staff of project managers, designers, and technical support personnel is capable of providing consulting services for every type of project - from a small, single-family residence to a high tech research facility incorporating redundant mechanical and electrical systems, DDC energy management and thermal storage. We have worked with the University of Pittsburgh since the mid 1990's, doing over 60 projects on their campus. We have also worked with Cannon Design since 2016, doing three projects with them, two of them being at the Westmoreland County Community College.

Our engineers utilize state-of-the-art software programs for the design of lighting, electrical power and mechanical systems. Lighting analysis includes point-by-point calculations, ESI analysis, exterior lighting analysis, and life cycle cost comparisons. Electrical power analysis includes fault current and load flow analysis.

Mechanical design and analysis services include energy economic analysis, thermal storage analysis, heating and cooling load calculations, refrigerant piping design, water system designs, along with BIM modeling. Our professional staff utilizes computer selection of air handling units, coils, pumps, terminal devices, fans, cooling towers, chillers, heat exchangers, kitchen hoods, hydronic and steam specialties, humidification equipment and heat recovery equipment.

Sustainability principles are considered at every design point, and firm principals personally lead every project. The firm has 26 employees, including eight (10) Registered Professional Engineers and eight (8) LEED Approved Professionals

HVAC

- Heating and cooling system design
- Ventilation system design
- Building automation systems
- Control systems and energy monitoring
- Geothermal system analysis and design
- Heat recovery systems
- Kitchen and laboratory exhaust systems
- Smoke evacuation systems
- Computer room environmental control systems
- Building commissioning services

ELECTRICAL

- Interior and exterior lighting design and studies
- Lighting controls
- Primary and secondary voltage power distribution systems
- Fire detection and alarm systems
- Computer data and power systems
- Uninterruptible power supply systems
- Reinforced and masking sound systems
- Lightning protection systems
- Fault current studies
- System over-current protection coordination
- Security systems

TECHNOLOGY

- Voice communication systems
- Data network systems

PLUMBING

- Water resource efficiency analysis
- Sanitary drainage systems
- Storm water management
- Domestic water systems
- Waste water treatment systems
- Hospital and laboratory piping systems
- Fuel oil piping systems
- Irrigation systems

FIRE PROTECTION

- Standpipe and sprinkler systems
- Fire protection systems

COMMISSIONING

- New Construction Commissioning
- Renovation Commissioning
- Retro-commissioning
- Recommissioning
- Value Recommissioning



JAMES N. KOSINSKI, PE, LEED AP

PRINCIPAL, VICE PRESIDENT
SENIOR PROJECT MANAGER, MECHANICAL ENGINEERING

Mr. Kosinski is primarily responsible for the design of HVAC systems and their components for hospitals, schools, universities, laboratories, office buildings, and commercial and light industrial facilities. He has experience with the design of numerous types of HVAC systems, including constant and variable air volume air handling, geothermal heat pump and exhaust systems; chilled water and hot water; electric/electronic, pneumatic and DDC control systems.

Jim's design responsibilities include load calculations, equipment selection, system layout, project specifications, cost estimates, direction of project drafting efforts, coordination with other engineering disciplines, and construction administration. Additional responsibilities include system analysis and energy studies, client contact, and project management and scheduling. He has performed energy conservation analyses, evaluated HVAC system performance, and justified the installation of DDC control systems and other energy saving measures. As a Mechanical Engineering Group Leader, Mr. Kosinski coordinates the efforts of a team of staff engineers, designers and CAD operators.

EDUCATION

Bachelor Architectural Engineering
Penn State University 1989

REGISTRATION

PE, Pennsylvania

PE- [REDACTED]

PE, West Virginia

PE- [REDACTED]

PE, New York

PE, Maryland

NCEES Registered

LEED Accredited Professional
2009

AFFILIATION

American Society of Heating,
Refrigeration & Air Conditioning
Engineers (ASHRAE)

REPRESENTATIVE EXPERIENCE

WVARNG Fairmont, Armed Forces Reserve Center - Fairmont, WV
New administration and maintenance facility

Allegheny Energy, Fairmont, WV
New administration, training and maintenance facility

American Eagle Outfitters, Pittsburgh, PA
New Corporate Headquarters

Department of Energy, Morgantown, WV
New record storage facility

Hampton County Municipal Complex, Allison Park, PA
Evaluation of Building Systems

Cranberry Township, PA
Cranberry Wood Business Park
Regional Learning Alliance
Verizon Wireless Call Center

The Conair Group, Inc., Pittsburgh, PA
New Headquarters and Research & Development Center

Canaan Valley Institute, Davis, WV
New Headquarters and Educational Facility (LEED)
Wallman Hall Renovation

Monroeville, Pennsylvania
New Municipal Center

United States Army Reserve Center - Jane Lew, West Virginia
Readiness Center and Organizational Maintenance Shop Building

West Virginia University, Morgantown, WV
Allen Hall Renovations
Bellefield Hall Renovations



TOWER

ENGINEERING, INC.



EDUCATION

BS, Mechanical Engineering
Penn State University 1997

REGISTRATION

Professional Engineer, PA
PE- [REDACTED] 2003

Certified in Plumbing
Design (CPD), 1998 and 2015

LEED Accredited Professional
2009



MICHAEL S. PLUMMER, PE, CPD, LEED AP

PRINCIPAL, DEPARTMENT HEAD
PLUMBING AND FIRE PROTECTION DEPARTMENT

Mr. Plummer is primarily responsible for the design of plumbing and fire protection systems and their components for educational, governmental, and commercial buildings. His plumbing duties include the design and layout of all domestic hot and cold water, sanitary drainage and storm water management systems. He is also responsible for the natural gas piping systems along with specialty systems involving laboratory or hospital gases. Mike's fire protection responsibilities include the design of water supply and pumping systems involving fire mains and sizing of fire pumps, the layout of stand pipe and sprinkler zone locations, sprinkler head placements and reviewing hydraulic calculations for contractor designed sprinkler systems. He is a LEED Accredited Professional and designs all of his projects with sustainability in mind.

Mike's duties include preparation of project specifications, cost estimates, project management, and coordination with architectural and other engineering disciplines. He also performs construction administration duties including review of submittals, preparation of punch lists, and field problem solving, as well as supervising the engineering efforts of the Plumbing and Fire Protection Department.

REPRESENTATIVE EXPERIENCE

Karndean Office Building - Export, PA

Elwood City Forge Office Building - Elwood City, PA

Harbor Creek Township Office Building - Erie, PA

Bayer Corporation - Pittsburgh, PA

Bayer Building # 8 renovations

Bayer Building #5 renovations

Bayer Building #15 renovations

University of Pittsburgh - Pittsburgh, PA

Benedum Hall Office and Auditorium Renovations

Renovations to multiple University buildings

Cranberry Woods, office buildings - Cranberry Township, PA

Building #500 renovations

Building #600 renovations

Building #800 renovations



EDUCATION

BS Electrical Engineering
Case Western Reserve University
1997

REGISTRATION

Professional Engineer
PA - PE- [REDACTED]
OH - PE- [REDACTED]
WV - PE- [REDACTED]

LEED Accredited Professional,
2009

AFFILIATION

Illuminating Engineering Society of North America (IES):
Treasurer Pittsburgh Section

AWARD

IES Design Award of Merit
2003,



T. STEFFANIE BAKO, PE, LEED AP

PRINCIPAL, DEPARTMENT HEAD
ELECTRICAL ENGINEERING DEPARTMENT

Mrs. Bako has provided engineering services for the design of office buildings, educational facilities, municipal buildings, community/recreational buildings and commercial facilities. Her primary responsibility is for the preparation of electrical opinions of cost, technical specifications, engineering drawings, field observation, and coordination with architectural and other engineering disciplines.

Steffanie's design responsibilities include lighting layout and fixture selection, including calculations and system coordination studies and calculations; computer rooms and associated support facilities; fire alarm and detection systems; emergency power, public address, audio-visual, security and closed circuit television systems. Additional responsibilities include client contact, field observation, and project management.

REPRESENTATIVE EXPERIENCE

West Virginia State Police Headquarters Building – Fairmont, WV

607 Washington Road Office Building – Mt. Lebanon, PA

Zottola Construction Corporate Offices – Butler, PA

M*Modal Office Fit-up – Pittsburgh, PA

East Suburban Pediatrics – Murrysville, PA

Buckhannon National Guard – Buckhannon, WV

Fairmont State Office Building – Fairmont, PA

Arch Coal Renovation – Buckhannon, WV

KVCTC/HEPC Building 2000 – Charleston, WV

Canaan Valley Institute – Davis, WV

Regional Learning Alliance – Cranberry Township, PA

Cranberry Woods Office Building – Cranberry Township, PA

TOWER

ENGINEERING, INC.



EDUCATION

BS, Mechanical Engineering
University of Pittsburgh 1982

REGISTRATION

Pennsylvania

PE- [REDACTED]

West Virginia

PE- [REDACTED]

AFFILIATIONS

LEED Accredited Professional
2008

US Green Building Council 2008

Certified Energy Manager (CEM)
2008



THOMAS R. VALERIO, PE, CEM, LEED AP

PROJECT MANAGER MECHANICAL ENGINEERING DEPARTMENT

Tom Valerio manages and provides design and construction administration services for approximately \$10 million of HVAC construction annually. His primary responsibilities include the design and analysis of HVAC systems for schools, universities, commercial and light industrial facilities, laboratories, health & science buildings, retail and municipal facilities. Tom draws from over 30 years of construction engineering experience to lead teams that provide cost effective, energy efficient solutions.

As a Certified Energy Manager, Tom improves facility energy performance by analyzing energy consumption, developing energy conservation measures, determining their probable construction cost, and calculating their return on investment.

REPRESENTATIVE EXPERIENCE

Aerotech Industries – Pittsburgh, PA
60,000 SF Light Industrial Addition

St. Camillus Parish – New Castle, PA
Renovations

Peters Township Municipal Building – McMurray, PA
New HVAC System

Borough of Mt. Lebanon – Mt. Lebanon, PA
New Aquatic Center

Citizens Library – Washington, PA
Masterplan and HVAC Renovation

West Liberty University: Campbell Hall – West Liberty, WV
New 68,000 SF Health Science Building

West Virginia University – Morgantown, WV
College of Law Energy Study
College of Law – 140,000 SF Addition and Renovation
University Park – New Apartment and Dormitory Complex
Mountainlair AHU Replacement

University of Pittsburgh – Pittsburgh, PA
Posvar Hall Parking Garage Ventilation
Ruskin Hall Dormitory Renovations
Trees Hall Renovations

Moment Firm Overview

Role in the WV BUILDING 4 RENOVATIONS: Structural Engineering

Firm Name/Location: Moment Engineers, Inc.
179 Summers Street, Suite 603
Charleston, WV

Firm Structure: Corporation

Years In Business: 15

Principal: Douglas Richardson, PE, LEED AP



Firm Philosophy:

Moment Engineers, Inc. is a professional consulting firm specializing in structural engineering, serving the architectural and building construction communities throughout West Virginia.

During his 30 years of experience, Mr. Richardson has had sole responsibility for the structural engineering design of more than 7 million square feet of built space, with construction costs in excess of a half billion dollars. His experience, ranging from small to very large multi-phase projects, is invaluable in providing the technical expertise and creative flexibility to deliver results in a prompt and reliable manner.

Building Sectors Served: WV higher education, WV state government, medical facilities, and commercial office buildings

Firm Capabilities: Design, forensics, and structural analysis for steel, concrete, masonry, and wood structures, for a variety of building types; construction administration services

Selected WV Projects:

- WVU Parkersburg Child Development Center (with PWWG)
- WVU Parkersburg Applied Technology Center (with PWWG)
- WVU Tech Engineering Lab Building Foundation Assessment
- Marshall University Stadium Concourse Expansion
- Kappa Alpha Fraternity House, WVU
- West Liberty University Campbell Hall Health Sciences Bldg (with PWWG)
- Mountaineer Challenge Academy
- Robert C. Byrd Regional Training Institute
- Advantage Valley Advance Technology Center
- WV State University Ferrell Hall Structural Assessment/Repair
- WV State University Jones Hall Structural Assessment/Repair
- Alderson Federal Prison Dormitory
- Judge Donald F. Black Courthouse Annex
- Pratt & Whitney Test Cell
- WV Hospital Association Office Building
- Camp Dawson - Regional Training Institute
- Glen Jean - AFRC
- Camp Dawson - AFRC
- Greenbrier Resort Golf Clubhouse Renovation



WVU Parkersburg Applied Technology Center (with PWWG)



West Liberty University Campbell Hall Health Sciences Building (with PWWG)

Douglas Richardson, P.E., LEED AP

Principal | Moment Engineers, Inc.



Relevant Experience — Renovations and New Construction

- West Liberty University Campbell Hall Health Sciences Building
- WVU Parkersburg Child Development Center
- WVU Parkersburg Applied Technology Center
- WVU Tech Engineering Lab Building
- Marshall University Stadium Team Store
- Mountaineer Challenge Academy
- Robert C. Byrd Regional Training Institute 1
- Advantage Valley Advance Technology Center
- WV St. University Ferrell Hall Structural Assessment/Repair
- WV St. University Jones Hall Structural Assessment/Repair
- Alderson Federal Prison Dormitory
- Judge Donald F. Black Courthouse Annex
- Pratt & Whitney Test Cell
- WV Hospital Association Office Building
- Camp Dawson - Regional Training Institute
- Glen Jean - AFRC
- Camp Dawson - AFRC
- Greenbrier Resort Golf Clubhouse Renovation
- Contractor consultation for Clay Center Renovations
- Contractor consultation for Charleston Civic Center renovations

Education

North Carolina State University,
Masters of Science in Civil Engineering,
Major in Structures Minor in Construction, 1989
West Virginia University,
Bachelor of Science in Civil Engineering, 1987

Registered Professional Engineer in:

- West Virginia, [REDACTED]
- Virginia, [REDACTED]
- Kentucky, [REDACTED]
- Florida, [REDACTED]
- Ohio, [REDACTED]

Professional Associations

LEED Accredited Professional
American Society of Civil Engineers
American Institute of Architects, Professional Affiliate
Structural Engineering Institute
Engineers Without Borders, USA



Langan Firm Overview

Role in the WV BUILDING 4 RENOVATIONS: Site / Civil Engineering

Corporate Summary

Integrated Solutions and Measurable Value for the World's Most Challenging Projects

Langan provides an integrated mix of engineering and environmental consulting services in support of land development projects, corporate real estate portfolios, and the energy industry. Our clients include developers, property owners, public agencies, corporations, institutions, and energy companies around the world.

Founded in 1970, Langan employs over 1,200 professionals in its Parsippany, NJ headquarters and among regional offices in:

- Bridgeport, WV
- Pittsburgh, PA
- Cleveland, OH
- New York City, NY
- White Plains, NY
- New Haven, CT
- Lawrenceville, NJ
- Philadelphia, PA
- Bethlehem, PA
- Doylestown, PA
- Arlington, VA
- Houston, TX
- Denver, CO
- Boston, MA
- San Francisco, CA
- Oakland, CA
- Sacramento, CA
- San Jose, CA
- Los Angeles, CA
- Santa Barbara, CA
- Irvine, CA
- Seattle, WA
- Phoenix, AZ
- Miami, FL
- Fort Lauderdale, FL
- Tampa, FL
- Orlando, FL
- West Palm Beach, FL

Langan's broad range of services includes the following:

- Geotechnical Engineering
- Foundation Design
- Site/Civil Engineering
- Environmental Engineering
- Earthquake/Seismic
- Surveying
- 3D Laser Scanning
- Building Information Modeling (BIM)
- Natural Resources Assessments & Permitting
- Landscape Architecture + Planning
- Transportation/Traffic Engineering
- GIS/Data Management Services
- Asbestos, LBP, Indoor Air Quality/Mold Consulting
- EHS Management and Compliance
- Waterfront Design
- Flood Protection
- Demolition Engineering



LANGAN

SCOTT D. ROWLAND, PE, LEED AP

PRINCIPAL/VICE PRESIDENT

SITE/CIVIL ENGINEERING



WVU, Baseball Park Complex,
Morgantown, WV



WVU, School of Business and Economics,
Morgantown, WV



Mr. Rowland is a site/civil (land development) engineer with experience ranging from conceptual planning through construction phase coordination for both urban and rural areas in the United States and internationally. He has expertise in the complete site development permit process with agencies such as local and state building departments, PWSA, DEP, DOT, DEC, FEMA, and US Army Corps of Engineers. His field experience includes construction, earthwork, dam, and sewer inspection, construction management, grouting, grading and drainage, pile driving and load tests, and quality control.

Mr. Rowland has made a professional commitment to sustainable design practices. He is a LEED certified professional and encourages others in his organization to pursue sustainable design measures on all projects through intelligent site planning, design, and engineering. Mr. Rowland teaches a class in Sustainable Site Development and Regenerative Design which allows other LEED certified professionals to receive continuing education credits.

SELECTED PROJECTS

- WVU, Baseball Park Complex, Morgantown, WV
- WVU, School of Business and Economics, Morgantown, WV
- AHN, Westmoreland Medical Office Building, Westmoreland, PA
- UPMC Presbyterian South Tower Deconstruction, Pittsburgh PA
- UPMC Mercy Vision and Rehabilitation Hospital, Pittsburgh, PA
- Station Square East, Pittsburgh, PA
- 3 Crossings Development, Pittsburgh PA
- Carnegie Mellon University, Tepper Business School, Pittsburgh PA
- Carnegie Mellon University, TCS Hall, Pittsburgh, PA
- Carnegie Mellon University, ANSY Simulation Building, Pittsburgh, PA
- 350 Oliver Garage, Pittsburgh, PA
- Uptown Lofts on Fifth Avenue, Pittsburgh, PA
- Steelers Transportation Masterplan, Pittsburgh, PA
- University of Pittsburgh Transportation Masterplan, Pittsburgh, PA
- The Tower at PNC Plaza, Pittsburgh, PA
- American Natural Carson Street Flagship Station, Pittsburgh, PA
- VA Pittsburgh University Drive Research Building, Pittsburgh, PA
- Greensburg Physical Rehab Hospital, Greensburg, PA

WVU Credit: West Virginia University

EDUCATION

B.S., Civil Engineering
Arizona State University

PROFESSIONAL REGISTRATION

Professional Engineer (PE)

LEED Accredited
Professional (LEED AP)

AWARDS

2012 CE News Rising
Stars

COMMITTEES

Green Building Committee,
Master Builders of Western
Pennsylvania

Economic Development
Committee, NAIOP
Pittsburgh

Land Use Committee,
Marcellus Shale Coalition

AFFILIATIONS

NAIOP Pittsburgh

ASCE Pittsburgh

The American Institute of
Architects

Master Builders of Western
Pennsylvania

LANGAN

JOSHUA DIAZ, PE SENIOR PROJECT MANAGER SITE/CIVIL ENGINEERING



Natural Gas Well Pad Design, Various Locations



Natural Gas Pipeline Systems, Various Locations



Mr. Diaz is a site/civil/roadway engineer with experience ranging from conceptual planning through construction phase coordination for private development, energy infrastructure, and heavy highway/bridge projects in the Eastern United States. He has expertise in the complete site development permit process with agencies such as local and state municipalities, DEP, DOT, FEMA, and US Army Corps of Engineers. His field experience includes highway and bridge construction, earthwork inspection, construction management, preliminary siting, grading and drainage, pile driving and deep foundation construction, and quality control.

SELECTED PROJECTS

- Antero, MicDiffitt Water Withdrawal, Bridgeport, WV
- Star City Bridge, Morgantown, WV
- Ruble's Run Bridge, Monongalia County, WV
- WV Route 7 Widening, Sabraton, WV
- Saint Mary's Bridge Accelerated Construction, Grafton, WV
- Wallace Bridge, Wallace, WV
- Big Run Bridge, Preston County, WV
- King Coal Highway, Red Jacket Section, Mingo County, WV
- King Coal Highway, Horsepen Section, Mingo County, WV
- Coalfields Expressway, Grundy, VA
- Various Marcellus Well E&S Plans, Greene, Washington, Susquehanna, Armstrong, Clarion Counties, PA
- Various Midstream Gathering E&S Plans, Green, Washington Counties, PA
- Various Marcellus Well E&S Plans, Tyler, Wetzel, Harrison, Doddridge, Upshur, Ohio, Marshall and Monongalia Counties, WV
- Various Midstream Gathering E&S Plans, Tyler, Wetzel, Marshall and Doddridge Counties, WV
- Sherwood to Mobley 20" Liquids line, Doddridge and Wetzel Counties, WV
- Various Marcellus and Utica Well Pad Developments, Belmont and Noble Counties, OH
- Speedway Business Park Letter of Map Revision, Fairmont, WV
- Branch Energy Letter of Map Revision, Morgantown, WV
- Emerson Commons Development and TIF Project, Parkersburg, WV

EDUCATION

B.S., Civil Engineering
West Virginia University

PROFESSIONAL REGISTRATION

Professional Engineer (PE)
in WV, PA, OH

AFFILIATIONS

American Society of
Highway Engineers

Harrison County Economic
Development Corporation

COMMUNITY SERVICE

Kiwanis International

West Virginia Youth
Wrestling Association –
Regional Chair

Big Cat Wrestling, Inc. -
President

PAUL J. CERIANI, PE

SENIOR PROJECT MANAGER

SITE/CIVIL ENGINEERING



WVU, School of Business and Economics,
Morgantown, WV



WVU, Baseball Park Complex,
Morgantown, WV



Mr. Ceriani is a site/civil engineer who has experience in urban and rural areas across the country and globally. Specifically, his experience ranges from early conceptual planning all the way through to construction coordination for a variety of market sectors including: healthcare, higher education, residential, mixed-use, commercial, retail, and governmental. Agency experience includes coordination with PWSA, DEP, DOT, FEMA, NAVFAC, and US Army Corps of Engineers.

His practical experience includes: project management, contract review and implementation, proposal preparation, grading and drainage design, general and individual NPDES BMP design and permitting, PCSM design and permitting, ACT 537 permitting and coordination, construction inspection and oversight, and preliminary and final land development planning and permitting.

SELECTED PROJECTS

- WVU, Business and Economics School, Morgantown, WV
- WVU, Baseball Park Complex, Morgantown, WV
- UPMC Presbyterian Hospital South Tower Demolition, Pittsburgh PA
- UPMC Vision & Rehabilitation Hospital at UPMC Mercy, Pittsburgh, PA
- AHN, Westmoreland Medical Office Building, Westmoreland, PA
- Carnegie Mellon University, David A. Tepper Quad, Pittsburgh, PA
- Carnegie Mellon University, Tata Consultancy Center, Pittsburgh, PA
- Carnegie Mellon University, ANSYS Simulation Building, Pittsburgh, PA
- University of Pittsburgh, Posvar Hall, Pittsburgh, PA
- 3 Crossings Development, Pittsburgh, PA
- Station Square East, Pittsburgh, PA
- Craft Place Apartments, Pittsburgh, PA
- Steamfitters Union Development, Jackson Township, PA
- South Hills Village Apartments, Pittsburgh, PA
- Old Economy Village, Ambridge, PA
- Loyalhanna Care Center, Loyalhanna, PA
- Dunkin Donuts, Washington, PA
- Dollar General Stores, Various Locations, PA
- Bethel Park Shopping Center, Bethel Park, PA
- USACE Troop and Family Medical Clinic, Ft. Leonard Wood MO

EDUCATION

B.S., Civil Engineering
Virginia Polytechnic
Institute and State
University

PROFESSIONAL REGISTRATION

Professional Engineer (PE)

CERTIFICATIONS

Office of Occupational
Safety 40 hours Hazardous
Waste Operator and Safety
Training

CPR Certified

Morgan Property Resume

Morgan Property & Construction

Morgan Kronk

Principal Cost Estimator



Professional Affiliations

Morgan has taught Construction Estimating at community colleges throughout the Pittsburgh region

Rebecca Residence, Board of Directors (Secretary, Executive Committee)

American Institute of Architects (Affiliate Member)

Building Officials & Code Administrators (Affiliate Member)

Pro Bono Estimating and Consulting for the Community Design Center of Pittsburgh



RELIABLE COST ESTIMATES FROM THE EARLIEST STAGES OF DESIGN

The development and control of a realistic budget is essential to project feasibility, and cost projections need to be reliable from the earliest stages of design. Morgan Property and Construction is a professional independent construction cost estimating firm that works with architects and engineers as part of their team, active in each phase of design. Estimates are prepared in CSI Divisional format from the schematic phase forward with updates at each major submission. The firm does not rely on 'comparables' or 'square foot' costs, because projects are nearly always unique in multiple ways, and comparables are never truly comparable.

By making active use of the valuable information generated from the cost estimating process, Morgan is constantly "value engineering" projects as they go through the design phases. At the close of the design phases the firm can selectively use "add" and "deduct" bid alternates to give the owner flexibility and a range bid numbers to pick from to mitigate the uncertainties of the bidding process. The combination of these strategies greatly reduces the likelihood of going through a painful process of cost cutting (as opposed to intelligent value engineering), redesign and rebidding.

KEY COMPETENCIES

- Cost Estimating
- Value Engineering
- Administration/Management
- Inspection
- Facility Assessments

DIFFERENTIATORS

- 40 years of professional construction management and administrative skills.
- Provides realistic, practical and valuable tools to clients which empower them with knowledge and in-depth understanding to execute their desired construction goals.
- Specific expertise in cost estimating to clearly communicate with clients about cost savings, feasible alternative solutions, and avoiding costly delays and unforeseen expenses.
- Commercial/institutional/multi-family construction experience.
- Services are beneficial to both architects and owners in understanding their costs and supporting their projects throughout construction.

SAMPLE PROJECT EXPERIENCE

Principal Morgan Kronk has developed cost estimates for PWWG for 30+ projects totaling more than \$50M in construction costs. He has over 35 years of commercial construction experience and has been beneficial to both architects and owners in understanding their costs and supporting their projects throughout construction. As an owner's representative, cost estimator or construction consultant and manager, he brings tangible value to projects.

Warner Hall Study, Carnegie Mellon University - Pittsburgh, PA (with PWWG)

Old Economy Village—Restoration and rehabilitation for historic buildings - Ambridge, PA (with PWWG)

Western PA School for Blind Children - Pittsburgh, PA (with PWWG)

Fallingwater Entrance & Parking Improvements - Ligoneir, PA

21c Museum Hotel Lexington - Lexington, KY (with PWWG)

Pittsburgh Ballet Theater Building Addition - Pittsburgh, PA

West Liberty Health Sciences Building, West Liberty University - West Liberty, WV (with PWWG)

Child Development Center, West Virginia University - Parkersburg, WV (with PWWG)

Historic Shaw Hall Study and Renovation, West Liberty University - West Liberty, WV (with PWWG)

Glen Hazel High Rise, Housing Authority of Pittsburgh - Pittsburgh, PA (with PWWG)

Vermeire Manor Phase II - Sharon, PA (with PWWG)

THE SEXTANT GROUP

FIRM OVERVIEW



INDEPENDENT TECHNOLOGY CONSULTANTS

The Sextant Group supports architects, interior designers, owners and facility planners as a catalyst: as technology adviser and consultant, we help stakeholders and design teams explore and articulate present and future needs through our intrinsic understanding of how technology and users interact. We then enable that dynamic to inform and shape the environment, resulting in better-designed (i.e., efficient, cost-effective, future-proofed) learning, healing, communication, collaboration, and entertainment facilities.

THOUGHT LEADERS

Experienced in planning and designing spaces and systems for educational, healthcare, corporate, government, institutional, performing arts, broadcast, and sports & recreation. Over 1800 projects, 600 owners, 44 states, 11 countries, with recognized expertise in

- ✦ Strategic Technology Planning
- ✦ Audiovisual, Multimedia and Broadcast Systems Design
- ✦ Voice/Data/Video Telecommunications Networking
- ✦ Security Assessment, Electronic Security Systems Design
- ✦ Architectural Acoustics, Noise & Vibration Control
- ✦ Technical Lighting Design
- ✦ Theatre Technology
- ✦ Healthcare Technology
- ✦ Faculty Support and Development

OFFICES

Locations include Atlanta, Boston, Columbus, Denver, Los Angeles, New York, Omaha, Phoenix, Pittsburgh, Raleigh, and Washington DC. Our Pittsburgh, PA office will serve the West Virginia Capitol Building 4 project.

- ✦ **Size of Staff:** 79
- ✦ **# of Years in Business:** 25



GREGORY P. CLARK CTS, INCE

THE SEXTANT GROUP :: Principal Consultant / Principal-in-Charge



With over 20 years of industry consulting and design experience on hundreds of projects throughout the country and abroad, Greg has specialized experience in all aspects of project management and delivery and brings particular strength in projects with significant noise and vibration challenges. His credentials span dozens of high-visibility clients, including headquarter offices for financial, law and advertising firms and Fortune 500 companies. Greg's extensive portfolio also includes consultation on millions of square feet of multi-use, high-end residential, higher education, hospitality, institutional, and government projects.

PROJECT RESPONSIBILITIES

Determines strategic direction of technology solutions in support of client's business and technology objectives; leads technology team; acts as executive level contact for client.

CREDENTIALS & ASSOCIATIONS

Certified Technology Specialist (CTS) by InfoComm International

Institute of Noise Control Engineering (INCE)

Acoustical Society of America (ASA), member

EDUCATION

Bachelor of Science / Acoustics and Music Engineering / University of Hartford / 1995

PROJECTS

West Virginia State Capitol Building, Charleston WV
Building #3 Historic Renovation

Ohio County Development Authority, Wheeling WV
Highlands Assembly Hall

Entercom Communication Corp., Philadelphia PA
New Philadelphia Headquarters

SAP Ariba, Pittsburgh PA
New Office High-rise

SAP America, Newtown Square PA
Executive Briefing Center

SAP DC, Washington DC
Office Renovations

The Andersons Inc., Maumee OH
New Corporate Headquarters

NII Holdings, Reston VA
Strategic Technology Plan

Lenovo USA, Raleigh NC
Office Consolidation

Lenovo USA, Morrisville NC
Executive Briefing Center



PAUL DOOLEY RCDD, CTS

THE SEXTANT GROUP :: Principal Consultant / Lead IT/Telecom & Security



Information Technology has been in his blood for over 30 years. Launching his career in operations and management for an independent telephone company, Paul has been immersed in the evolution of voice, data and video cabling, contributing to his ability to create innovative and sustainable building-wide cabling networks. As a respected technology leader, Paul's in-depth understanding and unparalleled experience with structured cabling and network electronics sets him apart in the telecommunications industry. Today, Paul oversees a team of RCDD-credited systems designers across the US planning complex infrastructure for renowned universities, corporations and institutions.

PROJECT RESPONSIBILITIES

Leads discussions of IT/telecom and Security strategies in support of client's business and technology objectives; designs and specifies IT/telecom and Security systems; applies principles of CP-TED (Crime Prevention Through Environmental Design); creates infrastructure and systems drawings; performs site reviews.

CREDENTIALS & ASSOCIATIONS

Registered Communications Distribution Designer (RCDD) – highest level of certification in Telecommunications industry – by BISCI

Certified Technology Specialist (CTS) by InfoComm International

Building and Industry Consulting Services International (BICSI), member

EDUCATION

Bachelor of Science / Business Administration, Management Information Systems / Robert Morris University / 1993

PROJECTS

West Virginia State Capitol Building, Charleston WV

Building #3 Historic Renovation

Tennessee State Capitol Complex, Nashville TN

Physical Security Systems Design

State of Oklahoma, Oklahoma City OK

Capitol Building Renovation – Security Systems

Union Trust Building, Pittsburgh PA

Security Renovation

City of Detroit, Detroit MI

Public Safety Headquarters

H. Carl Moultrie Courthouse, Washington DC

Renovation

Erie Insurance, Erie PA

Headquarters Building

H.J. Heinz Company, Pittsburgh PA

World Headquarters

The Andersons Inc., Maumee OH

Corporate Headquarters



STEVEN MILLER CTS

THE SEXTANT GROUP :: Systems Designer / Lead Audiovisual Technologies



Steven Miller offers clients over 29 years of systems design and project management experience. As Systems Design Engineer and Engineering Manager for two of the country's largest integrators, he directed teams of engineers and oversaw daily operations, developing complete technical design concepts for wide-ranging broadcast and media systems, including distance education, corporate training, and telemedicine facilities with emerging High Definition standards and streaming/compression transport technologies. Clients include Eli Lilly, Steelcase, Cox Broadcasting, and the Seattle Science Foundation.

PROJECT RESPONSIBILITIES

Leads discussions of Audiovisual strategies in support of client's business and technology objectives; designs and specifies audiovisual systems; creates infrastructure and systems drawings; performs site reviews.

CREDENTIALS & ASSOCIATIONS

Certified Technology Specialist (CTS) by InfoComm International

Society of Motion Picture and Television Engineers (SMPTE), member

EDUCATION

Electrical Engineering studies / University of Pittsburgh

PROJECTS

West Virginia State Capitol Building, Charleston WV
Building #3 Historic Renovation

City of Edmond OK, Edmond OK
Arcadia Lake Administration Building

Elliott Company, Jeannette PA
Centennial Office Building

EQT Energy, Pittsburgh PA
Corporate Headquarters

Industrial Scientific, Pittsburgh PA
Corporate Headquarters

SAS Institute, Inc., Raleigh NC
Building A

Major Institutional Client, New York NY
Conference Campus AV Program Management

American Enterprise Group, Des Moines IA
Headquarters Remodel

JPMorgan Chase & Co., Houston TX
Strategic Hub Refresh

JPMorgan Chase & Co, Tempe AZ
Discovery Campus

SAP Canada, Vancouver BC
Customer Conference Room Upgrades



SKA Elevator Consulting Group Firm Overview

Role in the WV BUILDING 4 RENOVATIONS: Elevator Consultant



Firm Introduction

SKA Elevator Consulting Group is an independent third party that specializes in the business of vertical and horizontal building transportation consulting that currently operates out of offices in New York, NY and Phoenix, AZ.

Our client base consists of internationally known architects, developers, building owners, contractors and public agencies. We provide full services from conceptual designs through the final stages of construction and testing of vertical transportation systems. Building segments include commercial offices, retail, hospitals, hotels, residential, parking facilities, museums, libraries, schools, correctional, public transit, and other specialty facilities that are located throughout the world. A comprehensive list of those projects is available upon request.

Although recently formed as a company, the firm made up of professionals drawn from throughout the elevator industry with an average of 35 years in experience. Our people have a broad range of expertise in all phases of elevator consulting including new building design, existing building equipment modernizations, due diligence reviews as well as existing equipment performance and maintenance evaluations.

Our professional affiliations include; The International Association of Elevator Engineers, The International Association of Elevator Consultants, American Society of Mechanical Engineers, The Construction Specifications Institute and The Council of Tall Buildings and Urban Habitat.

We invite you to visit our website at: www.skaecg.com

Certifications: ASME Accredited Certified Elevator Inspector [REDACTED]

SKA Elevator Consulting Group Resume

SKA Elevator Consulting Group



Elevator Consulting Group



Steve Kinnaman, Principal/CEO

Professional Experience

After 15 years as Principal Consultant at three international elevator consulting firms, in 2009 Mr. Kinnaman formed his own firm, Steve Kinnaman & Associates LLC dba: SKA Elevator Consulting Group. Steve brings 41 years of experience in the vertical transportation field to the SKA team.

Prior to forming his own firm, he was a principal in the west coast elevator consulting firm of HKA and prior to HKA he was with Jaros, Baum & Bolles (JB&B), a large international Consulting Engineering firm in New York City, as Director of the Vertical Transportation Department. Steve's New York operation was also responsible for providing all of the vertical transportation support for the JB&B office in London. Making the transition to consulting and design of vertical transportation systems.

Steve served as Regional Manager and Principal Consultant in New York for Lerch Bates and Associates, a large international elevator consulting firm, before moving to JB&B. His background includes the manufacturing and contracting as well as the consulting segments of the business. In the manufacturing and contracting segment, he was involved with product planning and application, equipment application, analysis, sales and marketing, construction project management and regional operations management. Steve currently does an extensive amount of work in New York City, the Middle East and in Europe.

Notable Projects —Office Buildings

Olive Grove Tower, Istanbul, Turkey; 300 Madison Avenue, New York, NY; 360 Madison Avenue, New York, NY; Canary Wharf, Buildings WF9, DS-1, DS-3, London, England; 745 Seventh Avenue, New York, NY; 7 World Trade Center, New York, NY; The Freedom Tower-World Trade Center, New York, NY; Towers 2, 3 and 4 at the World Trade Center, New York, NY; Soyak Tower, Istanbul, Turkey

Other Notable Projects

John Jay College of Criminal Justice Phase II, New York, NY; School of Law, New York, NY; Museum of Islamic Arts, Doha, Qatar; Cleveland Clinic Addition, Cleveland, Ohio; Psychiatric Institute, Columbia University, New York, NY; World Trade Center 911 Memorial Building, New York, NY; Sterling Memorial Library, Yale University, New Haven, CT; NASCAR Hall of Fame, Charlotte, NC

Professional Affiliations

Member, International Association of Elevator Consultants
Member, International Association of Elevator Engineers
Member, National Association of Elevator Safety Authorities
Member, Construction Specifications Institute
Member, American Society of Mechanical Engineers
Member, Council of Tall Buildings and Urban Habitat



2

OUR PROCESS AND APPROACH FOR BUILDING FOUR RENOVATIONS

Our Process

Perfido Weiskopf Wagstaff + Goettel

PERFIDO
WEISKOPF
WAGSTAFF
GOETTEL

PWWG's process for each project is expansive and open minded. Our goals are rooted in delivering the best possible solution to meet our client's mission and expectations. At the very earliest stage of each project, PWWG is engaged in pooling our varied experience and expertise, internally and externally, to cast a wide net and develop a broad understanding of the big picture. Our design team works in a **culture of collaboration** and we look forward to engaging with all project stakeholders to **develop the best ideas, craft a shared project vision, and implement the best solutions.**

PART I — FACT FINDING

A) Listening

We begin each project gathering information focused on two areas:

1. The client's organization
2. The physical site/building

Listening to the client includes getting to know the culture of their organization; understanding their specific needs, preferences, standards and protocols; and learning from their past experience including similar projects that may serve as precedents or prototypes.

- *PWWG will work with you to establish the structure of communication and approvals for the Building Four Renovations—Who is included? At what points? How are input and feedback collected and conveyed? Clarity here instills confidence in both sides, and lays a path for a creative, iterative design process that brings your vision and goals to life.*

B) Understanding What You Have

Understanding the physical site or building involves spending time at Building Four to learn how to work with and enhance the assets and overcome the deficiencies.

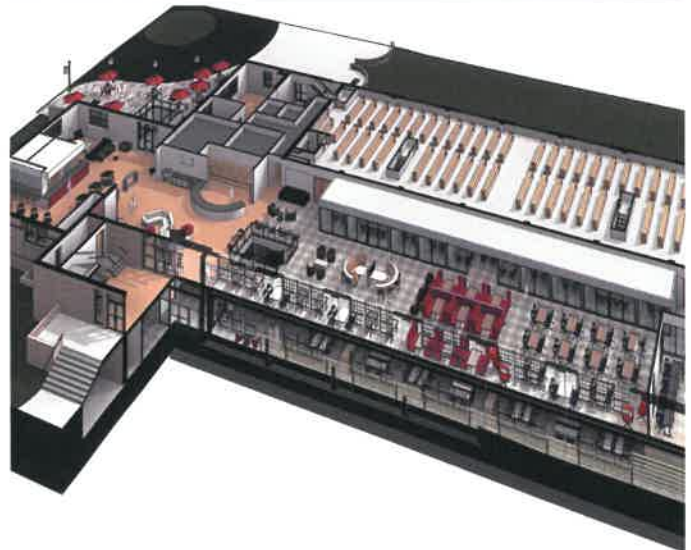
We apply intuition and a practiced eye for considering what stays as-is, what gets renovated, and to what level, in order to achieve your overall goals for this renovation/modernization project. The assessment applies to every aspect of the job— historic fabric, MEP systems, the envelope and roof, lighting, interior finishes, and so forth.

- *PWWG has 45+ years of experience renewing existing buildings, historic buildings, and other architecturally significant buildings. We have worked successfully with the SHPO in West Virginia on Building Three and have a proven development process for assessing the value of existing assets. We will help you decide what to preserve, what to refresh, and what to replace.*

C) Understanding What You Want

Understanding involves clearly and accurately developing and documenting the project program and project requirements. It is done with an open mind to include a full range of "wants" and although budget is not ignored, it is momentarily set aside to ensure that good ideas are not immediately discarded.

- *PWWG is confident in coordinating complexity, distilling ideas into a clear program, and discerning themes that will inspire design. We will collaborate and guide you to produce a comprehensive and cohesive project understanding.*



Images above: PWWG's utilizes 3D modeling throughout planning and design projects to understand spatial conditions, and test and present design concepts.



D) Establishing What You *Need*

This final step involves blending an understanding of the assets you have, with the desired wants, and blending them to derive the needs to achieve a successful project.

- *The vision (“wants”) and functional goals (“needs”) for the Building Four Renovations are, of course, unique. PWWG is attentive to, and diligent in, creating a **road map** to provide a **balance** between the “wants” and “needs”, essential to a successful project.*

PART 2 — EXPLORING

A) Research Current Best Practices

After fact-finding comes exploration. PWWG’s principals use a process of open-minded design exploration to identify pertinent ideas and alternatives to present for comment and critique, both within the design team and in multiple meetings with stakeholders. We review literature, precedents, and our own past work to consider what kinds of spaces lead to the kinds of interaction that will best serve the needs of the State of West Virginia.

- *PWWG will do our research, assess trends and best practices, and apply them to the Building Four Renovations.*

B) Refine Programming Concepts & Test Fits

Alternatives include such issues as the configuration of space and functions within the building, potential expansion flexibility, and cost criteria, including first costs and operating costs.

- *PWWG conducts design and reviews with our consultants and your team, in an iterative process, exploring alternatives in drawings, narratives, and discussions as we move toward a preferred solution that will bring your functional and vision goals to life.*

C) Visualizations

We use a variety of media including computer-generated 3D modeling in conjunction with physical scale models to study and present alternatives that are immediately accessible and understandable to consultants and stakeholders.

- *PWWG and our team work in Revit, and generate 3D models from the start of any project. With test fits, we communicate ideas to your stakeholders more clearly and powerfully than with floor plans. As we collaborate to refine the design, our visualizations are refined in tandem, moving step by step to more refined rendered images.*

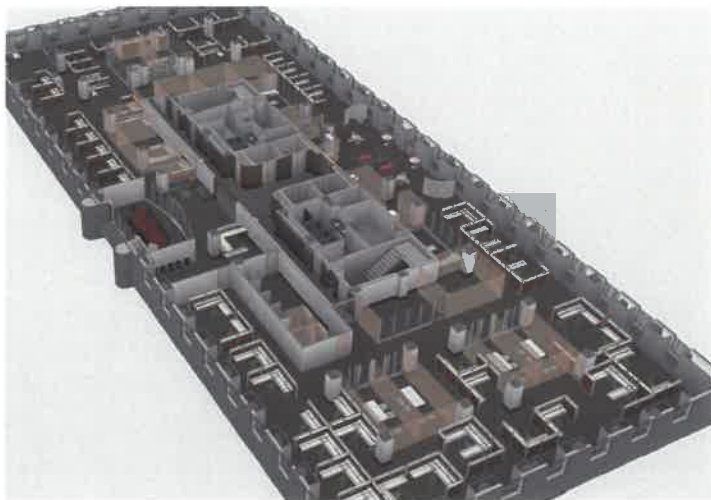
PART 3 — SYNTHESIS

Development, Documentation and Realization

Once the program is confirmed and the concept is selected, the building design is developed into a schematic design set with full consideration for building structure and systems. At this stage, the models fully illustrate the final design concepts, and give the client the feel of the spaces they helped to design.

As the design is developed further, fine grain details are vetted to fully integrate and coordinate all of the components and building systems. Refinements completely define the scope of the project so that the cost of the work is accurate and the construction details are complete.

- *By using the processes outlined, and engaging with PWWG’s unique application of those tools and its team of consultants, GSD can be confident that the resulting design will realize the vision and functional goals of your project. And you will have an efficient and comfortable workplace that will be respectful of the character defining features of this mid-century office building.*



PWWG recently completed programming and comprehensive modernization of Office Building Three on the West Virginia State Capitol Campus. PWWG studied and presented several layout configurations via Revit 3D models (right). The open office plan is flexible for future growth and the changing dynamic of departments housed in the facility.

Building Four presents a unique set of goals and challenges. In particular, addressing the life safety egress issues in a manner that preserves the mid-century modern character of the design is front and center. Addressing these challenges in a creative way will form the basis of PWWG's design approach and will become an emphasis as we implement the aforementioned process. What follows are specific areas of detailed analysis.

Life Safety

PWWG recognizes that there are life safety shortcomings in the design of the existing building when compared to current applicable building codes. Of particular concern is the stair separation distance. We are also keenly aware of the costs involved with creating a new addition to the building. While providing valuable life safety improvements, a stair and elevator addition creates no new programmable space to help offset the construction costs.

Vertical circulation in a building this tall is expensive. The two existing stairs provide the handling capacity for the building footprint. PWWG will carefully analyze the underlying intent of the applicable requirements of the International Building Code and evaluate alternative options that, under the circumstances of this particular building, might be pursued to achieve an equivalent level of life safety through an alternate means.

PWWG has successful prior experience developing egress strategies for Building Three. Furthermore, with a solid understanding of the code, PWWG has obtained numerous, logical variances for unique conditions on other existing buildings that were constructed under the requirements of prior codes.

In connection with compliance with the high-rise requirements of the code, PWWG will also conduct an evaluation of the elevator lobby design on the upper floors. In addition to stair separation concerns inherent in the existing design, there are requirements for stair and elevator shaft pressurization. In our



experience, pressurizing both the stairs and elevator shafts can result in technical challenges that make it difficult to pass performance testing. Therefore, we will explore options to achieve equivalent life safety protections in a reliable manner.

Vertical Transportation

PWWG has included SKA Elevator Consulting Group on our team to evaluate the range of options for renovating the existing elevators. We will tap principal Steve Kinnaman's unparalleled experience to help us weigh the functional benefits of an additional elevator against the added cost. This analysis will take into account the type of elevator service usage that the building requires, and the potential mitigating strategies. For example, items such as off-hours service use, increased cab height in one or more elevator cabs, and increased elevator speed for the existing elevators might be satisfactory alternatives to a new elevator.

Constructability

Our cost estimating consultant, Morgan Construction Consultants, will also serve as a constructability consultant. A significant issue in Building Four is the proposed occupancy of a portion of the building throughout the construction period. While we understand that occupancy is intended to occur in only a relatively small portion of the building, it nonetheless has an impact on construction sequencing and life safety systems for an occupied building during the construction phase. Using principal Morgan Kronk's expertise, we will engage GSD to discuss the cost trade-offs between the added construction cost and discomfort of working in a building under construction, as opposed to the cost of establishing swing space and moving to another location. Keep in mind that even if the occupancy is maintained in the building, a move from one floor to another somewhere in the process will still be required.

Accessibility

An obvious shortcoming in Building Four is the lack of accessibility to the first floor of the building from the main building lobby. Of course, there may be many other accessibility concerns related to toilet room access, fixture clearances, door widths, elevator call buttons and similar items. The wheelchair lift in the lobby is, in our view, not an acceptable solution. It places the individual in a prominent position that highlights the disability by the simple fact that they must use the lift. PWWG has considered and will pursue an option that adds a rear door opening to one or both of the existing elevators, to permit access to the first floor. This will require further investigation to confirm whether this approach will work. If it does, it presents a more dignified and unimposing means of achieving access. We have included a diagram to depict this approach.

Security

PWWG has previous experience on the WV Capitol Complex Campus addressing building security concerns to meet requirements of Protective Services in a manner that imposes as little impact on the architecture as possible. Evidence of this is offered by our solution at Building Three. That said, there are multiple points at which access can be controlled effectively, and we will work with GSD and Protective Services to identify whether access will be controlled at the envelope of the building, at the elevators, or at individual floors or tenant entrances.

Sustainability

We understand that LEED certification will not be sought on the project, but that in no way eliminates the obligation to provide a design that incorporates sustainable design features. PWWG will design a project that addresses GSD's sustainability goals. It is embedded in every project that we undertake. We will run a preliminary LEED checklist as if the project were to be submitted to USGBC to determine what level of LEED certification would be expected if the project were to be submitted.

Tenant Space Design

Building Four has the benefit of a relatively small footprint but there could still be a possibility of multiple agencies on the same floor. As such, we will study strategies that result in the maximum reasonable flexibility for agency locations and future change. Also, a generous window-to-wall ratio on all four sides of the building will result in abundant opportunities for natural daylight. PWWG will work with the user groups to develop layouts that provide daylight to the maximum number of the building's occupants. And with FF&E in the Architect's scope of work, we will work with the agencies occupying the building to develop overall furniture concepts that are consistent with, and enhance the concept of, the architectural design.



Existing West Stair Life for Building Four presents an awkward, architecturally incompatible means to move from the Lobby to First Floor.

3

PROJECT EXAMPLES

Case Study: West Virginia State Capitol Building Three Modernization | Charleston, WV

West Virginia State Capitol Building Three is a steel frame office building with a classical limestone facade. The architect was Cass Gilbert Jr., son of the famous pioneer of early skyscrapers.

The project breathed new life and purpose into one of the most prominent buildings on the WV Capitol campus, with preservation, restoration, and adaptive reuse of historic Building Three for use as a modern, well-functioning and welcoming office space. The project deftly melds significant character defining historic features with the latest workplace amenities, celebrating the history and culture of West Virginia, while expressing in tangible form a vision for an optimistic future.

Over time, the offices inside the Capitol Building lost much of the original character. The renovation removed and replaced lowered ceilings, obstructive office partitions, unsympathetic lighting design, an un-welcoming lobby, and cramped hallways doubling as storage space.



after



DMV teller area, before

PWWG's experience with the Building Three Renovations provides the necessary qualifications and experience to approach Building Four Renovations in which a portion of the survey and design work has already been accomplished and in which phasing must occur to accommodate occupied renovation.

Scope of Work: General Exterior

- Replaced existing Ludowici clay tile roof to match existing.
- Replaced all flat roofs, gutters and flashing.
- Conducted masonry testing to develop the least invasive cleaning methods for all brick, limestone, Virginia Greenstone and granite masonry.
- Repointed failed vertical mortar joints, and replaced all sky-facing mortar joints with sealant and backer rod.
- Refinished all existing bronze window frames and sashes. Existing single pane glass was replaced as necessary.
- Remediated water infiltration issues at balustrade piers and copings
- Refinished existing bronze windows.
- Restored and cleaned limestone, brick, and granite masonry.

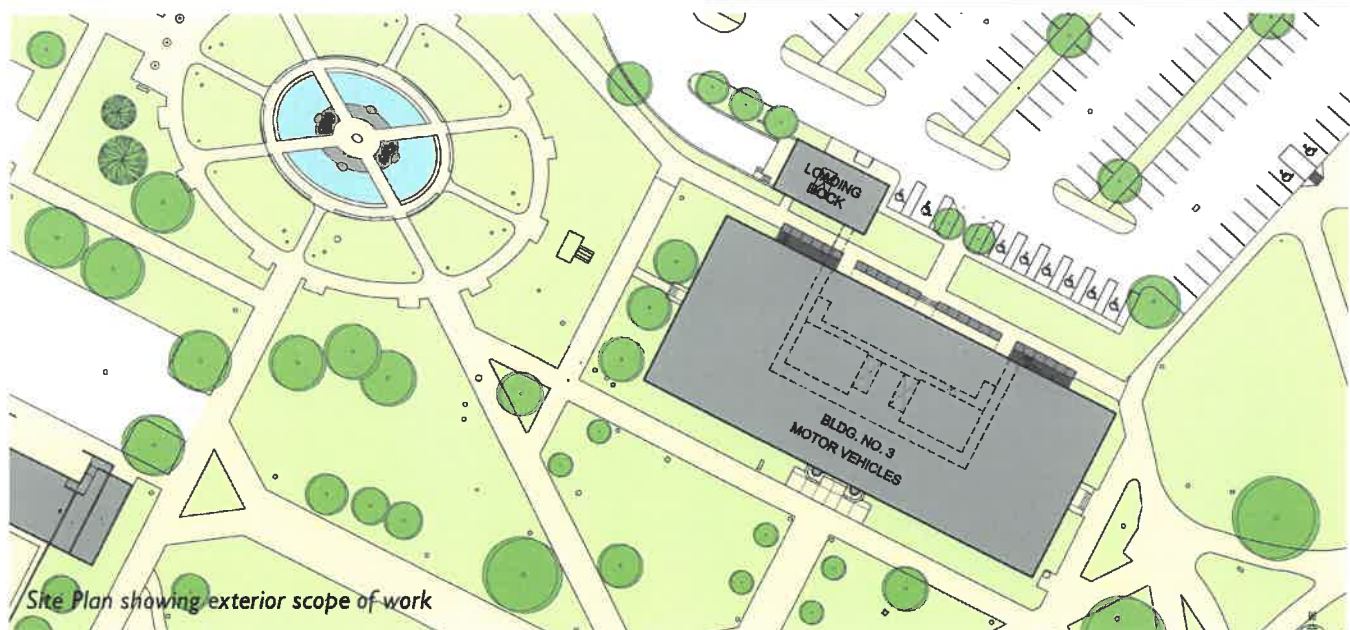


Scope of Work: North Entrance

- Secured north vestibule 'employee' entrance and provided ADA accessible walkways
- Extended security buffer from parking lot drive to building with landscaping and public space

Scope of Work: Loading

The existing building did not have an operational /designated loading area, due to a disabled sidewalk lift, therefore all deliveries were dollied into the building through a makeshift ramp to the rear door. By incorporating a separate loading pavilion adjacent to the building and connecting it to the basement via an underground tunnel, the loading operations of the building created a more secure and functional solution to the building's loading requirements.





North Entry, before



North Entry, after



North Entry, before



North Entry, after



New Loading Pavilion connects to the basement via a secure underground tunnel



parapet existing condition



parapet during demolition



parapet reconstructed



existing window condition



window restoration mockup

Scope of Work: South Entry/Front Door

- Restored the original bronze entrance vestibule
- Streamlined and integrated Security
- Relocated all TSA security equipment from the historic main lobby by diverting public traffic to an adjacent space off of the entrance vestibule.



South Entry, before



South entry after restoration

Scope of Work: General Interior

Reconfigured all building spaces to meet the following building, life safety and accessibility codes:

- High-rise building standards
 - Fully functional sprinkler system
 - Pressurization of stair enclosures and elevator hoistways
 - Reconfigured outdated, non-compliant exiting routes.
- Redesigned all MEP systems to current ASHRAE standards.
 - Analyzed the existing elevator traffic flow of the building and concluded that 1 of the 4 elevators could be modified into a service elevator.

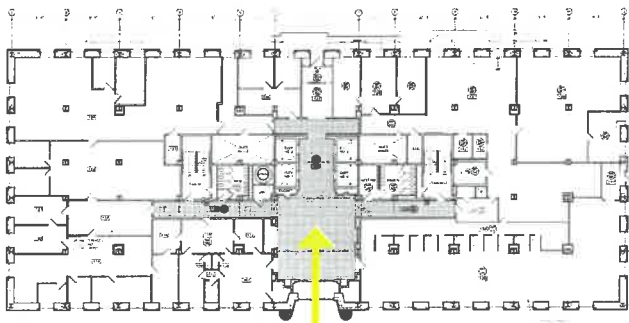


Lobby (before)

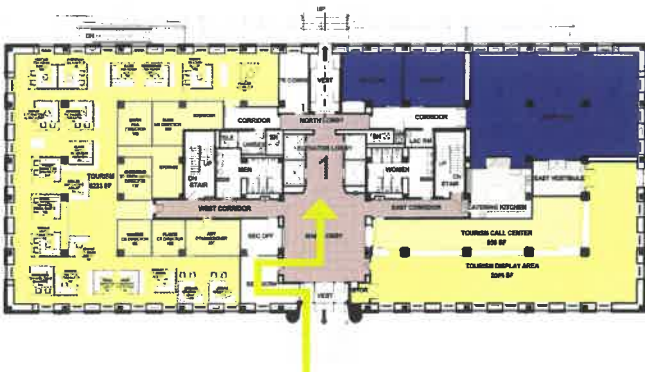


Scope of Work: First Floor / Main Lobby

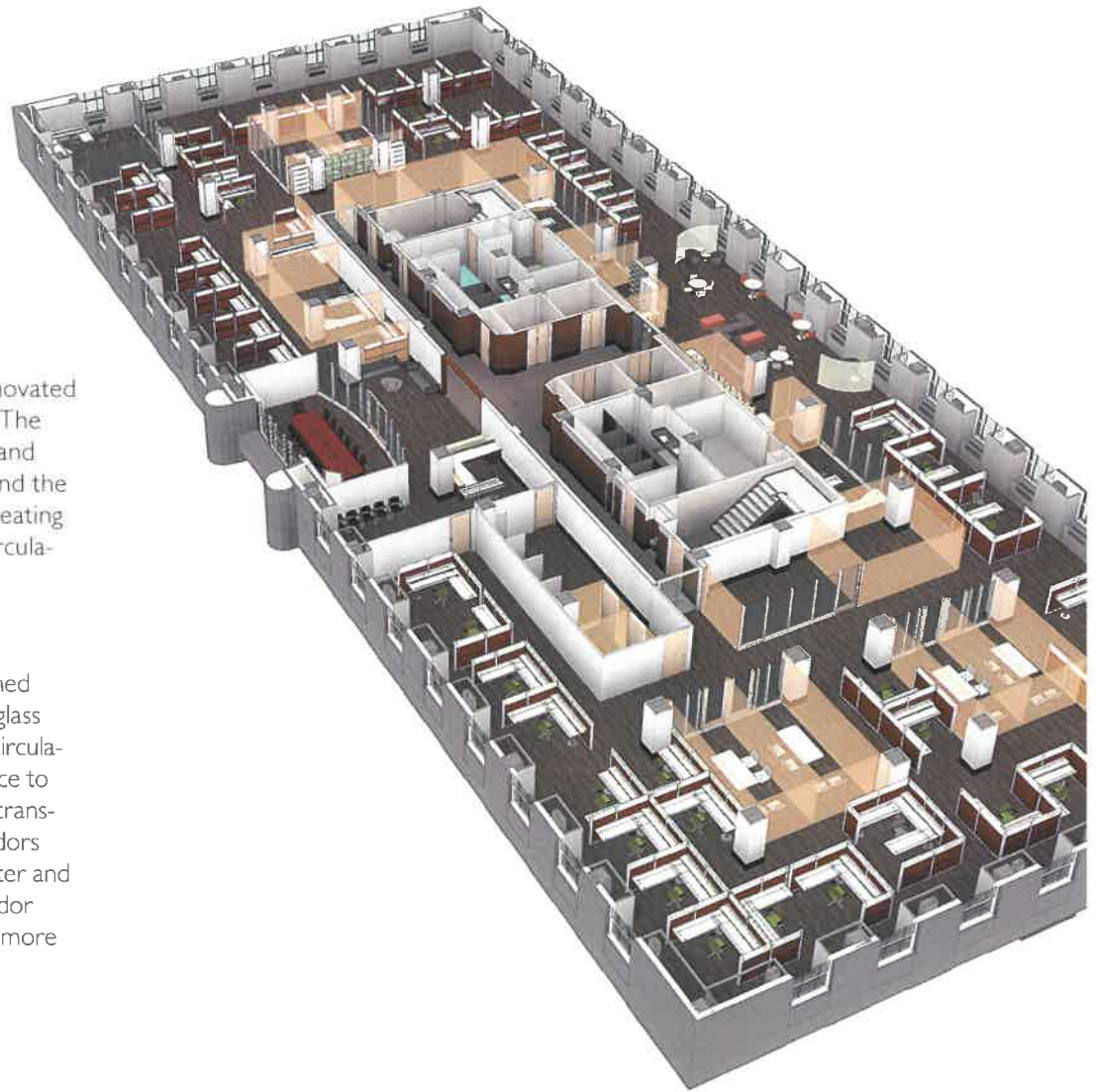
- Restored all historical finishes to the approval of WV SHPO and WV Capitol Building Commission standards
 - Coordinated paint analysis of historic plaster and door jambs.
 - Refinished all terrazzo floors, acoustic plaster ceilings and lighting coves, bronze doors and light fixtures, and marble wall panels.
- Installed digital wayfinding / signage monitor within the original bronze lobby directory case
- Restored the existing DMV teller and public space to house WV Tourism's Call Center and Display area with flexible IT and AV capabilities.
- Redesigned all restrooms to ADA standards and provided family and lactation rooms within the existing building core area.
- Reconfigured existing and underutilized office space to flexible, multi-functional, rentable spaces:
 - Large Hall, a 2,100 sf multipurpose room equipped with projectors, project screens, audio system, and a catering kitchen for WV State ceremonies, presentations and/or events.
 - Video Conferencing and Meeting Rooms, including pre-function / breakout spaces



Existing Security Entrance

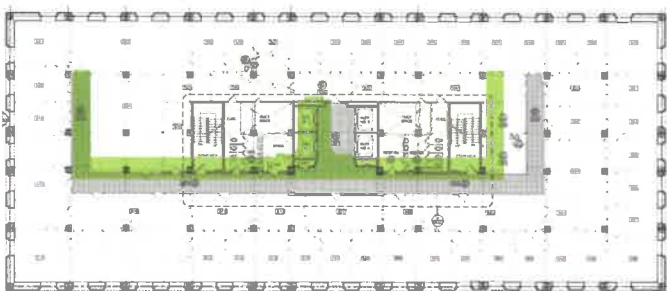


New separate Security Entrance



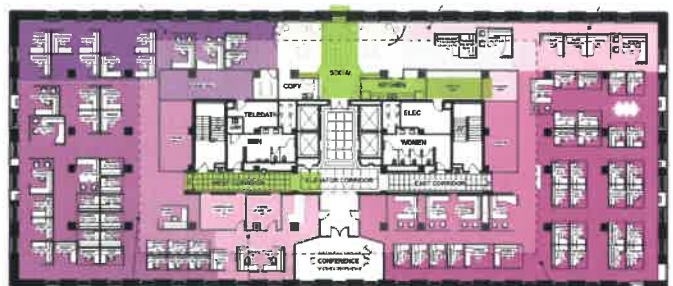
PWWG completely renovated the typical floor plates. The existing elevator lobby and corridor wrapped around the interior of the space, creating a dark and inefficient circulation path.

The revised plan shortened the corridor and added glass partitions between the circulation space and office space to improve daylighting and transparency. The new corridors are more efficient, brighter and more inviting. The corridor redesign also resulted in more usable office space.



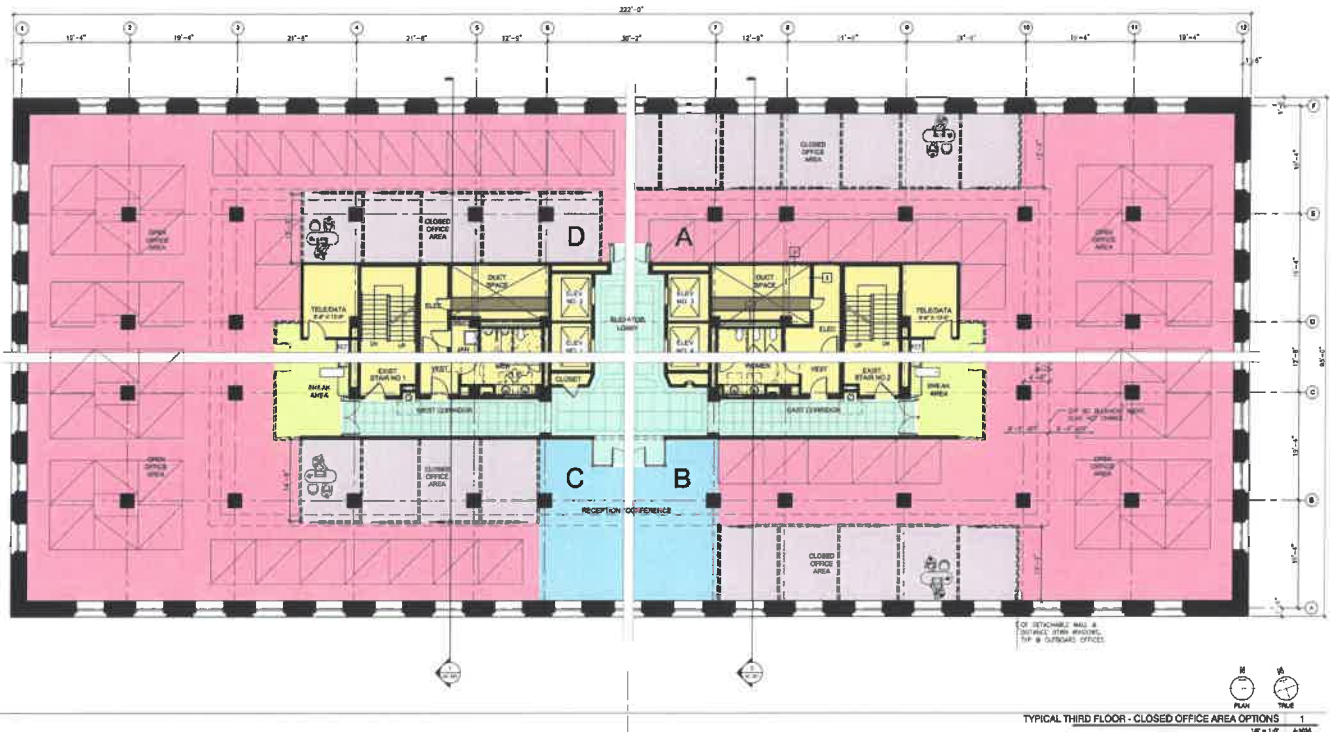
Typical Floor Plan, Before

18,291 gsf floor plate
2,026 sf Circulation (11%)
50 workstations



Typical Floor Plan, After

18,291 gsf floor plate
1,200 sf Circulation (7%)
99 workstations



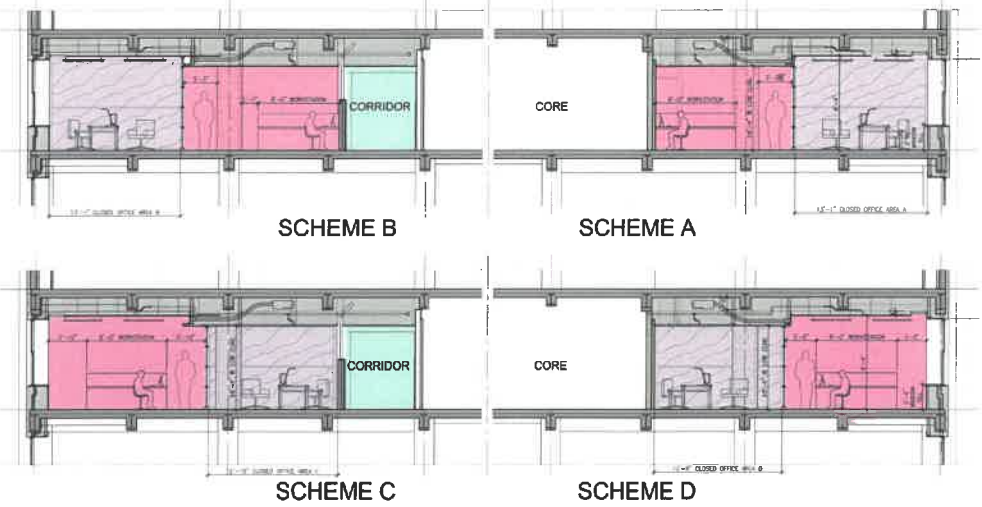
PWWG studied various configurations of office spaces within the existing structure. We developed a matrix of space allocations to allow the client to decide which configuration would best suit their operations.

SCHEME D			SCHEME A		
DESCRIPTION	TOTAL AREA	PERCENTAGE	DESCRIPTION	TOTAL AREA	PERCENTAGE
OPEN OFFICE AREA	13,618	89%	OPEN OFFICE AREA	13,060	88%
CLOSED OFFICE AREA	1,332	11%	CLOSED OFFICE AREA	1,890	12%
QUANTITY		PERCENTAGE	QUANTITY		PERCENTAGE
8XB WORKSTATIONS	56	59%	8XB WORKSTATIONS	70	88%
6XB WORKSTATIONS	39	41%	6XB WORKSTATIONS	14	12%

SCHEME C			SCHEME B		
DESCRIPTION	TOTAL AREA	PERCENTAGE	DESCRIPTION	TOTAL AREA	PERCENTAGE
OPEN OFFICE AREA	13,684	92%	OPEN OFFICE AREA	13,490	90%
CLOSED OFFICE AREA	1,255	8%	CLOSED OFFICE AREA	1,460	10%
QUANTITY		PERCENTAGE	QUANTITY		PERCENTAGE
8XB WORKSTATIONS	80	80%	8XB WORKSTATIONS	56	59%
6XB WORKSTATIONS	39	40%	6XB WORKSTATIONS	39	41%



An innovative series of modular partitions located around the central corridor provide flexible HVAC control to offices. PWWG designed the system for maximum flexibility in the future.





Corridor (before)

The design replaced opaque doors with fixed glass and all-glass doors to bring natural daylight into the corridors.

These glass doors also allow views to the exterior from the lobby spaces. The new lighting brought the existing stone finishes to life.



Flexible meeting space with electrical floor outlets

PWWG exposed the existing concrete floor structure in open office areas to create a more open feel.



The office interior design balanced different department needs for privacy and security. Common spaces are located around the core. These spaces include private huddle rooms, meeting spaces, kitchens, pantries, and storage spaces.



Open office areas were pushed to the exterior of the floorplate. Power and IT were distributed from building structure to avoid power and data poles from above. Remote or columnless spaces were equipped with floor boxes for power and data to ensure future furniture layout flexibility.

PWWG provided programming services to organize different size departments and staff throughout the building.

- DEVELOPMENT OFFICE
- DIVISION OF ENERGY
- OFFICE OF ECON OPP
- WORKFORCE
- DIVISION OF LABOR
- GENERAL STORAGE
- CIRCULATION
- UNPROGRAMMED
- MECHANICAL



Union Trust Building Renovation for Class-A Office Space | Pittsburgh, PA

Perfido Weiskopf Wagstaff + Goettel and Elkus Manfredi Architects



Client The Davis Cos. (Boston)

Size 517,000 sf

Construction Cost \$36,000,000

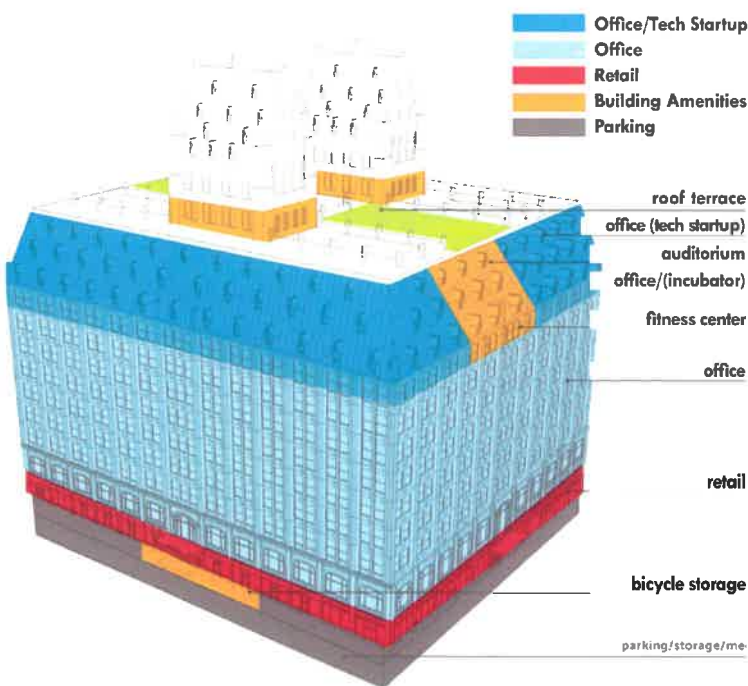
PWWG Scope of Work

- Forensic Investigation
- Architectural Design, including Structural Changes
- Parking Garage Design
- Contract Documents
- Contract Administration

Key Project Features

- Project combined historic features of a former shopping arcade with operational needs of a modern Class-A office building.
- Modernized floor layout, MEP systems, and amenities throughout the building; upgraded AV, security, telecom, accessibility and life safety throughout the building.
- Open plan office design is ideal for future changes in programming
- PWWG Coordinated full consultant team
- PWWG led Code Research, Construction Documents & Contract Administration
- Full modernization of 11 elevators and control system
- Project is LEED Certified

Completion 2016



Key Cost and Schedule Constraints Met

- All work preserved historic architectural character and conformed to SHPO and NPS Standards, which enabled the client to secure historic tax credits—a significant component in making the project possible.
- Project was completed on time, which enabled the client to meet leasing commitments.

Key Design Strategies for Transforming the Historic Building

- Stabilize and restore the entire exterior.
- Create parking for 190 cars in the building's 2 existing base-ment levels
- Restore and rejuvenate interior public spaces.
- Create infrastructure for Class-A office space.
- All restorations and interior renovations respect the historic context of the original building.
- Create amenities to attract new tenants.
- Major accessibility and systems upgrades throughout that are sympathetic to historic fabric.
- Include specialized infrastructure to accommodate future retail and restaurant fit-outs.

The renovation removed existing deep floor plates, suspended ceilings, and valences that obscured a third of each window on floors 2 through 9, making the space feel cramped (top right). Over time, services had been run up the columns, which were built out to 3.5 ft square to accommodate the accretion (top left). PWWG's design stripped all column enclosures back to minimal profile.



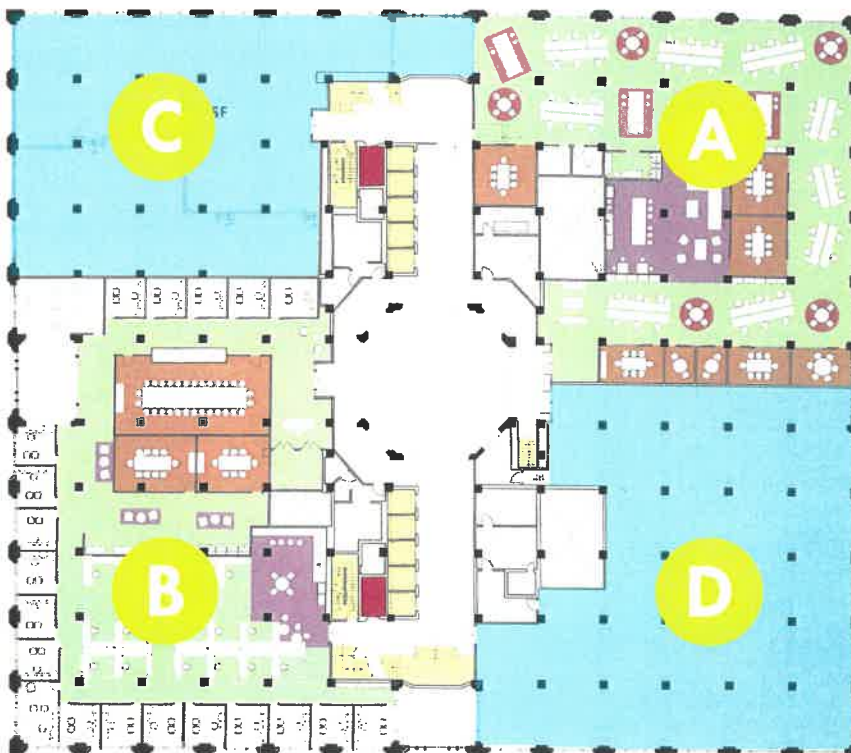
New office floor plans are flexible, accommodating from 1 to 4 tenants, and a variety of work cultures. A typical office floor plan demonstrates the flexible concept:

Quadrant A — Open/collaborative arrangement; closed offices at interior

Quadrant B — Arrangement with closed offices at perimeter

Quadrant C — Future tenant space with 6,620 sf

Quadrant D — Future tenant space with 9,100 sf



NPS allowed limited exposed ductwork in office areas to achieve higher ceiling heights, while a smooth surface appearance was maintained for all ceilings to be similar to the original historic plaster ceilings. Any dropped ceilings installed per tenant requests must be set back out of view from windows and the rotunda.



3D visualization of sample office fit-out with open/collaborative arrangement.



Before

Prior to renovation, entries to tenant office spaces on Floors 2-10 created physical and visual barriers (top, view into tenant space). The new design features elegant glass entries that restore the curved footprint of the original walls, allowing the design to be NPS and tax credit compliant. The new glazed storefronts add borrowed light to the spaces within, and create vibrant views into and out of the tenant spaces.



Before

The redesigned Conference Room on the 11th floor features PWWG's new layout, lighting, finishes, and AV systems.





Design Award
Winner



LEED
Certified



Before

The Fitness Center at the ninth floor reuses space formerly dedicated to HVAC infrastructure. Traces of existing plaster moldings and materials were left in place as artful reminders of the building's former life. Original steel trusses are a nod to the Steel City. The Center includes open fitness and strength training, a yoga studio, and locker rooms.



Before

Design strategies for the renovation included new lighting and comfortable, stylish seating for tenants and visitors. As a result, the arcades of commercial spaces at street level, formerly desolate and uninviting, are now visually enticing.



Cincinnati Symphony Offices Redesign

(Part of Comprehensive Cincinnati Music Hall Revitalization) | Cincinnati, OH



Key Project Features

Client

Cincinnati Center City
Redevelopment Corp.
(3CDC)

Size

Comprehensive:
225,000 sf;
CSO Offices: 12,500 sf

Construction Cost

\$135,000,000
(comprehensive)

- Landmark building in downtown historic district hadn't been upgraded in 50+ years.
- Existing offices for the CSO were a windowless, overcrowded maze of corridors and small offices; the building did not have enough floor area to accommodate the staff that had grown to over 100 people.
- PWWG's complete redesign of CSO's offices accommodates increased staff in the same footprint, makes operations more efficient, and introduces natural light to a cavernous one-story space.
- PWWG inserted a new thin flat slab concrete mezzanine to increase available floor area. Bricked up original windows were opened and restored to bring daylight to the entire office.
- PWWG's open floor plan co-locates teams working on diverse operations in mini-environments that support a variety of work needs from collaborative to private.
- The aesthetic is modern and bright, with acoustical amenities to maintain a productive aural environment.
- Project deftly melds character defining features of an existing building with the latest workplace amenities.
- PWWG coordinated full MEP/AV/IT/Acoustics upgrade + elevator addition

PWWG Scope of Work

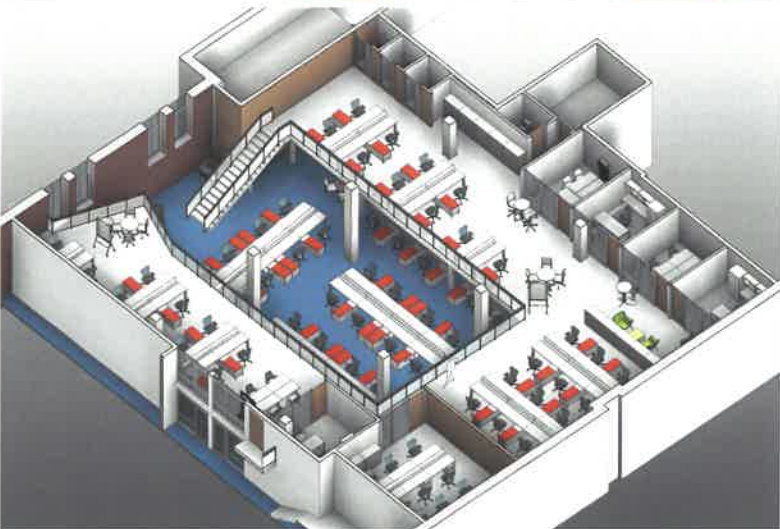
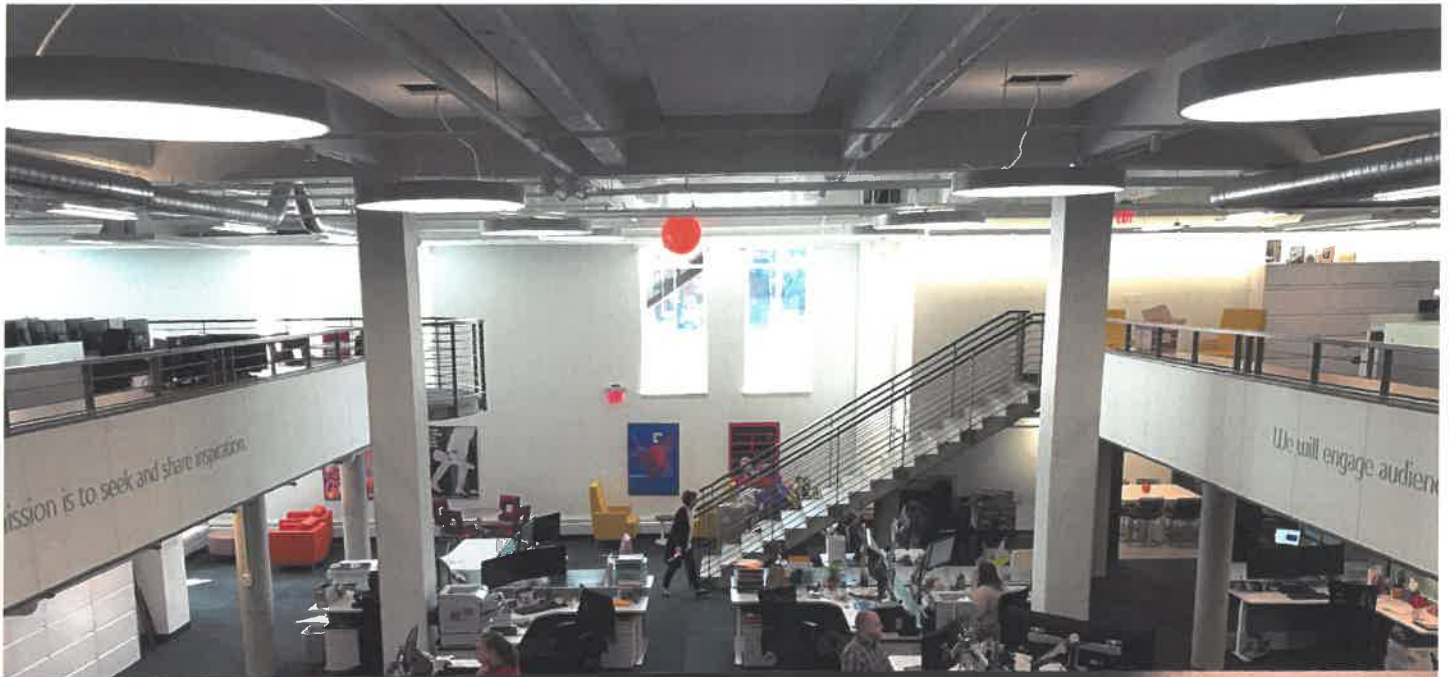
- Programming,
- Code Research
- Architectural Design and Documents
- Coordinate Work of all Consultants
- Contract Administration

Completion 2017



Design Award
Winner





▶ Revit 3D model helped the client visualize addition of a Mezzanine.

◀ Test fit with the Revit 3D model to estimate capacity and operations with adding a Mezzanine.

Warner Hall Renovation for Administrative Offices — Carnegie Mellon University

Pittsburgh, PA

Client

Carnegie Mellon University

Size 4 floors

Construction Cost

6.5M (estimated)

PWWG Scope of Work

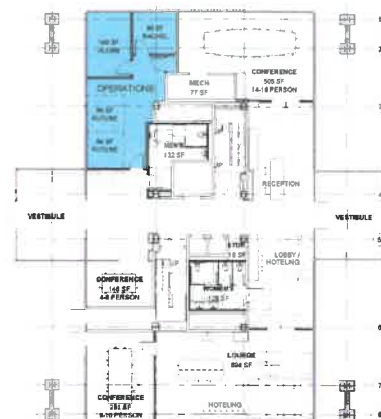
- Programming
- Space Planning
- Test-fits
- Architectural Design
- Contract Documents
- Coordination of Consultants
- Contract Administration

Completion 2019



Key Project Features

- Interior improvements to an existing building for new administrative and student service uses.
- Renovation targets improving the user experience for everyone working in and visiting the building. Unique design and schedule challenges: realigning users by floor; the addition of an all-gender ADA restroom and amenity upgrades on each floor; and planning for swing space during construction.
- PWWG's scope includes program verification, space planning, construction documents, and construction administration. PWWG also evaluating full building HVAC upgrade.
- Challenging schedule considerations for PWWG include how to accommodate the University's need for swing space for housing administrative and service functions during construction, and how to negotiate the ebb and flow of capacity needs within the academic calendar. PWWG is also coordinating for this renovation with projects that will be in construction elsewhere on campus.
- The project is targeted for LEED Silver Certification.



PWWG's is exploring new ways to partition work spaces and to reclaim views and light at the building's perimeter.



Allegheny County Courthouse Facilities Plan & Renovation

Pittsburgh, PA



Client Allegheny County

Size 103,500 sf

Construction Cost

Withheld at Client's Request

PWWG Scope of Work

- Forensic Investigation
- Document Existing Conditions
- Programming
- Planning
- Budgeting/Cost Estimating
- Architectural Design
- Concept Systems Design
- Renderings and report for Fundraising

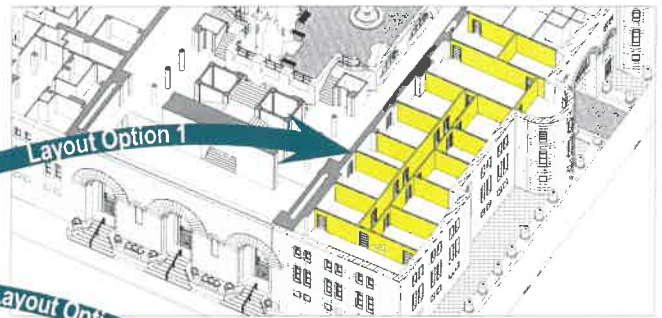
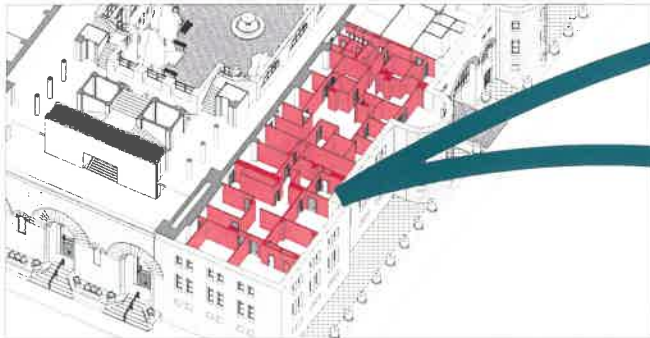
Completion

Facilities Plan - 2016

Phase I - In-Progress

PWWG was tasked with developing a plan for the Courthouse to map projects to preserve and renew this National Register Landmark building. The Facilities Plan will guide future restorations, renovations, and repairs to this Historic Register icon in downtown Pittsburgh, balancing architectural stewardship with the need to outfit the building for 21st century operation.

- 12-month study addresses envelope and interior restoration and improvements for one of the most important architectural masterpieces in Pittsburgh
- Program includes offices, amenities, labs, and public gathering spaces
- PWWG led a team of experts in adaptive reuse, integration of new systems in existing buildings, sustainable systems, and cost estimating
- Engaged County executives, facilities managers, County judges, administrators, and staff to discuss options and needs
- Outlines detailed plans to restore and renovate the building for another century of use
- Concept designs for all inadequate/obsolete MEP systems
- Maps a series of 15 phased projects through 2030
- Addresses climate control, energy efficiency, sustainability and Accessibility integrated with architectural upgrades
- Study is key for fundraising to realize the built projects; Several projects have already been funded.



PWWG's 3D computer model of the Courthouse presented Existing Conditions (left), and options for renovating the office layout (right).



Existing clay tile roof, before restoration



Construction under way, summer 2018—Scaffolding to the eave of the roof line; each week a crane is brought in to unload demo'd materials and load new tile to the top platform.



PWWG coordinated a tour with the County's project team of the Ludowici clay tile factory to observe the manufacturing process for specialty tiles used for the Courthouse re-roofing.



The scaffold platform doubles as a staging area for materials.

GOVERNMENT OWNED FACILITIES

Tower Engineering has provided mechanical and electrical consulting engineering services for numerous government-owned facilities. With eight decades of experience, our firm knows the importance of meeting the client's needs without exceeding the project's budget. Thoroughly familiar with current government and military standards, our firm has provided engineering services for the following government-owned facilities:



FEDERAL GOVERNMENT

- William S. Moorhead Federal Office Building, PA
- Department of Labor Job Corps Center, PA
- Butler VA Hospital, PA
- Department of Labor Job Corps Medical Center, PA.
- Army Corps of Engineers Lab, PA
- Army Corps of Engineers Neville Island, PA
- National Guard Readiness Center Connellsville, PA
- National Guard Stryker Center Cambridge Springs, PA
- National Guard Fairmont Readiness Center, WV
- Army Reserve Center Jane Lew, WV
- Army Reserve Center Clarksburg, WV
- IRS Liberty Center Tenant Fitup, PA
- INS Application Support Center, PA
- VA Medical Center Pittsburgh, PA (multiple)
- Department of Energy Records Storage, WV
- Department of Agriculture Lab, PA
- National Geospace Agency St. Louis, MO

STATE GOVERNMENT

- State Police Building, PA
- Capitol Building Welcome Center, PA
- Tygart Lake State Park Lodge Addition, WV
- Twin Falls Resort State Park Addition, WV
- DER Regional Offices, PA
- DER Lab Renovation, PA
- Ebensburg Center HVAC Renovation, PA
- Buckingham Protection Custody Facility, PA
- HRS Computer Room, PA
- Capitol Science & Cultural Center, WV
- Scotland School for Veterans Children, PA

UNITED STATES POSTAL SERVICE

- McKnight Road, Pittsburgh, PA
- Clairton, PA
- Monongahela, PA
- Northside, Pittsburgh, PA
- Grant Street, Pittsburgh, PA
- Rochester, PA
- Bulk Mail Handling Facility, Pittsburgh, PA
- Open Ended Services Agreement, PA and WV

HISTORICAL PROJECT EXPERIENCE

Tower Engineering has designed for historic buildings throughout its 85 year history, including notable local projects such as the Heinz Lofts, Children's Museum, Ice House Studios and the Felician Motherhouse in Coraopolis.

Tower's engineers are sensitive to the balance between preserving essential architectural design details and restoring or (more likely) replacing functional systems to make buildings viable again. As essential team members, Tower's MEP engineers can collaborate on creative problem solving. Their knowledge of a broad spectrum of MEP system types, combined with sophisticated energy modeling results in the best match for energy savings, highest performance and a minimum amount of visual disruption.



Felician Motherhouse and High School (K-12), Pittsburgh, PA

Children's Museum (Non profit), Pittsburgh, PA

Strand Theater (non profit), Pittsburgh, PA

Ice House Studios (EDC), Pittsburgh, PA

6012 - 6018 Penn Avenue (EDC), Pittsburgh, PA

Connellsville Library, Connellsville, PA

Frick Art Museum & Historical Center, Pittsburgh, PA

Laughlin Memorial Library, Ambridge, PA

Pennsylvania Capital Building Library, Harrisburg, PA

Sweetwater Center for the Arts, Sewickley, PA

Heinz Lofts, Pittsburgh, PA

- Plus multiple buildings on K-12 and Higher Education campuses.



OFFICE AND CORPORATE HEADQUARTER EXPERIENCE

Tower Engineering's expertise in the design of corporate facilities affords us the confidence to look beyond the mere technical challenges to the personal and social aspects of the built environment. We understand the importance of designing electrical and mechanical systems that enhance the creative environment. We design mechanical and electrical systems that are cost-effective and energy efficient.

Tower Engineering has significant experience with the design of mechanical and electrical systems for corporate offices including consulting engineering services for more than 50 projects with PNC Bank since 1990, representing more than one million square feet of design.



- 300 Oxford Building and 400 Oxford Building
- AAA West Penn
- Aerotech Corporation
- Alcoa Shared Services
- American Eagle Outfitters
- Applied Concepts, Inc.
- Automatic Data Processing Corp
- Bayer Corporation
- Bell Telephone Headquarters Building
- Black Box Corporation
- Blue Cross of Western Pennsylvania
- Canaan Valley Institute
- Cardiac Assist Associates
- Carpenters Union Headquarters
- Chatham Office Center
- Cherrington Bldgs #200, #300, #400, #500 and #600
- Commerce Court
- The Conair Group World Headquarters
- Cranberry Woods
- Cutler/Hammer Headquarters
- Dickerson Office Building
- Dollar Savings Bank
- Duquesne Light Co.
- E.G. Smith Headquarters
- Eickhoff America Corporation
- Federal Office Building, Pittsburgh
- Fisher Scientific Headquarter
- Gatan Corporation
- General Telephone Co.
- Glidepath Office Building
- Mine Safety Appliances Company
- Mobay Corporation
- National City Bank
- New Enterprise
- North Pittsburgh Telephone Company
- OCMET Corporation
- Olsten Health Centers
- Peoples Natural Gas
- Pittsburgh Board of Education
- Pittsburgh Vision Services
- PPG
- Quantum Computer Office/Warehouse
- Respironics
- Ryan Homes
- Scientific Systems Services
- Swanson Land Office
- Thorn Hill Marketing & Printing
- Westinghouse Electric Corporation

AMERICAN EAGLE OUTFITTERS - QUANTUM 2 & 3

PITTSBURGH, PA

YEAR COMPLETED:
2007

SQUARE FOOTAGE
291,200

TOTAL CONSTRUCTION COST
APPROX. \$35 MILLION

American Eagle Outfitters originally bought the Quantum 2 Building in the Southside Works neighborhood of Pittsburgh, along the Monongahela River on an old brownfield site. Tower Engineering designed the Quantum 2 fitout, including lighting, power and HVAC systems only. Q2 was 157,200 square feet of fit out space.

Then, American Eagle purchased the Quantum 3 building across the street, and Tower provided full MEP/FP services for the base building and tenant fitout. Special features include specialty lighting systems, a commercial kitchen with dining areas, a fitness center, conference room, offices, and a data center. Q3 was 134,000 square feet of fit out space.



Quantum 2 Building



Quantum 3 Building

CRANBERRY WOODS BUSINESS PARK

YEAR COMPLETED:

2010

TOTAL CONSTRUCTION COST

\$62 million

CRANBERRY TOWNSHIP, PA



Tower Engineering provided mechanical and electrical engineering services for more than \$62 million of construction at Cranberry Woods Business Park. Our projects included:

- Building I: Tenant fitup of approximately 12,000 sf.
- Building II: Tenant fitup of 107,000 SF for Verizon Call Center. Tower Engineering also provided systems commissioning services for this building.
- Building III: Mechanical/electrical engineering design and commissioning services for a new 120,000 SF, \$18 million, Class A office building. In addition, Tower Engineering provided engineering services for tenant fitup of the entire building.
- Building IV: Mechanical/electrical engineering services for a new 106,436 SF, \$18 million, Class A office building - Tower Engineering provided engineering services for tenant fitup of 13,000 SF of this building.

WATER-COOLED VARIABLE FREQUENCY DRIVE DIVISIONS ARC FLASH AND POWER SYSTEMS STUDY SIEMENS INDUSTRY INC., NEW KENSINGTON, PA

PROJECT OWNER:
SIEMENS INDUSTRY INC.
CLIENT CONTACT:
ERIC TROUT
724-212-1137
ERIC.TROUT@SIEMENS.COM



Siemens Industry Inc. develops a variety of products including water-cooled variable frequency drives for large motors. These drives come in multiple configurations including multiple medium voltage configurations, stand-alone or integrated solutions, and a variety of frequency and horsepower options. A set of buildings in Western Pennsylvania provide the design, manufacturing and testing of a range of these drives. These facilities were comprised of three separate buildings that perform the design and engineering of the drives, in addition to the manufacturing and testing of the equipment.

The existing facilities did not have any single-line diagrams or any other diagrams describing the existing infrastructure. Tower Engineering used original drawings from when the buildings were constructed to prepare a model of the existing system. Through the use of personal protective equipment (PPE) and client-mandated safety procedures, Tower Engineering investigated the facilities. All electrical components from the incoming 23kV services down to the 480V sub-panels located throughout the production floor were opened, verified and documented. All distribution gear, transformers, test stations, and electrical equipment in the three buildings were surveyed and documented.

Utilizing SKM software, the three buildings were separately modeled. This included dividing each building into individual systems based on incoming voltage as each building had multiple incoming utility sources. These newly created single-line models were then analyzed using the SKM software. Short circuit, interrupting duty, arc flash, and coordination studies were performed on the finalized models, and recommendations based on the findings were made. A final binder was produced for the client that included documentation of all existing equipment, the new single line diagrams, a map showing equipment locations, a printout of all the study results and time current curves, and Tower Engineering's recommendations. Finally, after coordination with the client's safety department, arc flash labels were created and affixed to all surveyed electrical equipment.

Siemens recently consolidated the three original buildings into two buildings and Tower Engineering is performing an update to the arc flash and power systems studies. The final study will include a reused binder and reused arc flash labels.

THE CONAIR GROUP, INC. HEADQUARTERS AND RESEARCH & DEVELOPMENT CENTER

PITTSBURGH, PA

YEAR COMPLETED:

1998

TOTAL SQUARE FOOTAGE:

82,000

TOTAL CONSTRUCTION COST

\$5.5 million



Tower Engineering provided mechanical and electrical engineering services for this renovation/expansion project for Conair, a manufacturer of ancillary processing equipment used in injection molding and extrusion processes.

This project proceeded under a very tight schedule and included renovation of an existing office building and construction of a 40,000 SF Tech Center addition, which houses development labs for the testing of plastics industry equipment in actual production settings. The new addition is linked to the existing building by an atrium to the main building, creating a new lobby, conference areas and training facilities for Conair's customers. Two existing buildings containing 42,000 SF were completely renovated to provide contemporary corporate office and conference space.



Sample Project Experience

Moment Engineers staff experience includes a wide variety of new building design and existing structure evaluation and renovation. The list below is a small sample of the projects for which our staff has had responsible charge of the structural engineering design and contract document production. All projects listed were or are being constructed in West Virginia.

<u>Project</u>	<u>Sq. Ft.</u>
WVU Parkersburg Child Development Center	5,170
WVU Parkersburg Applied Technology Center	19,000
WVU Tech Engineering Lab Building Fnds	11,100
Marshall University Stadium Team Store	2,350
Kappa Alpha Fraternity House, WVU	14,000
West Liberty University Health Sciences Bldg	70,500
Mountaineer Challenge Academy	47,790
Glen Jean - AFRC	107,100
Elkins - AFRC	60,570
Lewis County Judicial Annex	28,000
Robert C. Byrd Regional Training Institute	143,000
Advantage Valley Advance Technology Center	55,040
Summit Bechtel Reserve Bathhouses (358 units)	646 ea.
Logan State Office Building	53,200
Greenbrier East H.S. Renovations & Additions	205,100
Lincoln Co. High School	216,500
Wayne Co. Spring Valley High School	175,000
Cabell West Elementary School	55,800
Judge Donald F. Black Courthouse Annex	37,000
WV Hospital Association Office Building	29,700
Cacapon State Park Addition	9,840
Alderson Federal Prison Dormitory	60,600
Western Juvenile Detention Center	29,000
NGK-NTK Production Facility	78,000



West Virginia University Baseball Park Complex



SERVICES:

Site/Civil
Geotechnical
Traffic

LOCATION:

Morgantown, West Virginia

CLIENT:

West Virginia University

ARCHITECT:

DLA+Architecture
Populous

The Monongalia County Ballpark Complex includes 2,500 grandstand and club seats, lawn seating, and amenities such as a party deck and children's playground. A clubhouse, team offices, strength and conditioning facilities, ticketing office, and maintenance facilities are provided for the university and a possible future minor league team.

Langan provided a geotechnical investigation to delineate abandoned underground mine workings, deep compressible soils, and shallow expansive soils. Construction documents were provided for a mine stabilization grouting program to arrest future subsidence beneath the proposed structure. Our engineers observed and documented the saturation grouting program, and the confirmation test boring program to verify the placement of the grout.

Langan provided recommendations for a dynamic compaction program of the compressible soils allowing for the use of shallow spread footings without deep undercuts, provided recommendations for treatment of the expansive soils, and observed and documented the implementation of the recommendations.

Langan designed parking lots and driveways to accommodate deliveries, refuse and recycling areas, bus parking, and television truck parking. Walkways were designed to provide circulation around the stadium and to future off-site parking lots.

The design/build project involved a compressed schedule to allow the stadium to be finished in time for the 2015 season opener. The mine stabilization grouting activities were performed while the site and stadium designs were being finalized. Architectural and engineering designs were coordinated to expedite early completion of the foundations and site utilities.



LANGAN

West Virginia University College of Business & Economics



SERVICES:

Site/Civil
Survey
Construction Administration

LOCATION:

Morgantown, West Virginia

CLIENT:

West Virginia University

ARCHITECT:

Strada
Gensler

West Virginia University plans to construct a new building to house the School of Business and Economics on their main campus in Morgantown, West Virginia. The development is anticipated to be an 180,000 SF structure with 23,400 SF of campus recreation space, 3,600 SF of food/retail/lobby space, and other associated site features. Upon completion, the new School of Business and Economics will serve as the hub of educational and experiential learning on campus, including technologically advanced and uniquely designed active learning spaces that can adapt to ever-changing business learning environments.

Langan is providing site/civil engineering and surveying services in support of the development. Our surveying team performed an ALTA/NSPS Land Title Survey for the project site, totaling 4.8 acres. Our team also performed an existing conditions survey to obtain detailed topographic information using a combination of conventional on-the-ground survey methods and aerial photogrammetry for portions of the site that have limited access. Additionally, our team collected utilities information including storm and sanitary sewer systems, water, gas, telephone, communication cables, and electric.

Our site/civil engineering team is providing full civil design services for the development. This started with a conceptual/schematic design and runs through to the design development phase, including erosion and sediment pollution control design, stormwater management design, infiltration testing, water and sanitary service design, and more. Our team is providing construction documentation, coordinating with the team through the bidding and negotiation stage of the project, and providing construction administration services periodically throughout the construction process as well.



THE SEXTANT GROUP

RELEVANT EXPERIENCE :: OFFICE RENOVATIONS

American Century Investments, Kansas City MO - *Workspace Tenant Improvements*

Air Products and Chemicals, Inc., Allentown PA - *Corporate Office Renovations*

American Enterprise Group, Des Moines IA - *Headquarters Remodel*

Amgen B24, Thousand Oaks CA - *Conference Center Auditorium*

Blue Cross Blue Shield Nebraska, Omaha NE - *Customer Experience Center*

ConAgra Foods, Omaha NE - *Corporate Presentation Auditorium*

Corning Incorporated, Corning NY - *Conference Center Renovation*

Entercom Communication Corp., Philadelphia PA - *New Philadelphia Headquarters*

Fortune 500 Confidential Corporate Client, Mountain View CA - *Private Conference Room*

Google Inc., Pittsburgh PA - *Bakery Square*

Grange Mutual Insurance, Columbus OH - *Corporate Headquarters*

J.J. Gumberg, Pittsburgh PA - *Videoconferencing Room*

Harter, Secrest & Emery, LLP, Rochester NY - *Bausch & Lomb Tower*

H.J. Heinz Company, Pittsburgh PA - *New World Headquarters*

JPMorgan Chase & Co., Houston TX - *Strategic Hub Refresh*

JPMorgan Chase & Co., Columbus OH - *Conference Center Polaris*

JPMorgan Chase & Co, Tempe AZ - *Discovery Campus*

JP Morgan Chase & Co., Tempe AZ - *Conference Center Renovation*

Lenovo USA, Raleigh NC - *Office Consolidation*

Lenovo USA, Morrisville NC - *Executive Briefing Center*

McDonald Hopkins, Cleveland OH - *Executive Conference Room, Meeting Rooms*

North Carolina Electric Membership Corporation, Raleigh NC - *Corporate Headquarters*



Nexen Energy Corporation, Calgary AB - *Conference Room*

Northwestern Mutual Insurance, Pittsburgh PA - *Corporate Offices*

Samsung, New York NY - *Customer Experience Center*

Confidential Global 500 Software Company - *Building 1 Lobby*

SAP America, Inc., Palo Alto CA - *Sapphire Ventures*

SAP Vancouver, Vancouver BC - *Customer Center*

SAP America, Inc., Dublin CA - *Corporate Training Academy*

SAP America, Atlanta GA - *Office Renovation*

SAP Canada, Calgary AB - *New Office Fit-out*

SAP DC, Washington DC - *Office Renovations*

SAP America, Newport Beach CA - *"Blue Bottle" and HanaHaus*

SAP Canada, Vancouver BC - *Office Upgrades*

SAP Waterloo, Waterloo ON - *Office Renovations*

SAP America, Newtown Square PA - *Executive Briefing Center*

Schimenti Construction Company, New York NY - *Office Relocation*

TD Ameritrade, Fort Worth TX - *Call Center, Building 4600*

TD Ameritrade, San Diego CA - *TD Ameritrade Building Renovation*

Confidential Client, Baltimore MD - *Corporate Campus Renovation*

The Davis Company, Pittsburgh PA - *Union Trust Building*

US Airways, Coraopolis PA - *Training Facility*



DISCOVERY

INNOVATION

IMPACT

THE SEXTANT GROUP

RELEVANT EXPERIENCE :: WEST VIRGINIA PROJECTS

Admix Broadcast Service, Charleston WV - Recording Studio

Allegheny Power Systems, Inc., Fairmont WV - Customer Service Center

Beckley Education Center, Beckley WV - Regional Consortium Facility

Christ Temple Church, Huntington WV - Sanctuary Renovation

Department of Veterans Affairs Medical Center, Clarksburg WV - Media Center

Glenville State College, Glenville WV - Mollohan Campus Community Center

Hazleton Federal Correctional Institute, Hazleton WV - Federal Prison Complex

National Energy Technology Laboratory, Morgantown WV - Video Conferencing Evaluation

Ohio County Development Authority, Wheeling WV - Highlands Assembly Hall

Shepherd University, Robert C. Byrd Center for Legislative Studies, Shepherdstown WV - Auditorium Renovation

Shepherd University, Shepherdstown WV - Byrd Hall Academic Nursing Building

Spilman Thomas & Battle PLLC, Charleston WV - Executive Conference Room

West Liberty University, West Liberty WV - Highlands Center Educational Complex

West Liberty University, West Liberty WV - Student Housing

West Liberty University, West Liberty WV - Technology Master Plan

West Liberty University, Wheeling WV - Media Arts Center

West Virginia State Capitol Building, Charleston WV - Historic Renovation

West Virginia University Potomac State College, Keyser WV - Mary F. Shipper Library Renovation and Expansion



West Virginia University, College of Business & Economics, Morgantown WV - Mylan Distance Learning Center

West Virginia University, Morgantown WV - Animal Facility Annex

West Virginia University, Morgantown WV - Baseball Complex

West Virginia University, Morgantown WV - Brooks Hall

West Virginia University, Morgantown WV - College of Law

West Virginia University, Morgantown WV - Engineering Science Building - East Wing

West Virginia University, Morgantown WV - Life Sciences Building

West Virginia University, Morgantown WV - Oglebay Hall

West Virginia University, Morgantown WV - School of Journalism Media Innovation Lab

West Virginia University, Morgantown WV - White Hall Lecture Hall

West Virginia University, Morgantown, WV - Agricultural Sciences Lecture Hall

West Virginia Wesleyan College, Buckhannon WV - Science Building

Wheeling Jesuit University, Wheeling WV - NASA Classroom of the Future

WPBY-TV - West Virginia Public Broadcasting Authority, Charleston WV - Broadcast Facility



DISCOVERY

INNOVATION

IMPACT

CENTERS FOR DISEASE CONTROL

THE SEXTANT GROUP :: BUILDING 107, ATLANTA GA



Penderings courtesy *The Beck Group*

SCOPE OF WORK

Planning/Design: Audiovisual, Lighting

DESCRIPTION

The Centers for Disease Control and Prevention owns a new, technology-rich building consisting of advanced lighting design and easy-to-use audiovisual systems. Spaces in the building include a large, divisible conference room, core small conference room and secondary small conference room, core large conference room, and a "Digital Signage" system. The state-of-the-art technology utilized in these rooms promote effective collaboration and communication.

The new facility's lighting design follows a task-ambient strategy. In order to use less energy, overhead lighting is only partially utilized. Some light focuses closely on work surfaces, which is the "task" component of this strategy. Ambient lighting incorporates indirect fluorescents, and task lighting utilizes direct fluorescents along with an LED system. Equipment provides effective capture of projected and displayed audiovisual images, video capture, and presentation personnel and hard copy displays.

Lighting in each room enables cameras to accurately capture images that are true to the environment. Field adjustable luminaires (complete lighting fixtures) illuminate individuals' faces avoiding glare. This allows for accurate discernment of expressions, and instead of confronting the screens, the luminaires turn toward the individuals. Especially in a video teleconferencing session, this direction does not conflict with brightness or glare.

In the waiting area, lighting design focuses on reducing energy consumption while using less expensive equipment. It also maintains the building's aesthetic design. Specifically, the waiting lobby features accent light LED lamps. Interior and exterior lighting is intended to provide an inviting atmosphere and enhance the building's architectural features.

Along with the ability to divide into three smaller meeting rooms, the Divisible Conference Center contains advanced audiovisual technology that supports digital files, high-resolution images, opaque printed materials, and 3-dimensional objects.

- ✦ For display purposes, a ceiling-mounted, motorized projection screen is provided as well as a ceiling-mounted, fixed projector and a widescreen format flat panel display.
- ✦ Two videoconference/capture cameras and a camera for monitoring the room allow for capture and collaboration.
- ✦ Program audio is enabled through ceiling speakers. In addition, wireless microphones exist for the presenter and the audience members. A total of 20 microphones are shared between the three spaces.

Seating eight people, the Core Small Conference Room supports small meetings and video conferencing sessions. It contains dual, wall-mounted widescreen, flat panel displays with loudspeakers. The Core Large Conference Room features a ceiling-mounted projection system, ceiling speakers, and microphones situated on the tops of tables.



DISCOVERY

INNOVATION

IMPACT

CITY OF DETROIT

THE SEXTANT GROUP :: PUBLIC SAFETY HEADQUARTERS, DETROIT MI



SCOPE OF WORK

Planning/Design: Audiovisual, IT/Telecom, Security, Acoustics

DESCRIPTION

Once the nation's tenth largest city, Detroit has sustained a more than 60 percent drop from its peak population of over 1.8 million citizens, leaving several of its buildings abandoned and in disrepair.

As part of the city's renaissance movement to redefine its image as Motor City, Detroit purchased the 400,000 SF former MGM Grand temporary casino and implemented a \$60 million renovation. The space now serves as the city's Public Safety Headquarters.

The seven-story building is connected to an eight-level parking garage and now houses several important departments. The facility includes Detroit's Information Technology Systems Department, Office of Homeland Security and Emergency Management, the Detroit Building Authority, the Michigan State Police Detroit Forensic Science Laboratory, and detective offices from several police units.

This reorganization of city operations resulted in efficiency improvements predicted to save as much as \$3 million per year and boost the morale of first responders.

One of the most unique spaces in the building is the Media Room. Working with local news stations, designers created the Media Room control booth to include broadcast feeds to the media parking lot. This feature allows news vans could hook up directly instead of running cables down the building's hallways for press conferences.

The building also houses 21 interview rooms equipped with hidden video and microphones that are automatically turned on with each room's light switch. City staff benefit from technology-enhanced conference rooms, training rooms, and open office collaboration spaces that support teamwork across departments. Access control units and security cameras are located throughout the space, and a guard station is situated at the main drive entrance to the building for additional safety.

Future expansion plans include a separate section of the building becoming a 911/EOC center with over a dozen workstations.



DISCOVERY

INNOVATION

IMPACT

WEST VIRGINIA STATE CAPITOL

THE SEXTANT GROUP :: CAPITOL BUILDING 3, CHARLESTON WV



Capitol Building 3 receives a complete systemic overhaul bringing it technologically into the 21st Century while preserving an enduring heritage

SCOPE OF WORK

Planning/Design: Audiovisual, Security

DESCRIPTION

The State of West Virginia's imposing 10-level Capitol Building 3 was first placed in service in 1953. The State looked to The Sextant Group to assist in efforts to restore the 60-year-old, 235,000 SF facility to its former glory while providing a complete technology overhaul and enhancement to bring functionality into the 21st century.

Housing the state auditor's office, plus departments of treasury and commerce, each department brought varying and specific needs that needed to be incorporated into the design.

Included in the assignment was the addition of public conference center. Especially challenging from a security/access perspective was to appropriately incorporate this publically-accessible full-featured conference center into a state office building requiring a high degree of security. Building security systems include monitoring stations, surveillance system, and card access.

Spaces and facilities include 120-seat flexible event hall, multiple large meeting rooms ranging in size from 80 to 30, plus additional 20- and 12-seat meeting rooms. Flexible collaborative spaces are also located strategically all through the building. Audiovisual systems include presentation, training, conferencing, collaboration, plus digital signage throughout.

In addition, designs include a videoconference suite and two high-level command centers featuring telepresence capabilities. In addition, each department also receives a dedicated executive boardroom with teleconferencing capabilities.



DISCOVERY

INNOVATION

IMPACT

STATE OF TENNESSEE

THE SEXTANT GROUP :: STATE CAPITOL COMPLEX, NASHVILLE TN



SCOPE OF WORK

Planning/Design: Security

DESCRIPTION

Seeking modernization for its celebrated capitol, the State of Tennessee completed a comprehensive overhaul of all security systems while preserving the historical significance of the complex. Vandalism had prompted a new master plan, with over one million dollars in upgrades applied across the campus of the urban Nashville landmark.

Tasked with protecting the historic venue, systems were designed to survey the structures and grounds of the complex. These include monitoring the House and Senate chambers, original state Supreme Court, and the Governor's office. Public safety was also of concern, including tourists participating in guided tours of the capitol, meeting with representatives in the legislative plaza, and walking the scenic property taking in timeless pieces of U.S. and Civil War history.

Crime Prevention Through Environmental Design (CPTED) concepts maximize potential viewpoints from adjacent buildings, establishing well-guarded areas while leaving the land itself virtually undisturbed. These strategies implemented across the remainder of the property safeguard monuments to the Tennessee-born U.S. Presidents Andrew Jackson, Andrew Johnston and the tomb of President James Polk.

Discretely-positioned cameras at various locations are programmed and controlled to capture the capitol's contents without interrupting official government business. Infrared illuminators and high-sensitivity day/night cameras support live monitoring and recording needs. Access control systems are designed and programmed to work closely with camera systems, alerting security staff to suspicious activity and providing high-resolution video footage of anyone exiting or entering the facilities or grounds.

Security staff utilizes image analysis software, giving Tennessee Law Enforcement capability to obtain facial and license plate recognition. The members of the Legislature access their offices through an optical turnstile "fast lane," while the general public is carefully screened using magnetometers and scanned by the computer managed system. This "inner perimeter" of restricted space ensures separation between representatives, staff, and visitors.

New security systems allow for optimal safety of historic contents and fulfill the ultimate goal of a safe working environment and tourist venue. The State Capitol Complex acts as the "People's House," inviting Tennesseans to actively participate in their government. This comprehensive upgrade of security systems helps deter would-be assailants, while providing safe access to the public.



DISCOVERY

INNOVATION

IMPACT



4

INTEGRATING SUSTAINABILITY

PWWG and our team members for the WV Building Four project have developed many projects under sustainable building programs including:

- LEED
- WELL
- Passive House
- Certification for Innovative Strategies for Universal Design (iSUD)

A sample of projects is included on the following pages.

PWWG's Philosophy and Approach to Sustainability in Planning and Design

Perfido Weiskopf Wagstaff + Goettel

Sustainable approaches to design are inherent in all the work we do. Sixty-five percent of PWWG's registered staff are LEED accredited professionals. We have developed many projects under sustainable building programs including:

- LEED
- WELL
- The 2030 District Challenge
- Passive House
- Certification for Innovative Strategies for Universal Design (isUD)

PWWG uses the LEED checklist as a framework for discussions with clients about sustainable design possibilities and project goals, even when formal certification is not sought. Throughout the design process, we return to the checklist to advance goals for sustainability, and sustainability is a key element in our integrated design process with consulting engineers.

PWWG's LEED projects include new construction, additions, and adaptive reuse: A sample includes:

Union Trust Mixed-use Office Building Renovation and Reuse, Pittsburgh, PA — \$7.2M adaptive reuse of a Historic Register building from 1917 for offices and high-tech labs. The building has several certifications: LEED BD+C: Core and Shell v3 - LEED 2009; LEED O+M: Existing Buildings v2 - LEED 2.0

Operating Engineers Offices and Training Facility, Pittsburgh, PA — New \$7.5M metal and glass building for the Operating Engineers of Western PA is LEED Certified.

Ridge at Robinson, Pittsburgh, PA — New 447,700 sf multi-family housing with five buildings, clubhouse, business and fitness centers, and a pool. The entire project is certified as LEED BD+C: Homes v3 - LEED 2008

Oglebay Hall and Ming Hsieh Hall, WVU Morgantown, WV — \$20M LEED Certified complete gut, restoration and renovation, (Oglebay Hall), and LEED Certified addition (Ming Hsieh Hall) for labs, classrooms, auditoriums, offices, and social spaces.

Carr Hall Renovation, Allegheny College, Meadville, PA — Renovation of a 1960s campus building achieved LEED Gold for Commercial Interiors. Program includes labs, classrooms, offices, and social spaces.

MuseumLab, Children's Museum of Pittsburgh, Pittsburgh, PA — Transformation of historic library for STEM learning. Construction employed high performance, energy efficient systems to pursue the following sustainability goals: LEED v4 Gold, WELL Silver, and the 2020 Progress Goals of the Pittsburgh 2030 District, with a 60% reduction in energy usage. MuseumLab is the first building in the United States to also achieve Certification for Innovative Strategies for Universal Design (isUD), incorporating UD values and concepts for designing safe, healthy, supportive, and welcoming environments for all.

Warner Hall Administrative Office Building Renovation, Carnegie Mellon University, Pittsburgh, PA — Renovation to existing campus modernist building. The project is slated for LEED Silver certification.

New Fifth and Clyde Dorm, Carnegie Mellon University, Pittsburgh, PA — Design of a new 120,000 sf residence hall, and a master plan and design principles for four other campus neighborhood structures. The project, under construction, is slated for LEED v4 BD+C Gold Certification.

Allegheny County Courthouse Facilities Plan Pittsburgh, Pittsburgh, PA — Phased projects to preserve, restore, and renovate H.H. Richardson's landmark building incorporates measures to achieve the City of Pittsburgh goals for the 2030 District Challenge.

Pioneer Apartments and Mixed-Use Office, New Kensington, PA — The first mixed-use office/affordable housing project in Western PA to meet rigorous Passive House standards. The project is also slated for Silver Certification under LEED V4, Multi-Family Midrise.



Union Trust Building, Pittsburgh PA.



Warner Hall Admin. Building Renovation, Carnegie Mellon, Pittsburgh, PA



New Fifth and Clyde Dormitory, Carnegie Mellon University (in construction)

LEED RATED DESIGN

Working together with our clients, Tower Engineering takes great pride in implementing environmentally conscious solutions to building issues. To sustain our environment, we design building systems that use material, energy and water resources efficiently, minimize site impacts and address health issues relating to the indoor environment. Over the last decade, various groups have worked to develop strategies to promote and facilitate the design of sustainable, high performance buildings. One such organization, The **U.S. Green Building Council**, has created a nationally recognized certification process for evaluating sustainable and high performance buildings, a program called “**Leadership in Energy and Environmental Design**,” commonly known by its acronym **LEED**. In addition to being a member of the U.S. Green Building Council (USGBC), Tower Engineering’s staff includes LEED accredited professionals.

The LEED certification process rates the levels of sustainability achieved in a building: LEED Certified, LEED Silver, LEED Gold, and the highest rating, LEED platinum. Awards are based upon achieving “sustainability points” in the areas of Site, Water, Energy & Atmosphere, Materials and Resources, Indoor Environmental Quality, and Innovation & Design Process.

Sustainable Design features commonly include

- Conceptual Energy Model
- HVAC
- Geothermal
- Ice Storage
- Fan-Coil Units
- Rooftop Units
- Variable Refrigerant Flow
- Condensing Boilers
- Daylight Harvesting
- Insulated Concrete Forms
- Energy Recovery
- Carbon Dioxide Sensors
- DDC Controls
- LED Lighting
- High Efficiency Lighting
- Direct/Indirect Pendant Lighting
- Waterless Urinals
- Occupancy Sensors
- Rainwater Collection



Sustainable Design

LEEDing the Way

With more than **100 LEED APs** on staff, sustainable design weaves through all Langan services. Our diverse portfolio of intelligent site planning, design, and engineering coupled with our Brownfield and site remediation expertise places us at the forefront of the sustainable design movement.

Langan has been an instrumental player on dozens of Leadership in Energy and Environmental Design (LEED) and sustainable design projects. Our expertise allows us to make significant contributions in developing sustainable sites with an emphasis on stormwater management, low impact landscapes, brownfield redevelopment, materials recycling, energy conservation, and renewable energy design.

Langan Sustainable Design Services:

- LEED Site Feasibility Analysis
- Air Quality Assessments
- Asbestos Assessment and Abatement
- Ecological Wastewater Treatment Design
- Low Impact Stormwater Design / Master Planning
- Brownfield Redevelopment
- High Efficiency Site Lighting and Irrigation Design
- Green Roof Design
- Streambank Restoration and Bioengineering Design
- Baseline Ecological Evaluations
- Wildlife and Habitat Evaluations
- Urban Design and Regeneration Planning
- Geothermal Feasibility Studies and System Design Support



SELECT LEED PROJECTS

THE SEXTANT GROUP

LEED Platinum

Arizona State University BioDesign Institute, Tempe AZ

Dartmouth College Life Sciences Building, Hanover NH

Eckerd College Center for Molecular and Life Sciences, St. Petersburg FL

Georgia Institute of Technology Clough Undergrad Learning Commons, Atlanta GA

TD Ameritrade Corporate Headquarters, Omaha NE

LEED Gold

American University, WAMU-FM, National Public Radio Station Facilities, Washington DC

Arizona State University ISTB IV, Tempe AZ

Bowie State University New Student Union, Bowie MD

Carnegie Mellon University, Pittsburgh Supercomputing Center, Pittsburgh PA

Carnegie Mellon University Collaborative Innovation Center, Pittsburgh PA

Centers for Disease Control Building 107, Chamblee GA

City of Detroit Public Safety Headquarters, Detroit MI

City University of New York School of Law, Long Island NY

Deer Lakes High School Auditorium, Russellton PA

Georgia Institute of Technology Hinman Research Building, Atlanta GA

Howard Community College Health Sciences Building, Columbia MD

Iowa State University Troxell Hall, Ames IA

Kansas State University Justin Hall, Manhattan KS

Rice University McMurtry and Duncan Residential Colleges, Houston TX

Rice University Bioscience Research Collaborative, Houston TX

San Xavier Administrative Compound, Tucson AZ

Temple University Science Education and Research Center, Philadelphia PA

Thomas Jefferson School of Law, San Diego CA

Tidewater Community College Student Center, Chesapeake VA

University of Albany, SUNY, New Business School, Albany NY

University of Florida J. Wayne Reitz Union, Gainesville FL

University of Idaho Integrated Research and Innovation Center, Moscow ID

University of Toledo School of Education Renovation, Toledo OH

University of Vermont Student Union, Burlington VT

Western Carolina Health & Human Sciences Building, Cullowhee NC

Wake Technical Community College Building E, Raleigh NC

LEED Silver

Bear Run Interpretive Center Fallingwater, Somerset PA

Cardinal Wuerl North Catholic High School, Cranberry Township PA

City of Dearborn Intermodal Passenger Rail Facility, Dearborn MI

College of the Desert Barker Nursing and Health Sciences Complex, Palm Desert CA

College of the Desert, Public Safety Academy, Palm Desert CA

County of Henrico Varina Area Library, Henrico VA

County of Henrico Libbie Mill Library, Henrico VA

Duquesne University New Recreation Center, Pittsburgh PA

Durham County Human Services Complex New Government Office Complex, Durham NC

George Mason University Long and Kimmy Nguyen Engineering Building, Fairfax VA

Germana Community College Academic Services Building, Fredericksburg VA

Lorain County Community Entrepreneurship Innovation Center, Elyria OH

Lorain County Community College University Partnership Ridge Campus, North Ridgeville OH

Miami University Armstrong Student Center, Oxford OH

North Carolina State University James B. Hunt Library, Raleigh NC

Phoenix Biomedical Campus Health Sciences Education Building (HSEB), Phoenix AZ

Pittsburgh Children's Museum, Pittsburgh PA

PNC Bank FirstSide Center Corporate Headquarters, Pittsburgh PA

United States Army Logistics University Education & Simulation Center, Fort Lee VA

University of Mary Washington Information & Technology Convergence Center, Fredericksburg VA

University of North Carolina Greensboro Police Department, Greensboro NC

University of Pittsburgh Benedum Hall, Pittsburgh PA

University of Richmond Queally Admissions Center, Richmond VA

University of Virginia Education Research Center, Charlottesville VA

Wake Technical Community College Building F, Raleigh NC

WYEP-FM Performance Studios, Pittsburgh PA

LEED Certified

Northern Virginia Community College Loudon Higher Education Center, Sterling VA

Three PNC Plaza Multi-use High-rise Complex, Pittsburgh PA

University of Mary Washington Dahlgren Graduate Research Center, Fredericksburg VA



DISCOVERY

INNOVATION

IMPACT

5

REFERENCES FOR SIMILAR PROJECTS

References for Similar Projects

PERFIDO
WEISKOPF
WAGSTAFF +
GOETTEL

PERFIDO
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- 1. West Virginia Capitol Building 3 Renovation**
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- 2. CSO Office Modernization (Cincinnati Music Hall Renovation)**
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- 3. MuseumLab Modernization**
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- 1. Phoenix City Hall - Modernization of Thirteen (13) Elevators**
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- 3. D.L. Norton Construction – Multiple City Buildings**
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