



The following documentation is an electronically-submitted vendor response to an advertised solicitation from the *West Virginia Purchasing Bulletin* within the Vendor Self-Service portal at wvOASIS.gov. As part of the State of West Virginia's procurement process, and to maintain the transparency of the bid-opening process, this documentation submitted online is publicly posted by the West Virginia Purchasing Division at WVPurchasing.gov with any other vendor responses to this solicitation submitted to the Purchasing Division in hard copy format.

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List View

- General Information**
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- Document Information
- Clarification Request

Procurement Folder: 1311383

Procurement Type: Central Contract - Fixed Amt

Vendor ID: 000000160802

Legal Name: PERFIDO WEISKOPF WAGSTAFF + GOETTEL LLC

Alias/DBA:

Total Bid: \$0.00

Response Date: 02/22/2024

Response Time: 9:00

Responded By User ID: PWWG

First Name: Sandi

Last Name: Eaton

Email: seaton@pwwgarch.com

Phone: 412-391-2884

SO Doc Code: CEOI

SO Dept: 0211

SO Doc ID: GSD2400000003

Published Date: 2/14/24

Close Date: 2/22/24

Close Time: 13:30

Status: Closed

Solicitation Description: EOI: Building 35 (Diamond) Renovations Project

Total of Header Attachments: 1

Total of All Attachments: 1



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

**State of West Virginia
 Solicitation Response**

Proc Folder: 1311383
Solicitation Description: EO: Building 35 (Diamond) Renovations Project
Proc Type: Central Contract - Fixed Amt

Solicitation Closes	Solicitation Response	Version
2024-02-22 13:30	SR 0211 ESR02222400000004261	1

VENDOR
 000000160802
 PERFIDO WEISKOPF WAGSTAFF + GOETTEL LLC

Solicitation Number: CEOI 0211 GSD2400000003
Total Bid: 0
Response Date: 2024-02-22
Response Time: 09:00:50
Comments:

FOR INFORMATION CONTACT THE BUYER
 Melissa Pettrey
 (304) 558-0094
 melissa.k.pettrey@wv.gov

Vendor Signature X **FEIN#** **DATE**

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

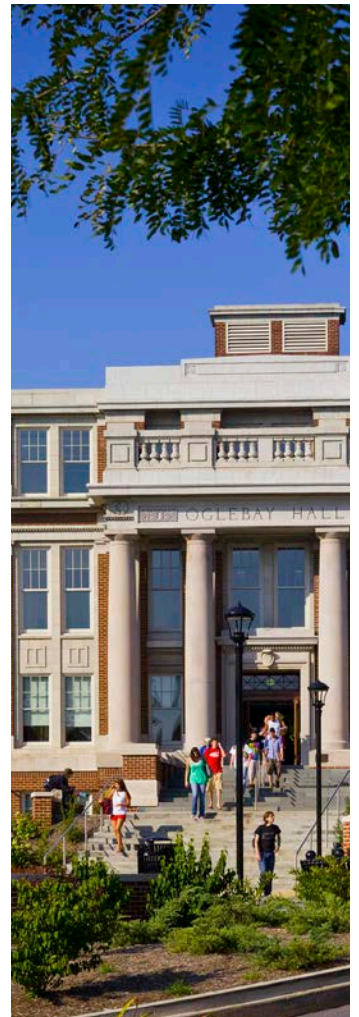
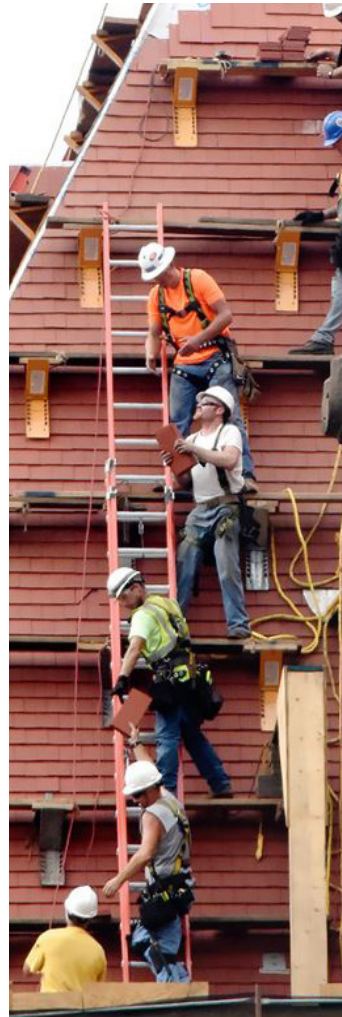
Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
1	EOI: Building 35 (Diamond) Renovations Project				0.00

Comm Code	Manufacturer	Specification	Model #
81101508			

Commodity Line Comments:

Extended Description:

EOI: Building 35 (Diamond) Renovations Project



PROPOSAL FOR PROFESSIONAL A/E DESIGN SERVICES FOR
CEOI GSD2400000003
BUILDING 35 & BUILDING 31
RENOVATIONS PROJECT

Prepared for the
STATE OF WEST VIRGINIA GENERAL SERVICES DIVISION
 FEBRUARY 22, 2024

pwwg point of contact
 Anthony L. Pitassi, AIA, NCARB, LEED AP
 Managing Principal
 412.391.2884 ext 225
 apitassi@pwwgarch.com

PERFIDO
 WEISKOPF
 WAGSTAFF +
 GOETTEL

ADDENDUM ACKNOWLEDGEMENT FORM

SOLICITATION NO.:

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.

PWWG Architects

Company



Authorized Signature

2/22/2024

Date

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



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| cover +
letter

PERFIDO
WEISKOPF
WAGSTAFF +
GOETTEL

February 22, 2024

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

RE: CEOI GSD 240000003 Building 35 (Diamond) & Building 31 (Parking Garage) Renovations Project

Dear Ms. Pettrey and Members of the Selection Committee,

We have carefully studied the RFP and documents provided and we are confident that the enclosed materials demonstrate that our team is well qualified to provide the best overall value to the State of West Virginia. We are excited about the opportunity to continue working with your institution alongside our current and past work at the Capitol Complex campus at Building 4 and Building 3 respectively. We also want to underscore the specific qualifications of our team and the unique aspects that PWWG will bring to this project:

- Over 50% of PWWG's work is focused on re-use, re-purposing, and renovation of historic era buildings including preservation projects across a variety of building typologies and scale in urban environments.
- PWWG's internal team for this project is comprised of our most senior and skilled staff with experience focused on historic projects.
- We have composed a team of consultants who are expertly skilled in building envelope analysis, preservation, renovation, and upgrades to historic buildings and parking garages.
- We have experience designing for continued occupancy during construction and have recently completed projects at universities where this was successfully achieved.

We appreciate your consideration of our credentials and look forward to the opportunity to discuss your project in detail.

We encourage you to reach out to our references to discuss how we have provided a high level of service to them in the past and we welcome the opportunity for an interview to elaborate on our capabilities and discuss with you our ideas for the project.

Sincerely,



Anthony L. Pitassi, AIA, NCARB, LEED AP
Managing Principal

| project +
team

PERFIDO
WEISKOPF
WAGSTAFF +
GOETTEL



PWWG ARCHITECTS stewards of the community +

NAME OF FIRM: Perfido Weiskopf Wagstaff + Goettel, LLC (PWWG Architects)

TYPE OF BUSINESS OWNERSHIP: LLC

CERTIFIED SMALL BUSINESS ENTITY IN: PA

HISTORY AND DESCRIPTION OF THE FIRM

Since 1975, PWWG has served clients in the Ohio River Valley and beyond from our main office in downtown Pittsburgh.

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.

AREAS OF SPECIALIZATION

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

MAIN OFFICE

PWWG Pittsburgh
408 Boulevard of the Allies, Pittsburgh, PA 15219

BRANCH OFFICE

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

SCAN TO
VISIT OUR
WEBSITE



1975

Year Established

20

Total # of Employees

3

Principals

12

Registered Architects

7

LEED Accredited Professionals

2

WELL Accredited Professionals

3

Administrative & Support

PERFIDO
WEISKOPF
WAGSTAFF +
GOETTEL



PERFIDO
WEISKOPF
WAGSTAFF +
GOETTEL

work in west virginia +

- Hardway Hall Systems Upgrades, Fairmont State University
- Turley Center Renovation, Fairmont State University
- Campbell Hall Renovation, West Liberty University
- Campbell Hall Shell Space Fit-out for Labs, Classrooms and Offices - Phases 1 & 2, West Liberty University
- Shaw Hall Renovation, West Liberty University
- Main Hall, West Liberty University
- Science Building Study, West Liberty University
- West Virginia State Capitol Rotunda
- West Virginia Building 3 Renovation
- West Virginia Building 4 Renovation
- Elevator Upgrades and Modernizations, WV Capitol Complex
- Downtown Loop Campus Expansion, West Virginia University
- Oglebay and Ming Hsieh Halls, West Virginia University
- Brooke Tower, West Virginia University
- Utilities and Infrastructure Improvements & Quad Design, West Virginia University Evansdale
- Old Main, West Virginia University Institute of Technology
- Applied Technology Center, WVU at Parkersburg
- Child Development Center, WVU at Parkersburg
- STEM Building Study, WVU Potomac State
- Nursing Program Expansion Study, WVU Potomac State
- National Center for Youth Science Education Masterplan
- Wheeling Heights II Housing, Wheeling
- Holiday Inn Hotel & Suites, Beckley

FIRM OVERVIEW

ZDS Design/Consulting Services is a three-generation family owned MEP/Commissioning Engineering Firm located near Charleston, West Virginia. ZDS provides comprehensive professional services for Master Planning/Feasibility Studies, HVAC, Plumbing, Electrical, Indoor Environmental Quality, Energy Engineering, Forensic Engineering and Commissioning. ZDS has extensive proven high performance building design experience for commercial, governmental, healthcare and educational facilities in 25 states across the country, the State of West Virginia, local government and Federal agencies. Specializing in renovation projects with **proven results of from 30% to over 60% reduction in energy/operating costs** earning Energy Star Certification and EPA Act qualified on government renovation projects!

- ◆ Mechanical
- ◆ Electrical
- ◆ Plumbing
- ◆ Forensic
- ◆ Energy
- ◆ Commissioning
- ◆ Indoor Environmental Quality (IAQ/IEQ)
- ◆ High Performance Sustainable Buildings
- ◆ 3D Scan-to BIM

The ZDS team is made up of **seasoned professionals** who have dedicated their careers to engineering design excellence and quality. We pride ourselves in having the most up-to-date state-of-the-art technology to provide our clients the very best possible services. We offer **comprehensive practical solutions** to our clients with proven World Class results.



COMPANY LEGAL NAME

ZDS Limited Liability Company
dba ZDS Design/Consulting Services

OFFICE LOCATION

135 Corporate Center Drive, Suite 532
Scott Depot, WV 25560

FOUNDERS

Todd A. Zachwieja, P.E., C.E.O.

Lori L. Zachwieja, C.P.A., C.F.O.

Daniel H. Kim, Ph.D.



“Family Owned & Operated Engineering Firm
providing Professional Design Services for over 29+ years”



STRUCTURAL FIRM OVERVIEW

Atlantic Engineering Services (AES) provides structural engineering consulting services throughout the United States. Established in 1986, AES is widely respected for its expertise and services, and is located in Pennsylvania, West Virginia, and Florida. Our clients benefit from proactive, skilled engineers engaging other disciplines and sharing regional experience.

Synergy, creativity, and timeliness are the principles that drive our firm. Continuous interaction between designers and field observers ensures that your design's intent can be accurately translated and properly executed, and specialized BIM technology enriches collaboration between A/E/C firms, fabrication facilities, and other consultants for any type of project, regardless of its complexity or difficulty.

For our clientele, every project has required more than efficient structural support. Depending on the client and their surrounding community, we have helped facilities remain operational during construction, expedited steel design and fabrication services for fast-tracked projects, and implemented droning services to improve visual access.

Most importantly, our professionals listen. For every project our engineers digest everything that is most important to the owners, the goals of the design team, and input from other vital sources to develop structural options that fit your design's framework. We become invested in your goals, crafting ours around the visions and needs provided to us.

Professionals at our firm enjoy what they do and so they do it well, dedicated to producing lasting structures where people can live, work, play, learn, heal, worship, and more. At AES, we take great pride in **bringing architectural visions to life.**

650 aggregate years of structural design experience **\$17** billion in total construction costs **30,000+** total projects

this many clients have returned for this many projects 100s / 10 25 / 100 8 / 200 1 / 500

INDUSTRIES assisted living civic clubhouse commercial federal + municipal film industry healthcare higher education historic preservation hospitality industrial + energy k-12 education marina multi-family museum + library parking + transportation residential retail

SERVICES adaptive reuse constructability reviews BIM cold-formed steel concrete delegated design design-build elements & connections facade & cornice forensic engineering historic restoration military facility design specialized medical equipment steel designs surveys + inspections sustainability tilt-up unmanned aerial services wood framing + design

TESTIMONIAL
Michael J. Cain, Project Executive @ MASCARO CONSTRUCTION COMPANY

"AES performed all of the structural engineering and structural detailing for the project and performed these services in an exemplary fashion. Mascaro has worked with AES on many signature projects since the early 1990's in every instance... AES proved to be extremely professional, cooperative and a true pleasure to work with. I certainly would not hesitate to use AES's professional design services on any project and I look forward to working with them again soon."

bringing architectural visions to life // aespc.com

412.321.4901; mjcain@mascaroconstruction.com



Building Envelope Consultants and Scientists



Engineered Solutions for Building Envelopes®

Building Envelope Consultants and Scientists, the name says it all. We are experienced in every aspect of building enclosures and design. Our team consists of professional engineers, building envelope consultants, and scientists, with specialties in structural and restoration engineering, building envelope, and general construction.

BECS doesn't simply remediate the symptoms of your building – we dive deep to understand the root cause and our clients' goals to engineer long-lasting solutions for your building.

Building Envelope Solutions

- Condition Assessment
- Repair Design
- Historic Preservation
- Leak Investigation
- Adaptive Reuse and Repurposing
- Project Treatment Costs Studies
- Façade and Balcony Inspections
- New Construction Envelope
- Window and Roof Replacement / Renewal
- Above & Below-Grade Waterproofing
- Garage Condition Assessment
- Bidding Services

Consulting Engineers

- Forensic Evaluation
- Structural Stabilization and Strengthening
- Rooftop Anchor Inspection and Design
- Non-Destructive Evaluation Techniques
- Peer Design Review
- Existing Structures Engineering
- Quality Assurance Observations
- Delegated Design Services
- Construction Documents, Plans and Specifications
- Concrete, Masonry, Steel, and Wood
- Post-Tensioning Evaluations

Scientists Lab & Field Testing

- Building Enclosure Commissioning
- ASTM and AAMA Water Intrusion Testing
- Building Science Studies for Thermal, Moisture and Air Infiltration
- Acoustic Performance Design
- On-site Performance Mockup Testing
- Product Testing and Evaluations
- Air Barrier Inspections
- Whole Building Air Tightness
- Life Safety / Structural Load Testing
- Electronic Leak Detection of Membranes

BECS specializes in the development of structural and architectural maintenance, repair, and stabilization programs for new, existing, and historic structures. Our specific core of engineering expertise is geared toward serving:

- Office and Commercial Properties
- Higher Education Campuses
- Healthcare Facilities
- New Construction
- Multifamily Residential
- Historic Structures

Façade Access Support Technicians

No Access? No Problem!

Our Façade Access Support Technicians (FAST) Team has the training, talent, and equipment to quickly and safely access hard-to-reach areas without the excessive added cost and inconvenience of swing stages, scaffolding or high-reaches.



Vertical Transportation – Engineering & Consulting

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.

The firm made up of professionals drawn from throughout the elevator industry with an average of 40 years in experience. Our people have a broad range of expertise in all phases of elevator consulting including:

- The design and installation oversight of vertical transportation systems of **new construction** projects.
- The evaluation, planning and installation oversight of the **modernization** vertical transportation systems in existing buildings.
- The auditing and evaluation of elevator contractor performance of **maintenance and repairs** of elevators and escalators in existing buildings.
- The evaluation and life-cycle assessment of existing equipment for **due diligence** in real estate transactions.
- Third party **witnessing of code testing** of vertical transportation systems.

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





MORGAN
PROPERTY &
CONSTRUCTION
CONSULTANTS

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

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.





pwwg project leadership team



Anthony L. Pitassi,
AIA, NCARB, LEED AP
Managing Principal

Role:
Principal-in-Charge



Joseph Filar,
RA, LEED AP
Senior Associate

Role:
Project Manager



Joseph Roy,
AIA
Associate

Role:
Project Architect



Jan Irvin,
AIA, LEED AP
Senior Associate

Role:
Specs / QA QC

design consultants

MEP ZDS

Todd Zachwieja, PE, CEM, LEED AP
Principal-in-Charge

Ted Zachwieja III, PE, CEM
CTO, MEP Engineer/Commissioning

David Cotton, PE, LEED AP BD+C
MEP Project Engineer

Mark Estep, PE
MEP Engineer

Paul O'Dell, PE
MEP Engineer

Jim Watters
Construction Administration

Vineel Busa, PE
MEP Engineer

Meher Meka, BSEE, EI
MEP Designer

ENVELOPE SPECIALIST BECS

Steve P. Bentz, PE
VP, Internal QA/QC

Michael Payne, PE, PMP
Sr. Project Manager

Traci Powell, PE
Structural Engineer

Nicholas Szakelyhidi
Building Envelope Consultant

ELEVATOR SPECIALIST SKA

Steve Kinnaman
Principal Consultant

STRUCTURAL Atlantic Engineering Services

Gil Taylor, PE
Principal Engineer

COST ESTIMATING Morgan PCC

Morgan Kronk
Principal Cost Estimator



anthony pitassi +
aia, ncarb, leed ap
MANAGING PRINCIPAL

Tony has been with PWWG for 20+ years, and is a leader in the firm's practices in hospitality, adaptive reuse and renewal, and historic preservation for commercial, cultural, and non-profit clients. Tony leads every project—from concept studies to new construction--by aligning practical solutions, sound project management, and exemplary design and detailing, with the values of stakeholders and clients. He is recognized for clear communication and uncommon skill facilitating creative dialogue between clients, consultants, architectural partners, and contractors, throughout design and construction. Tony has managed many projects to successful completion with LEED, Universal and Inclusive Design, WELL, and 2030 standards of sustainability, and contributed to establishing the groundbreaking isUD standard for museums. His projects as Principal-in-Charge have won awards from local and national chapters of the AIA and major design entities, and been featured in regional and international publications covering architecture, interiors, and hotel design.

JOINED PWWG
1998

EDUCATION
Bachelor of Architecture,
Kent State University, 1989

BA Architectural Studies,
University of Pittsburgh, 1986

REGISTRATION
Architect in PA, OH,
WV, KY & MO

PROFESSIONAL ASSOCIATIONS
American Institute of
Architects (AIA) Member

LEED Accredited Professional

Green Building
Council Institute

NCARB Certificate Holder

RELEVANT PROJECT EXPERIENCE

Allegheny County Courthouse Facilities Plan Phase I and II (Roof & Tower Restoration) Implementation,, Pittsburgh, PA—Plans and concepts for 15 projects through 2030 to rehab and modernize architect H.H. Richardson's masterpiece. PWWG was selected to implement first projects in the Facilities Plan—restoring major components of the exterior. Scope included: repointing granite roof of main tower and both courtyards; replace all clay roof tile with new clay tile; and replacing low slope roofs above ambulatories in the courtyard. *Principal-In-Charge*

Church of the Ascension Envelope Assessment and Restoration, Pittsburgh, PA— forensic evaluation of sandstone envelope of an iconic National Register church in an urban neighborhood; study helped secure foundation funding for PWWG to also coordinate phased cleaning, stabilizing, and repointing sanctuary, parish hall, and bell tower. *Principal-In-Charge*

Penn's Common Court, Reading, PA—Exterior envelope redesign and re-skinning for senior housing mid-rise apartment building; earned low income funding. 43,400 sf. *Project Manager*

21c Museum Hotel St. Louis, St. Louis, MO—Rehab and transformation of the 10-story historic YMCA building in downtown for an innovative hybrid art museum and 170-room boutique hotel with galleries, a signature restaurant, and event spaces; earned Historic Tax Credit funding. 163,500 sf. *Principal-In-Charge / Project Manager*

Old Economy Village, Multiple Historic Renovation Projects, Ambridge, PA—A wide variety of improvements and preservation for site features and 20 structures at a national historic site; envelope, accessibility and finish upgrades, and new public amenities. *Principal-In-Charge*

Henry W. Oliver Building Facade Rehabilitation and Embassy Suites Hotel Conversion, Pittsburgh, PA—Forensic analysis and rehab of stone exterior for the historic 25-story building, and adaptive reuse of 9 stories for an upscale hotel. 198,000 sf. *Project Manager*

21c Museum Hotel Cincinnati, Cincinnati, OH—Rehab and transformation of a historic downtown hotel for an innovative hybrid art museum and 156-room boutique hotel with galleries, a signature restaurant, meeting and event spaces; earned Historic Tax Credit funding. 159,000 sf. *Project Manager*

21c Museum Hotel Lexington, Lexington, KY—Rehab and transformation of a 15-story historic bank and department store in downtown for an innovative hybrid art museum and 88-room boutique hotel with galleries, a signature restaurant, and event spaces; earned Historic Tax Credit funding. 103,500 sf. *Project Manager*



joseph filar +
ra, lead ap
SENIOR ASSOCIATE

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.

RELEVANT PROJECT EXPERIENCE

West Virginia State Capitol Office Building Four Renovation, Charleston, WV—third project on the capitol campus renovates site, exterior, and interior of a 1950s office building; updates to layout, systems and finishes address life safety and accessibility, and preserve mid-century architectural character. 96,000 sf. *Project Manager*

WV State Capitol Complex Building 3 Restoration and Reuse, Charleston, WV—Comprehensive masonry envelope and tile roof restoration and interior redesign of a historic building for contemporary office space, with flexible layouts, updated systems and AV/IT, new amenities and FF&E. 165,000 sf. *Project Manager*

Allegheny County Courthouse Facilities Plan Phase I and II (Roof & Tower Restoration) Implementation, Pittsburgh, PA—Plans and concepts for 15 projects through 2030 to rehab and modernize architect H.H. Richardson’s masterpiece. PWWG was selected to implement first projects in the Facilities Plan—restoring major components of the exterior. Scope included: repointing granite roof of main tower and both courtyards; replace all clay roof tile with new clay tile; and replacing low slope roofs above ambulatories in the courtyard. *Project Manager*

Oglebay Hall Rehab & Transformation and Ming Hsieh Hall Addition, West Virginia University, Morgantown, WV—Salvage and transformation of a vacant historic classroom building for labs, classrooms and offices, and addition with tech intensive lecture halls; the ensemble supports interdisciplinary STEM learning; Oglebay masonry envelope and roof rehab, new pedestrian bridge, outdoor terrace, and rooftop parking at Ming Hsieh; both buildings are LEED Certified. Oglebay Hall Reuse— 50,000 sf; Ming Hsieh Hall Addition – 16,000 sf. *Project Architect*

Church of the Ascension Envelope Assessment and Restoration, Pittsburgh, PA— forensic evaluation of sandstone envelope of an iconic National Register church in an urban neighborhood; study helped secure foundation funding for PWWG to also coordinate phased cleaning, stabilizing, and repointing sanctuary, parish hall, and bell tower. *Project Manager*

Pennsylvania State Capitol Peristyle Envelope Restoration, Harrisburg, PA—Investigation, analysis, and design for waterproofing the deck surrounding the 52M ton granite peristyle and dome of the 1906 state capitol building on the National Register; pilot project confirmed proposed design improvements; building remained fully operational. *Project Manager*

Becht Hall Reuse for Student Success Center, Clarion University, Clarion, PA — Historic dorm reimagined as a “modern” historic building, consolidating services for 15 departments; flexible office, conference and classroom spaces for future needs; envelope restoration; PASSHE open-end project. 53,000 sf. *Project Architect*

Old Economy Village, Multiple Historic Renovation Projects, Ambridge, PA—A wide variety of improvements and preservation for site features and 20 structures at a national historic site; envelope, accessibility and finish upgrades, and new public amenities. *Project Manager*

JOINED PWWG
1999

EDUCATION
Bachelor of Architecture,
Pennsylvania State University,
1995

Sede di Roma Foreign Studies
Program, 1993

REGISTRATION
Architect in PA

**PROFESSIONAL
ASSOCIATIONS**
LEED Accredited Professional

National Historic Trust
Pittsburgh History &
Landmarks Foundation



joseph roy +
aia
ASSOCIATE

Since joining PWWG in 2021, Joe has demonstrated his natural ability to work on a range of tasks simultaneously, as a team member on projects for market rate housing, a private gallery and residence, and a mixed-use commercial addition. His prior experience in NYC and Boston spanned building renovations, new construction, and interiors, with responsibilities for design and detailing for large scale affordable housing, a high-end apartment, and historic rowhouses.

RELEVANT PROJECT EXPERIENCE

West Virginia State Capitol Office Building Four Renovation, Charleston, WV—PWWG's third project on the capitol campus renovates site, exterior, and interior of a 1950s office building; updates to layout, systems and finishes address life safety and accessibility, and preserve mid-century architectural character. 96,000 sf. *Team Member*

Allegheny Branch House Lofts Renewal & Reuse, Pittsburgh, PA—For a repeat client, conversion of a landmark four-story heavy timber and masonry industrial building for 36 unique apartments. Design incorporates distinctive existing architectural elements and resolves difficult parking and access on the dense urban site. 47,000 sf. *Project Manager*

William Pitt Union Porch Repairs, University of Pittsburgh, Pittsburgh, PA—Forensic and design services to mitigate water infiltration at the grand entry porch of a beaux-arts historic campus building, the hub for student activities. Scope removes elements added in the 1980s, redesigns structural slab and membrane, and improves life safety, lighting, and accessibility, setting the stage for future upgrades. *Project Manager*

Garden Theater Block Apartments, Pittsburgh, PA—New five-story building anchoring a prominent corner in a historic neighborhood; 50 market rate apartments with parking nearby, and first floor commercial space. Includes renovation of two historic townhouses into nine apartments. 50,000 sf. *Project Architect*

Department of Engineering & Public Policy Renovation, Carnegie Mellon University, Pittsburgh, PA—Substantial renovation on the 4th and 5th floors of Wean Hall to provide a unified space and public facing front for the department. Spaces include faculty offices, student lounges, workspaces, quiet study, and conference areas. *Project Architect*

Friendship Circle Addition, Pittsburgh, PA—Exterior and interior renovation of a 3-story property in the heart of Squirrel Hill. Provides supplemental space to repeat client's existing adjacent building as a community hub with supportive programming. Features a cafe restaurant, teen wellness center, and offices. 5,100 sf. *Team Member*

Gwynn Building Renewal & Reuse, Cincinnati, OH—For a repeat client, rehab and transformation of a historic 13-story Beaux Arts office building for an upscale hotel with signature restaurant, meeting and event spaces; the project, in the downtown Main Street Historic District, will have historic tax credit funding and target LEED Certification. 154,000 sf. *Team Member*

Letsche School Apartments & Townhomes, Pittsburgh, PA—Adaptive reuse of 2 vacant public school buildings on the National Register, plus 4 new townhomes will create much-needed mixed-income housing (82% Affordable) and contribute to revitalization of the historic Hill District. Substantial interior renovation preserves essential architectural elements, while adding modern amenities and a community space; LIHTC funding. 53,000 sf (reno) + 6,700 sf (townhomes). *Team Member*

JOINED PWWG
2021

EDUCATION
Bachelor of Architecture,
Certificate in
Classical Architecture,
University of Miami

REGISTRATION
Architect in NY

PROFESSIONAL
ASSOCIATIONS
American Institute of
Architects (AIA) Member

key personnel +



jan irvin +

aia, leed ap
SENIOR ASSOCIATE

Jan has 30+ years of experience as a successful planner, designer, and senior project manager for education and multi-family housing, renovations, and adaptive reuse. He has focused throughout his career on exploring the connections between design, constructability, and durability. Jan combines these interests, and his ongoing study of sustainable design and preservation, and emerging building technologies, to writing specifications for PWWG's multi-million dollar projects for academic, commercial, and non-profit clients. Jan enriches PWWG firm culture with workshops for staff and local architects on construction, and he develops and implements many of the firm's quality control initiatives.

RELEVANT PROJECT EXPERIENCE

West Virginia Capitol Complex Building Four Renovation, Charleston, WV—third project on the capitol campus renovates site, exterior, and interior of a 1950s office building; updates to layout, systems and finishes address life safety and accessibility, and preserve mid-century architectural character. 96,000 sf. *Specifications / Project Support*

WV State Capitol Complex Building 3 Restoration and Reuse, Charleston, WV—Comprehensive masonry envelope and tile roof restoration and interior redesign of a historic building for contemporary office space, with flexible layouts, updated systems and AV/IT, new amenities and FF&E. 165,000 sf. *Specifications / Project Support*

Cincinnati Music Hall Exterior and Interior Revitalization, Cincinnati, OH—PWWG helped secure \$25M in catalyst funding then led restoration and modernization of one of the world's most architecturally acclaimed historic multi-function venues; project reconfigured performance space, added amenities, and created two floors of flexible office space and six event spaces; use of Lean Construction delivered highest design, schedule and building performance outcomes. 307,600 sf. *Project Manager / Architect*

Becht Hall Reuse for Student Success Center, Clarion University, Clarion, PA—historic dorm reimaged as a “modern” historic building, consolidating services for 15 departments; flexible office, conference and classroom spaces for future needs; envelope restoration; PASSHE open-end project. 53,000 sf. *Specifications / Project Support*

21c Museum Hotel St. Louis, St. Louis, MO—Rehab and transformation of the 10-story historic YMCA building in downtown for an innovative hybrid art museum and 170-room boutique hotel with galleries, a signature restaurant, and event spaces; earned Historic Tax Credit funding. 163,500 sf. *Specifications / Project Support*

Buhl Library Feasibility Study and Modernization, Grove City College, Grove City, PA—Interior transformation of 3-story 1950's library for collaborative study, active learning, and spaces for socializing; vestibule addition and repairs to masonry envelope. 20,000 sf. *Specifications / Project Support*

Union Trust Building Transformation, Pittsburgh, PA—Comprehensive interior rehab and transformation of a historic 11-story shopping arcade in downtown for new Class-A office space, co-working space, ground floor commercial, and new underground parking; LEED Certifications—BD+C, Core and Shell-v3, O+M, Existing Buildings-v2. 517,000 sf. *Specifications / Project Support*

JOINED PWWG 2003

EDUCATION

Masters of Arts, Pittsburgh
Theological Seminary, 1996

Bachelor of Architecture,
Kent State University, 1980

REGISTRATION

Architect in PA

PROFESSIONAL ASSOCIATIONS

American Institute of
Architects (AIA) Member

LEED Accredited Professional

PERFIDO
WEISKOPF
WAGSTAFF +
GOETTEL

Todd has over 45 years of experience involving the analysis, design, construction management and specifications for mechanical engineering, heating, ventilating, air conditioning, plumbing, fire protection, electrical and lighting, as well as indoor environmental quality analysis, building system commissioning and forensic engineering for educational, governmental, military, commercial, industrial and health care clients. He is also recognized as a campus master planner for utility infrastructure providing master planning for the Technology Park in South Charleston and at many universities and hospitals, as well as the State of WV Capitol Complex.

Prior to starting a consulting engineering firm, Todd Zachwieja coordinated comprehensive energy conservation programs resulting in annual energy savings of millions of dollars. He has managed a profitable regional office for one of the country's largest energy companies that service the southeastern United States. Todd also developed computer modeling programs for building energy analysis and monitoring. He has been invited as an industry leader to present technical papers and speak at professional conferences both regionally and nationally.

Todd selected and designed the pilot project for one of the largest geothermal heat pump applications in the Eastern US including designing custom geothermal rooftop AHU's. He has retro-commissioned HVAC systems for millions of square-feet for facilities located in 10 states. He has been involved with many commercial, healthcare and industrial structures including high-rise building renovations. Todd designed renovations to many facilities which received **Energy Star Certifications** placing them in the nation's top 25% for energy efficiency. *The College Planning and Management Magazine* featured Todd and his work with a major university for the performance contracting programs that save millions of dollars in energy and operating costs. Most projects also qualified for EPA's Act which requires buildings use over 50% less energy than buildings designed using ASHRAE 90.1.

GOVERNMENT/COMMERCIAL PROJECT EXPERIENCE

- Bank One
- Bayer Material Science
- Calvert County Aquatic Center, MD
- Charleston Area Medical Center
- Chief Medical Examiners Office Retrofit
- Culture Center, HVAC & Fire Protection, WV State Capitol Complex
- General Motors Corp. Re-commissioning
- Harvard University Research Laboratory
- Hopemont Hospital, WVDHHR
- Jackie Withrow Hospital, WVDHHR
- Jackson County Courthouse Annex
- Kanawha County Commission: Judicial Annex additions/renovations
- Kanawha County Courthouse
- Kanawha County Public Library
- Kanawha County Schools
- Laidley Towers
- Marshall University
- Mercer County Courthouse Annex
- Mercer County Schools
- Olin Corporation
- Pocahontas County 911/EMS Center
- Public Service Commission of WV
- Rhone-Poulenc
- Roane General Hospital
- Robinson Grand Performing Arts Theatre
- Santa Anna Federal Building, CA
- Tyler County Courthouse
- Tyler County 911 Center - **Net Zero**
- Tyler County Schools
- Toyota Motor Manufacturer, WV Inc.
- UC Davis Veterinary Medicine, CA
- Union Carbide/DOW
- United Center
- University of Charleston Innovation Ctr.
- William R. Sharpe, Jr. Hospital, WVDHHR
- Word Trade Center, MD
- WV Air National Guard including Cx Fuel Cell/Maintenance Hangars at Yeager Airport – **LEED Silver Certified**
- WV Army National Guard
- WV Capitol Complex Renovations
- WVDHHR—State-wide hospitals
- WV DOH Testing Lab
- WV Division of Natural Resources
- WV Division of Protective Services
- WV Higher Education Authority
- WV General Services Division
- WV State Capitol Complex renovations
- WVU Health System
- West Virginia University



PROFESSIONAL REGISTRATIONS

Professional Engineer:

Florida 80814

Georgia 18253

Kentucky 17961

Maryland 47188

North Carolina 017445

Ohio 53587

Pennsylvania 040929-R

South Carolina 25985

Virginia 0402 025427

West Virginia 10127

Fire Investigation Certification under the direction of Peter Vallas, Sr.

Certified Energy Manager

(C.E.M.) National

Certification No. 2205



LEED Accredited Professional,

National Certification through

USGBC No. 10083891



EDUCATION

Masters of Science in Engineering Management from West Virginia University College of Graduate Studies.

Bachelor of Science in Mechanical Engineering from West Virginia Institute of Technology.

Ted, a third generation engineer and Principal in the firm, has over 20 years of experience in building construction design industry that includes award winning designs including the first Net Zero 911 Center in WV and technology awards for design innovation in multiple facilities. Innovation in HVAC, Plumbing, Fire Protection, lighting design/controls, technology, engineering design, communication methods and management of the design process are the areas of his expertise. As a pioneer and a believer in technological processes, Ted has championed Integrated Design Practices and Commissioning that has become the fabric of ZDS's day-to-day operations.

Ted develops ZDS's 3D Scanning and BIM services which have assisted in collecting key existing conditions for renovation projects, forensic engineering, historical preservation, and high definition reality capture. Ted has in-depth experience on collection, registration, and scan to BIM processes. He has provided training and developed materials for best practices when using 3D scan data. Ted's 3D scanning experience includes governmental, educational, health care, industrial, and commercial facilities. He also has experience in speaking on how 3D laser scanning impacts our industry today.

Ted is the Engineer-of-Record for design projects. As Engineer of Record he is responsible for all aspects of the project and takes a hands-on approach to the overall management, design and construction of the project. He works well with all stakeholders involved throughout the entire project lifecycle.

As Chief Technical Officer Ted develops and deploys a strategy of forward thinking and strategic development for ZDS' Integrated Design Processes, research and development into new technologies for improving quality of services for our clients.

Ted's project experience includes design and commissioning for electrical, lighting, security, IT, A/V, heating, ventilating, air conditioning, plumbing, fire protection, and acoustical systems for educational, health care, industrial and commercial facilities. His experience encompasses working both on new construction and renovation projects. He also is experienced in historical facilities including theatrical. He has significant experience in designing, commissioning and implementing efficient lighting and HVAC systems for various commercial, healthcare and educational facilities.

Ted maintains an active membership into the ASHRAE professional society and also has a lifetime membership in the Association of Energy Engineers. He maintains an active continuing education towards today's standards and codes as well as participates in ASHRAE at both a local and society level. He served on the Electronic Communications Standing Committee with ASHRAE. He has designed renovations to existing facilities which received **Energy Star Certifications** placing them in the **nation's top 25% of energy efficiency** facilities.



PROFESSIONAL REGISTRATIONS

Professional Engineer:

Florida 81011

West Virginia 21677

Certified Energy Manager (C.E.M.)

National Certificate

No. 22411



EDUCATION

Bachelor of Science in Mechanical Engineering from Rochester Institute of Technology, Rochester, NY

AWARDS AND RECOGNITIONS

Awarded 2012 Legend in Energy by the Association of Energy Engineers

Awarded acceptance into ASHRAE's 2015 Leadership University

ASHRAE Blue Ribbon Award of Excellence

Co-Author at Autodesk University

1st Place 2023 ASHRAE Technology Award, Region VII

Energy Star Certified for facilities in the Nation's top 25% of energy efficiency





EDUCATION

Bachelor of Architectural Engineering
Pennsylvania State University, 2000
Master of Architectural Engineering
Pennsylvania State University, 2000

PROFESSIONAL REGISTRATIONS

Licensed Professional Engineer in Arizona, Colorado, Florida, Georgia, Kentucky, Maryland, Mississippi, Montana, Nebraska, New York, North Carolina, Ohio, Pennsylvania, Tennessee, and West Virginia

EXPERIENCE

Mr. Taylor has served as the Principal for our West Virginia office since its opening, and has provided his structural expertise for a wide variety of projects including facility studies, new construction and renovations, building additions, and structural condition assessments throughout the United States.

Mr. Taylor's experience includes work for many different project types, including designing entire new structures; rehabilitating historic structures; facility expansions, additions, and department upgrades; and providing structural solutions for equipment including installations and retrofitting.

Recent projects designed by Mr. Taylor have reached construction costs as large as \$280 million. His daily responsibilities include attending design and development meetings, supervising the production of construction documents, reviewing shop drawings, issuing revision sketches, attending site visits and construction meetings, and completing site visit and structural assessment reports.

FEATURED PROJECTS

Oglebay Hall & Ming Hsieh Halls | Morgantown, WV

Home of the Department of Forensic and Investigative Science at West Virginia University, this project added state-of-the-art classrooms, labs, and support spaces as well as the restoration of brick, limestone, and terracotta for the exterior façade. The structure also included the addition of Ming Hsieh Hall, containing two lecture halls and a rooftop parking deck. Additionally, exterior facade restoration was completed for this building that is listed on the National Register of Historic Places.

66,000 SF | \$23.5M Addition & Renovation

WVU Medicine, J.W. Ruby Memorial Hospital | Morgantown, WV

AES's work at Ruby includes two joined, 10-story patient towers known collectively as the Southeast Tower. Other work includes the recently completed Heart and Vascular Institute, the main lobby expansion and infill, the expansion of the Neonatal Intensive Care Unit, and the John Michael Moore Trauma Center. Other projects include a new Children's Emergency Department and a new, connected 8-story Children's Hospital addition.

235,000 SF | \$280M Addition & Expansion

WVU Medicine, Heart and Vascular Institute | Morgantown, WV

Brought onto the project after construction began, AES was tasked with taking built systems and supplementing them in order to better utilize existing space. All of the imaging and procedural spaces were redesigned during construction, including 3 operating rooms, 3 hybrid operating rooms, a dual-plane and bi-plane CT, a 4DCT space, an EP lab, and a catheterization lab in a level of the building with floor-to-floor clearances intended for office and administration spaces.

110,000 SF | \$50M Construction

PERSONAL SUMMARY

Mr. Taylor has a wide range of projects with a major emphasis in medical facilities of all types and sizes, historical buildings, transportation and parking facilities, residence halls and educational buildings at major institutions of higher learning, and commercial facilities. His work includes cast-in-place concrete, post-tensioned concrete, and conventional steel framing systems. Not only does he engage the rest of the design team and the owner to provide creative, economic, and sustainable structural solutions, but he guides his team through a hands-on approach. He is involved in daily project supervision, project scheduling, team and client communications, and design oversight. He routinely conducts progress and coordination meetings on projects in progress, keeping in mind the needs and goals of his clientele.

REFERENCES

Apostolos (Paul) T. Nacopoulos
Senior Program Manager
Allegheny Health Network
814.452.7398
apostolos.nacopoulos@AHN.org

Brian V. Iavarone
Director of Facilities and Construction
UPMC Hamot
814.877.6318
iavaronebv@upmc.edu

Wayne Tennant
VP, Support Services
Mercy Health
330.480.2366
Wayne_Tennant@mercy.com



Building Envelope Consultants and Scientists, LLC.

Steven P. Bentz, P.E., R.R.C., R.W.C., R.E.W.C., R.B.E.C. Vice President | Internal QA/QC



Steve joined BECS in 2017 and is a Professional Engineer in nine states and the District of Columbia and a member of IIBEC and ASTM, and an active participant in the SWR Institute. Steve holds a Bachelor of Science in Architectural Engineering from Pennsylvania State University.

Steve has significant experience in building enclosure and repair/restoration design including roofing and waterproofing, historic facades and roofs, curtainwall systems, below-grade waterproofing, plaza systems, Local Law 11/FISP (NYC) and Pittsburgh Ordinance façade inspections, weld inspections, structural repair designs, parking garage repairs, masonry repairs, stone repairs, and a host of other building enclosure systems. Additionally, Steve has experience in rope-access/difficult access assessments of building facades and stadiums, as well as the design of building fall protection and building access/maintenance systems.

EDUCATION

- Bachelor of Science Degree
Architectural Engineering
Penn State University

PRACTICE AREAS

- Historic Preservation
- Waterproofing/Roofing
- Inspections
- Weld Inspections

CERTIFICATIONS

- Professional Engineer: VA, MD, DC, PA, DE, WV, OH, NJ, TN, & NY
- IIBEC Roof Consultant
- IIBEC Waterproofing Consultant
- IIBEC Exterior Wall Consultant
- IIBEC Building Envelope Consultant
- Cetco Below-Grade Waterproofing Inspector
- Barrett Waterproofing Inspector

AFFILIATIONS

- Sealant Waterproofing Restoration Institute (SWRI)
- Association for Preservation Technology (APT)
- International Institute of Building Enclosure Consultants (IIBEC)

Related Projects:

- **U.S. Customs and Boarder Protection Adv. Train. Cent. (ATC):** Harpers Ferry, WV
Assessment, diagnostics, testing, design, and consulting for envelope and leaks
- **U.S. Coast Guard/Social Security Administration:** Kearneysville, WV
Condition assessment and roof system design/CA as part of campus reconfiguration
- **City-County Building Exterior Restoration:** Pittsburgh, PA
Assessment, design, and inspections for emergency façade and roof restoration
- **Mount Carmel Monastery:** Wheeling, WV
Condition assessment of the 100+ year-old masonry building enclosure system in the preparation of recommendations for repairs associated with the planned change of use of the facility. Brick/stucco exterior, windows, and roof included in assessment.
- **Allegheny County Office Building Façade Consulting :** Pittsburgh, PA
Assessment and restoration design of façade restoration project
- **Carnegie Museums Façade Consulting:** Pittsburgh, PA
Assessment and repair consulting for various museums around Pittsburgh
- **The Frick Building Cornice Failure, Cornice Repairs, Roof Replacement, Façade Repairs, and Window Washing System Design:** Pittsburgh, PA
Design and Implementation of Repairs and Rope Access Façade Assessment
- **The Koppers Building Façade Repairs:** Pittsburgh, PA
Design and Implementation of Repairs and Rope Access Façade Assessment
- **144 Evergreen Farms Dr:** Wardensville, WV
Structural condition assessment and roof and wall repairs
- **J Edgar Hoover Building :** Washington, DC
Garage Assessment, Design, and construction-phase consulting for garage renovation



Building Envelope Consultants and Scientists, LLC.

Michael Payne, P.E., PMP

Sr. Project Manager | Managing Lead



EDUCATION

- Bach., Architectural Engineering
- Masters, Architectural Engineering
Penn State University

PRACTICE AREAS

- Restoration Consulting & Design
- Envelope Consulting & Design
- Structural Engineering
- Testing/Inspections
- Leak & Diagnostic Investigation
- Roofing/Waterproofing
- Balconies/Plazas/Terraces
- Parking Structures
- Stone & Masonry
- Window/Curtainwalls
- Wall/Barrier/Flashing Systems
- Fall Protection Systems
- Hygrothermal/Moisture Studies
- Historic Restoration

CERTIFICATIONS

- Licensed Professional Engineer:
- DC, MD, NJ, OH, PA, VA, W.VA
- Project Management Professional
- Certified Asbestos Inspector

AFFILIATIONS

- International Concrete Repair Institute (ICRI),
- Project Management Institute (PMI)
- Building Owners and Managers Association International (BOMA)
- NAIOP

Pittsburgh, PA Operation Center Lead

Michael is a Senior Project Manager who joined BECS in 2019. He graduated with a master's degree focused on advanced structural systems, building failures and forensic techniques, and building enclosures. As a professional engineer, he has developed extensive experience in the repair and restoration engineering and building envelope consulting field with hundreds of projects executed in VA, MD, DC, PA, W.VA, NJ, NY, OH, and other locals. He has worked with clients providing a broad scope of engineering and consulting services to private, professional, institutional, and government entities across many market segments.

Michael has provided assessment, design, contract administration, QA/QC, testing, and client consultation for projects that have focused on building and site assets such as roofs, building envelopes, facades and curtainwalls, balconies and plazas, structural systems, parking structures, site-civil and pavements, retaining structures, fall protection/building access systems, and others. He has experience with both new and existing construction, including historical restoration and adaptive reuse projects. In addition to project-based engineering and consulting services, Michael has experience performing building envelope consulting and performance testing, reserve study analyses, due diligence assessments, and condition assessments for capital expense planning.

Related Projects:

- **WVU Field Hall Exterior Consulting** : Morgantown, WV
Condition assessment and diagnostics testing of exterior walls and roof.
- **Bureau of Fiscal Services (Dept. of Treasury) Building**: Parkersburg, WV
Roof assessment, design, and construction phase services
- **Mount Carmel Monastery**: Wheeling, WV
Building envelope consulting for adaptive reuse project to transform an old monastery into a boutique hotel. Included design review services, inspection, and testing.
- **Draxxhall/Rugby Portfolio Historic Envelope Repair Consulting**: Pittsburgh, PA
Building envelope consulting services related to extensive multi-million dollar exterior restoration projects at the Frick Building, Gulf Tower, and Koppers Tower downtown. Also included assessment, drawing review, and delegated design assistance related to glazing system and air barrier system replacement at several smaller properties.
- **University of Pittsburgh Craig Hall Garage, Façade, and Plaza Renovation**: Pitt, PA
Assessment, design, CA/QA, and testing for restoration project encompassing the garage, plaza, and façade.
- **City-County Building Exterior Restoration**: Pittsburgh, PA
Assessment, design, and inspections for emergency façade and roof restoration
- **University of Pittsburgh Garage Assessment**: Pittsburgh, PA
- **The World Bank Headquarters**: Washington DC
Building envelope consulting, structural engineering, design development, quality assurance inspections, testing services at the HQ building and Buildings I, J, and IFC



Building Envelope Consultants and Scientists, LLC.

Traci Powell, P.E. Subject Matter Expert | Structural Engineer



Traci is a Licensed Professional Engineer in the Commonwealth of Pennsylvania and a member of the American Institute of Steel Construction. She holds a Bachelor of Architectural Engineering from the Pennsylvania State University.

Traci began consulting on structures in the Pittsburgh region in 2005. She has served as a project engineer for a wide variety of projects including new construction, renovations and rehabilitations, surveys and assessments, and façade inspections. She has extensive experience in repair and restoration including historic renovations, façade rehabilitations, City Ordinance façade inspections, structural repair designs, parking garage rehabilitations, and masonry repairs. She is a subject matter expert in structural engineering and technical rope access inspections

EDUCATION

- Bachelor of Architectural Engineering Degree
Penn State University

PRACTICE AREAS

- Structural Engineering and Design
- Garage Assessments
- Façade Inspections
- Historic Restoration
- Concrete Rehabilitation
- Steel restoration
- Rope-Access Assessments

REGISTRATIONS

- Commonwealth of Pennsylvania | No. 086434
- SPRAT Level 1 Rope Technician
- Mobile Vertical and Mobile Boom Lift Operator

AFFILIATIONS

- American Institute of Steel Construction (AISC)
- International Concrete Repair Institute (ICRI)

Pittsburgh, PA Operation Center

Related Projects:

- **Allegheny County Office Building Façade Consulting** : Pittsburgh, PA
Assessment and restoration design of façade restoration project
- **Arrott Building**: Pittsburgh, PA
Historic Renovation and façade repairs to 20-story historic building
- **Oliver Building Façade Restoration**: Pittsburgh, PA
Façade Assessment and design development for façade restoration. Terra cotta cornice restoration
- **Union Trust Building**: Pittsburgh, PA
Historic building renovation including terra cotta mansard roof resto. Also Design and construction services related to addition of subgrade parking levels and ramp systems as part of whole-building renovation.
- **411 7th Avenue Building**): Pittsburgh, PA
Full façade restoration of 17-story building including brick, terra cotta, and stone
- **412 Boulevard of the Allies (URA)**: Pittsburgh, PA
Façade Assessment and design development for façade restoration
- **University of Pittsburgh Garage Assessment**: Pittsburgh, PA
Structural garage assessment of 9 university-owned parking structures
- **165 Halsey**: Newark, NJ
Façade assessment and design development for historic façade restoration including brick and terra cotta.
- **Point Park University Façade Consulting**: Pittsburgh, PA
Façade consulting and assessment, all campus buildings



Building Envelope Consultants and Scientists, LLC.

Nicholas Szakelyhidi

Senior Project Manager | Building Envelope Consultant



EDUCATION

- B.A.E. in Architectural Engineering
Penn State University

CERTIFICATIONS

- Engineer In Training (EIT)
- Construction Document Technologist (CDT)
- Certified Infrared Thermographer (CIT) Level II

PRACTICE AREAS

- Building Envelope Design
- Envelope Design Review
- Construction Quality Assurance
- Field Performance Testing
- Building Restoration
- Diagnostic Investigation

AFFILIATIONS

- American Institute of Architects (AIA)
- International Institute of Building Enclosure Consultants (IIBEC)
- American Air Barrier Association (ABAA)

Pittsburgh, PA Operation Center

Nick is a graduate of Penn State with a degree in Architectural Engineering. He has spent his career involved with multiple aspects of building science, with specific attention on building envelopes. In dealing with existing structures, Nick has assessed, investigated, and developed prudent and practical solutions to address owner needs and maximize facility life cycles. Nick has played critical roles on new construction projects as well, providing third-party quality assurance observations, and planning and directing quality control testing to ensure building envelope systems are constructed to meet performance requirements.

As a Senior Project Manager, Nick is dedicated to identifying building problems and solving them through engineered solutions. The goal is to provide clients with tailor-made services so that their assets are designed, built, repaired, and maintained to meet high performance standards and provide years of effective operation.

Related Projects:

- **The Astoria:** Arlington, VA
Assessment, design, bidding, QA, and CA for repair of a post-tensioned concrete parking garage. Repairs addressed structural concrete and post-tensioned reinforcement, along with below-grade leak issues.
- **House Office Buildings (multiple):** Washington, DC
Exterior envelope assessment of three historic House of Representative office buildings, including infrared thermography and hands-on defect surveys.
- **Soaring Eagle Lodge:** Snowshoe, WV
Forensic investigation of roof failure and repair design for remediation.
- **Walter Reed Army Inst. of Research Window Repl.:** Silver Spring, MD
Third-party quality assurance for window and exterior renovation at secure property. Tasks included design review and QA scope development, field quality assurance audits, and field quality control testing.
- **Daniel Webster Page Residence Exterior Renovation:** Washington, DC
Selective exterior stone assessment and investigation, and roof assessment with drainage study
- **Johns Hopkins University Applied Physics Lab:** Laurel, MD
Design review, quality assurance inspections, and testing of both a roof replacement project and a curtain wall restoration project.
- **Naval Observatory:** Washington, DC
Quality assurance and testing for building envelope commissioning, including whole building air testing at a secure site.
- **Fairfax Government Center Envelope Consulting:** Fairfax, VA
3rd party Building Envelope consulting services



steve kinnaman

PRINCIPAL ELEVATOR CONSULTANTS

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 51 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. He currently does an extensive amount of work in New York City, the Middle East and in Europe.

EDUCATION

BA, Northern Arizona University, 1969

CERTIFICATIONS

AESA Certified Elevator Inspector C-5277
New York City Licensed Elevator Inspector No. 569007

PROFESSIONAL ASSOCIATIONS

Member, International Association of Vertical Transportation Professionals
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

PROJECT EXPERIENCE

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 Towers, Istanbul, Turkey

50 Hudson Yards, New York, NY

55 Hudson Yards, New York, NY

70 Hudson Yards, New York, NY

360 Rosemary Tower, West Palm Beach, FL

Sony Center at Potsdamer Plaza, Berlin, Germany

West End Plaza Mixed-Use Complex, Frankfurt, Germany

Random House Office & Residential Tower, New York, NY

Federation Towers, MIBC Plot #13, Moscow, Russia

Project Slava Mixed-Use Complex, Moscow, Russia

Moscow Int'l Business Centre, Plot #14, Moscow, Russia

Moscow Int'l Business Centre, Plot #12, Moscow, Russia

Taishen Intl' Bank Office & Residential Tower, Taipei, Taiwan





morgan kronk

PRINCIPAL COST ESTIMATOR

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.

PROJECT EXPERIENCE WITH PWWG

- 4700 Fifth Avenue, Carnegie Mellon University, Pittsburgh, PA
- Pedestrian Bridge, Western Pennsylvania School for Blind Children, Pittsburgh, PA
- Margaret Morrison Renovations, Carnegie Mellon University, Pittsburgh, PA
- Margaret Morrison Elevator Addition, Carnegie Mellon University, Pittsburgh, PA
- Palumbo Science Center, LaRoche University, Pittsburgh, PA
- SEI Space Study, Carnegie Mellon University, Pittsburgh, PA
- STEM Study, WVU Potomac State College Keyser, WV
- Crawford County Courthouse Planning, Meadville, PA
- Old Economy Village Rehabilitation and Upgrades of Historic Buildings, Ambridge, PA
- The Garden Room at the National Aviary, Pittsburgh, PA
- President's House Study, Carnegie Mellon University, Pittsburgh, PA
- Campbell Hall 4th Floor, West Liberty University, West Liberty, WV
- Manchester School Window Replacement, Pittsburgh Public Schools, Pittsburgh, PA
- Downtown Campus Library Gallery and Atrium Study, West Virginia University, Morgantown, PA
- West Virginia Building 4, Charleston, WV
- Frame Gallery Bathroom, Carnegie Mellon University, Pittsburgh, PA
- William Pitt Union Porch Repairs, University of Pittsburgh, Pittsburgh, PA
- National Aviary Masterplan Refinement, Pittsburgh, PA
- Warner Hall Study, Carnegie Mellon University, Pittsburgh, PA
- 21c Museum Hotel Lexington, Lexington, KY
- Child Development Center, West Virginia University, Parkersburg, WV
- Cambell Hall, West Liberty University - West Liberty, WV
- Historic Shaw Hall Study and Renovation, West Liberty University, West Liberty, WV
- Glen Hazel High Rise, Housing Authority of Pittsburgh, Pittsburgh, PA
- Vermeire Manor Phase II, Sharon, PA

PROFESSIONAL ASSOCIATIONS

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



MORGAN
PROPERTY &
CONSTRUCTION
CONSULTANTS

| relevant +
projects

PERFIDO
WEISKOPF
WAGSTAFF +
GOETTEL



wv state capitol building #3 renovation : charleston, wv

re-use/renewal of a landmark historic office building

PWWG restored one of the most prominent buildings on the WV Capitol campus— with preservation, historic Building 3 – for use as a modern, well-functioning and welcoming office space. The services needed to successfully implement this project included: code and life safety compliance evaluations, feasibility evaluations, space programming, coordinating complex MEP/FP system upgrades in an integrated process, and developing 3D visualizations of design options.

EXTERIOR WORK RESTORED FROM THE OUTSIDE IN

- Replaced existing Ludowici clay tile roof to match existing, and coordinated QC with the manufacturer; 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.
- Restored original bronze doors, and integrated increased security.

CLIENT: Dept of General Services, State of West Virginia

SIZE: 165,000 sf

COST: \$37.5M

COMPLETION: 2017

FIRM RESPONSIBILITY:

Lead Architect coordinating large consultant team
Programming
Architectural Design
Contract Documents
Contract Administration

REFERENCE:

William Barry, Director
West Virginia General Services Division
304.352.5532
William.D.Barry@wv.gov

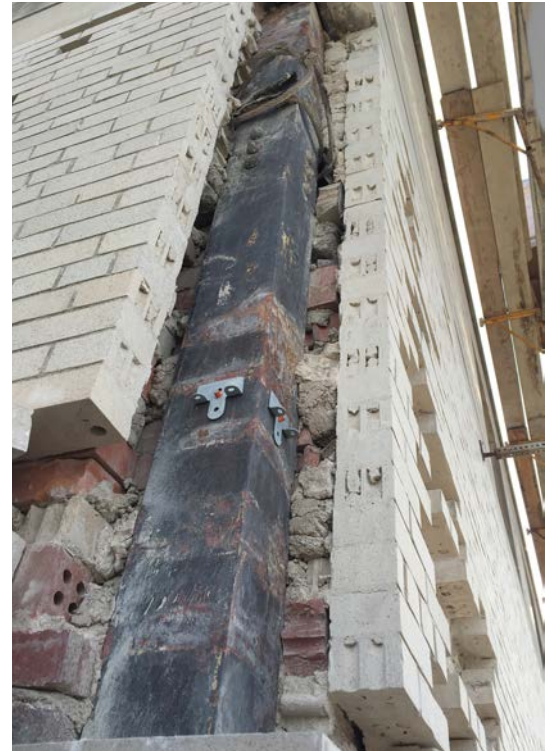
 Design Award Winner



Mockup of new roof as part of QC



Ludowici tile fabricated to match original signature color; roof restoration in progress



Corner removed to add expansion joint



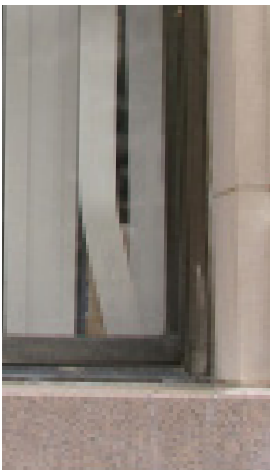
Parapet existing condition



Parapet during exploratory demolition



Reconstructed parapet mitigates water infiltration



Existing window (l), window restoration mockup (r)



Existing main entry door (l) and historic bronze door restored (r), with state-of-the-art access controls and ADA hardware



wv state capitol building #4 renovation : charleston, wv re-use/renewal of a landmark historic office building

This is the third project on the capitol campus, which renovates the site, exterior, and interior of a 1950s office building. It updates the layout, systems and finishes, addresses life safety and accessibility, and preserves the mid-century architectural character.

The goal of this project is to provide flexible, state-of-the-art open office space for multiple agencies and users. Although Building Four is not listed on the National Register of Historic Places, the client wanted to maintain the existing style and historic character of the building in a manner consistent with the National Park Service Historic Preservation Standards.

CLIENT: Dept of General Services, State of West Virginia

SIZE: 7 stories plus basement, 82,000 sf including basement

COST: Confidential

COMPLETION: 2023 (Est.)

FIRM RESPONSIBILITY:

Lead Architect coordinating large consultant team
Existing Conditions Doc
Programming
Architectural Design
Finishes
Contract Documents
Contract Administration

REFERENCE:

Scot Casdorph, PE
Architecture & Engineering Manager
WV General Service Division
Architectural and Engineering
304.957.7145
Scot.R.Casdorph@wv.gov



cincinnati music hall envelope, window, and roof renovation: cincinnati, oh

This National Register landmark in the heart of the historic Over-the-Rhine neighborhood hadn't had a significant upgrade in 50+ years and needed extensive structural, functional, and aesthetic work inside and out to restore the building and upgrade for 21st century use. For exterior scope, PWVG led a team of national consultants with specialties in envelope restoration, structural work in historic buildings, historic window replacement, lighting, and others.

APPLYING THE ART & SCIENCE OF PRESERVATION RESTORED AN ARCHITECTURAL JEWEL

- NPS approved PWVG's strategy to make the "most essential" restorations to the façade. Sensitive discerning this scope allowed the team to stabilize the structure and reinstate architectural integrity, preserving funds for critical interior work.
- "Essential" exterior scope included: opening windows and archways bricked-in or plastered over; recreating tracery in transom windows beneath the iconic rose window; retrofitting a total of 103 windows—90 of which were custom—to be historically accurate with modern energy performance; selective repair of Music Hall's 4,000,000 bricks; and recreating the intricate pattern of polychrome black brick at the main facade.
- PWVG worked hand-in-glove with the construction team, the Ohio SHPO, and NPS to restore, stabilize, and enhance the building, and earn both federal & state historic tax credits.
- Site improvements include: removing non-historic canopy, replacing the sidewalk, plaza, steps and railing, removing the existing obtrusive ramp system, and creating a new at-grade accessible entrance in the South Hall.
- Revitalizations of this magnitude & complexity typically take 24+ months; design & construction team collaborated to finish in 16 mos., navigating daily surprises with existing conditions.

CLIENT: Cincinnati Center City Development Corporation (3CDC)

SIZE: 307,600 sf

COST: \$143M

COMPLETION: October 2017

FIRM RESPONSIBILITY:

Programming
Architectural Design
Contract Documents
Contract Administration

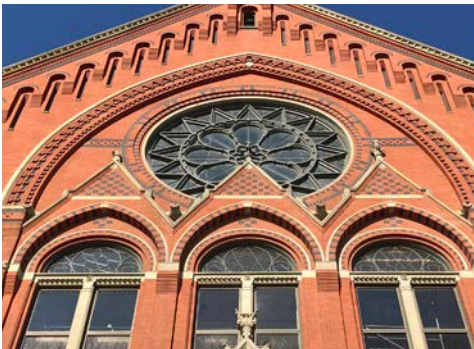
REFERENCE:

Steve Leeper, President & CEO
3CDC
513.621.4400
sleeper@3cdc.org

 Design Award Winner



Complex, intricate reroof was part of exterior & interior revitalization. PWWG collaborated with the SHPO, engineering consultants and contractors to develop the roof plan and all details to replace the signature 2-color dimensional asphalt shingle roof, reinforce structural components, and upgrade all life safety elements to meet code. Materials are durable and visually stunning—reroofing won a prestigious QARC Gold Award for capturing the original essence of Music Hall.

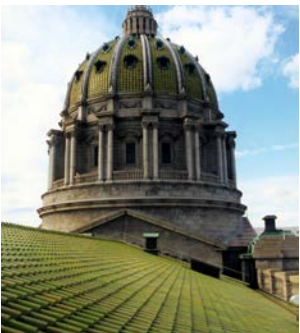


Three arched transom windows below the building's iconic rose window were restored. Large-scale architectural drawings were not available; aggressive sleuthing turned up just a single photo from the 1950s showing window details. By digitally enhancing the photo, scanning it, and enlarging it, the team recreated the exact patterns and lacey tracery on all 3 windows, reviving an intricate piece of history. The windows not only look historically accurate, but also live up to modern energy performance standards.



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pa capitol exterior restoration : harrisburg, pa

PWWG coordinated rehab of the monumental 1906 Main Capitol Building in Harrisburg, including the roof, domes, cupolas, granite masonry, wood windows, paving and steps. Completed as a joint venture with Graves Architects and Noble Preservation Services.

APPLYING THE ART & SCIENCE OF PRESERVATION RESTORED A MAJESTIC BUILDING

- Project restored the envelope with “best practices” in preservation and SHPO standards while introducing details to withstand the next 50-75 years.
- Restoring curved glazed-tile roofs on domes required inventive design and detailing—tiles were in place with no waterproofing over steel purlins; PWWG detailed custom replacement tile, precisely matching the original, retrofit over a new deck with watertight membrane; curvature was preserved so decorative copper elements fit perfectly when reinstalled.
- Mortar joints at gutters at gabled roofs leaked constantly; PWWG redesigned with durable lead-coated copper drainage basins, and separate drains for each. Gutters were rebuilt at low elevation to prevent water from contacting the granite surfaces, and keep it from backing up under the new gabled roofs.
- Project was constructed in phases over several seasons, synchronized with other interior projects at the Capitol. The building was occupied throughout construction.

CLIENT: Pennsylvania Dept. of General Services

SIZE: N/A

COST: \$25M

COMPLETION: 2005

FIRM RESPONSIBILITY:
Preservation Research
Materials Testing/Analysis Design
Contract Documents
Contract Administration

★ Design Award Winner



historic oglebay hall envelope, roof, and interior renovation, west virginia university : morgantown, wv

The envelope of Historic Register Oglebay Hall had deteriorated to a point where significant intervention was needed to save the 90-year old structure. As part of the comprehensive renewal and reuse of the 1917 building, PWWG guided the University to consensus on design and programming goals for restoring and repurposing the building by working with Campus Facilities and stakeholders from six departments.

APPLYING THE ART & SCIENCE OF PRESERVATION RESTORED A CAMPUS ICON

- Oglebay Hall was stripped to its masonry shell and wood frame structure, and the interior was repurposed with classrooms, offices, and labs for teaching forensic sciences.
- PWWG designed details for new slate roof with stepped copper flashing, new copper gutters and flashing.
- Brick, limestone, and terra cotta exterior walls were cleaned and completely restored.
- PWWG coordinated a full consultant team from programming through contract administration.
- Entire front entry sequence was redesigned for accessibility.
- WVU's first LEED Certified project.
- Repeat client — this was one of 5 projects PWWG has completed for WVU.

CLIENT: West Virginia University

OGLEBAY HALL SIZE:
50,000 sf renovation

COST: \$20M (Combined w/ reno of existing Oglebay Hall)

COMPLETION: 2008

FIRM RESPONSIBILITY:

Programming
Architectural Design
Contract Documents
Contract Administration

REFERENCE:

John Thompson, PE
Associate Director,
Design and Construction
304.293.3625
John.Thompson@mail.wvu.edu



LEED Certified



margaret morrison facade restoration & waterproofing, carnegie mellon university : pittsburgh, pa restoration to modern standards

Restoration addressed deferred maintenance in Henry Hornbostel's 1913 Beaux Arts masterpiece, one of the most prominent buildings on campus. Cladding is an array of clay and stone masonry, formed concrete, and glazed terra cotta. Water had penetrated sky-facing joints for decades, severely corroding the building's steel frame and opening cracks allowing water into the walls. Problems were compounded and masked by superficial repairs which only dealt with surface flaws.

APPLYING THE ART & SCIENCE OF PRESERVATION RESTORED A CAMPUS TREASURE

- PWWG designed a "restoration to modern standards" with substantial de-construction and remedial repair. Structural steel was cleaned and coated or replaced; a new balustrade was cast using original pieces as molds; and all sky-facing joints were isolated from the cavity wall by a new roof slab extension with cap flashings. The roof drain system was replaced with interior drains to simplify routings and cleanouts. Monumental windows received new sills.
- Project balanced the client's technical requirements for waterproofing & historic preservation of an iconic campus building.
- Restored window frames matched historic profiles; new sashes with double glazing improved energy efficiency.
- PWWG also designed or coordinated solutions for storm water management that addressed persistent flooding in basement classrooms. A Reflection Garden, also created a new amenity on campus.
- PWWG coordinated the work of all engineering and facade consultants.

CLIENT: Carnegie Mellon University

COST: \$2.2M

COMPLETION: 2012

FIRM RESPONSIBILITY:

Forensic Investigation
Architectural Design
Contract Documents
Contract Administration

REFERENCE:

Bob Reppe,
Senior Director of
Planning & Design
412.268.5259
breppe@andrew.cmu.edu

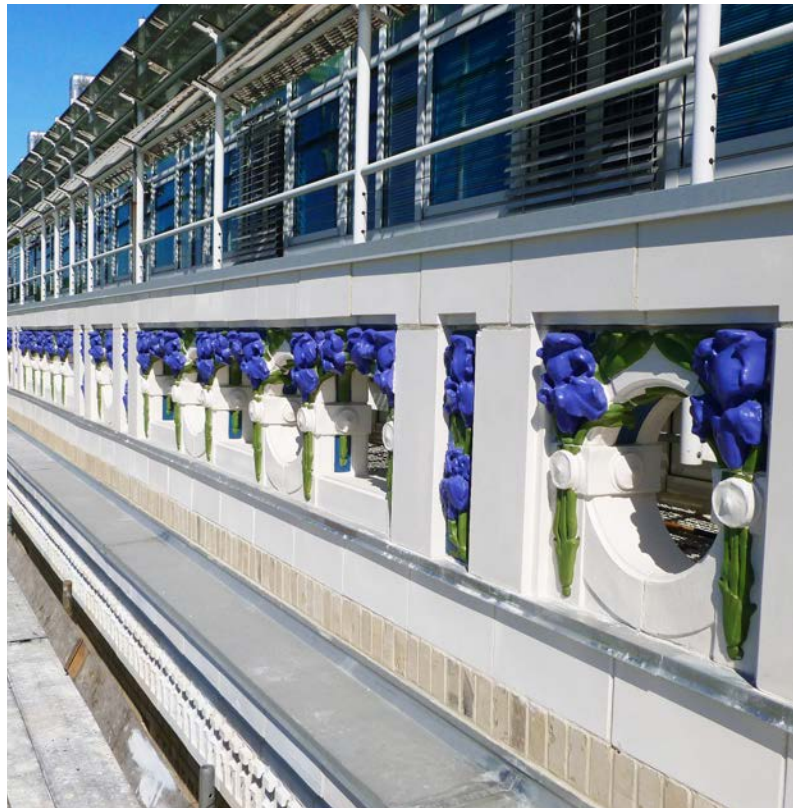
★ Design Award Winner

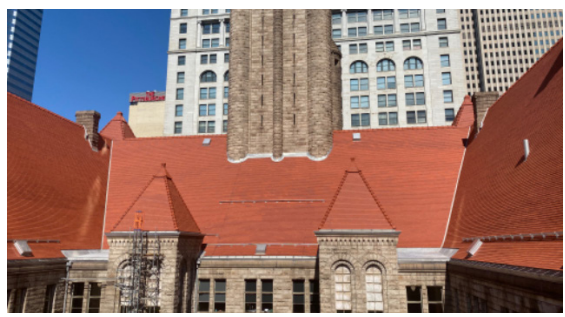


Forensic field investigations revealed significant deterioration of masonry and steel at the terra cotta frieze, balustrade, and lintels above the windows.



Cleaning and installation of structural steel, various locations





allegheny county courthouse roof & tower restoration : pittsburgh, pa

The Allegheny County Courthouse is one of H.H. Richardson’s most prominent buildings. More than a century of heavy use had taken its toll on the National Register landmark in downtown Pittsburgh. In 2014, the County selected PWWG to develop a comprehensive phased plan for preservation and improvements inside and out. PWWG led a team of experts with skills in historic preservation, integrating new systems into historic architecture, sustainable systems and cost estimating. In the course of one year, this team developed a master plan for the building to preserve, restore, and renovate the Allegheny County Courthouse to prepare for another century of use.

APPLYING THE ART & SCIENCE OF PRESERVATION RESTORED AN ARCHITECTURAL JEWEL

- PWWG was selected to implement first projects in the Facilities Plan—restoring major components of the exterior. Scope included: repointing granite roof of main tower and both courtyards; replace all clay roof tile with new clay tile; and replacing low slope roofs above ambulatories in the courtyard.
- New components are historically accurate, matching forms, color, and material of originals.
- Replacements are expected to last a minimum of 75 years.
- PWWG coordinated all work from the design stages through construction administration.

CLIENT: Allegheny County Dept. of Public Works

COST: Withheld at Client’s Request

COMPLETION OF FIRST PROJECTS IN THE FACILITIES PLAN: 2020

FIRM RESPONSIBILITY:

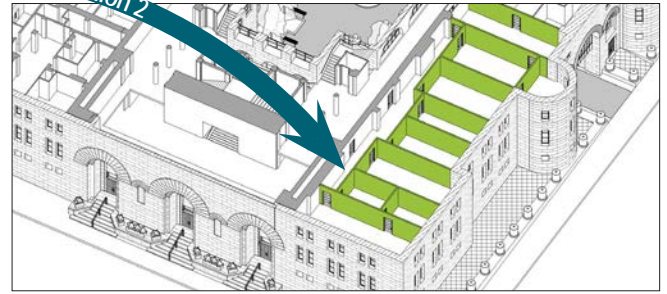
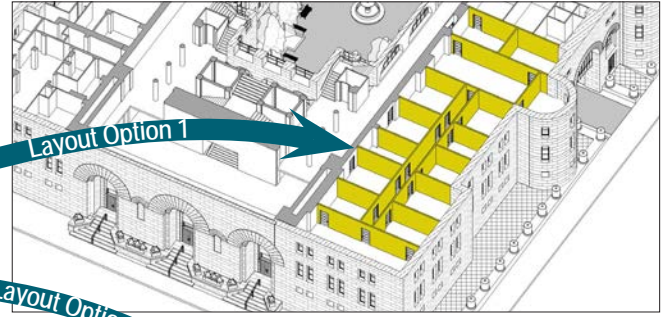
- Forensic Investigation
- Architectural Design
- Contract Documents
- Contract Administration

REFERENCE:

Kevin Halaja,
Deputy Director of Operations
County of Allegheny
412.350.3781
Kevin.Halaja@AlleghenyCounty.us



★ Design Award Winner



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



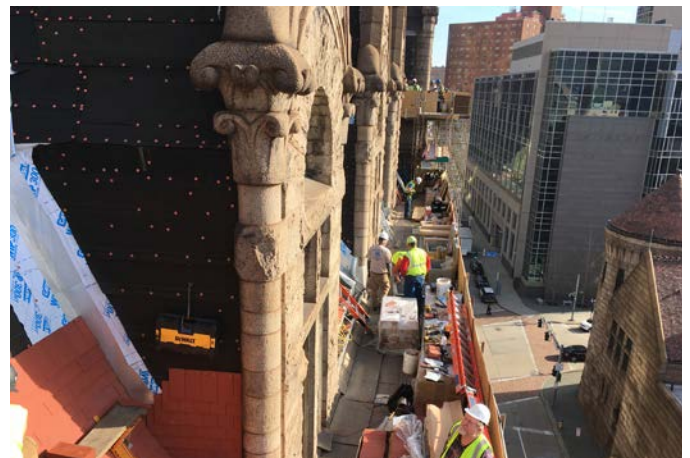
Existing clay tile roof, before restoration



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.

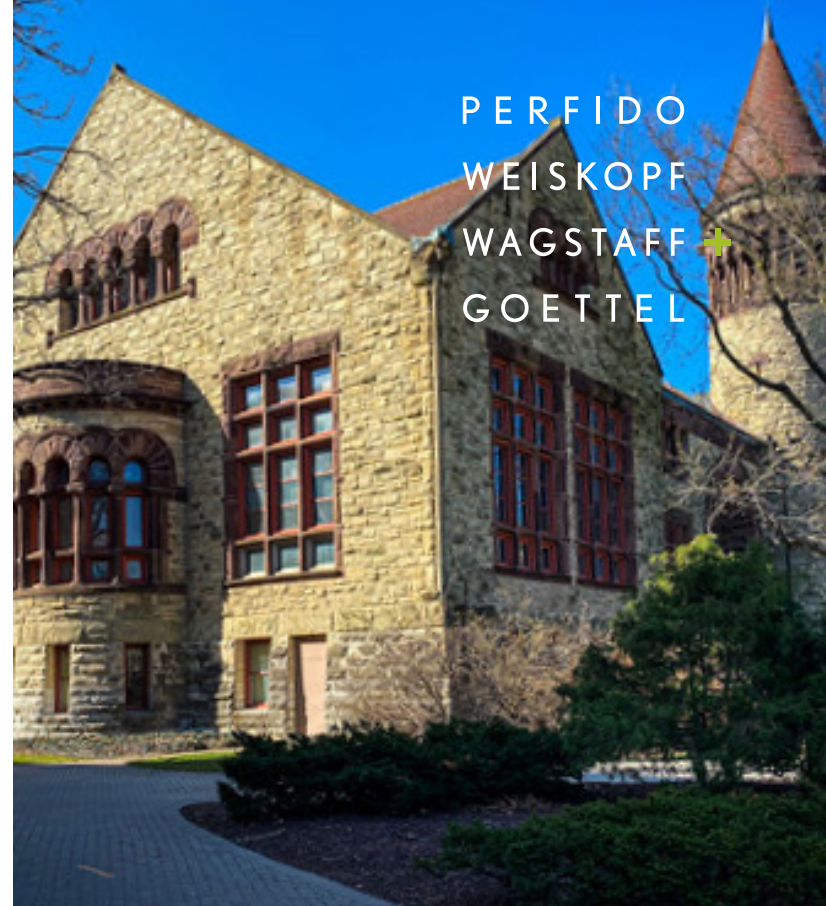


PWWG coordinated a tour with the County's project team of the Ludowici clay tile factory to observe the manufacturing process for specialty tiles used for the Courthouse re-roofing.



The scaffold platform doubles as a staging area for materials.

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Orton hall envelope study and concepts for repair, the ohio state university : columbus, oh

Built in 1893, Orton Hall is the second oldest building on OSU's campus. Forty different Ohio-based stone types make up the exterior walls, with oldest at the bottom to youngest at the top. PWWG led a team of national experts to investigate problems with the building's envelope including: roof drainage and needed repairs, foundation stability and waterproofing, and assessment of exterior masonry and mortar.

APPLYING THE ART & SCIENCE OF PRESERVATION RESTORED A CAMPUS TREASURE

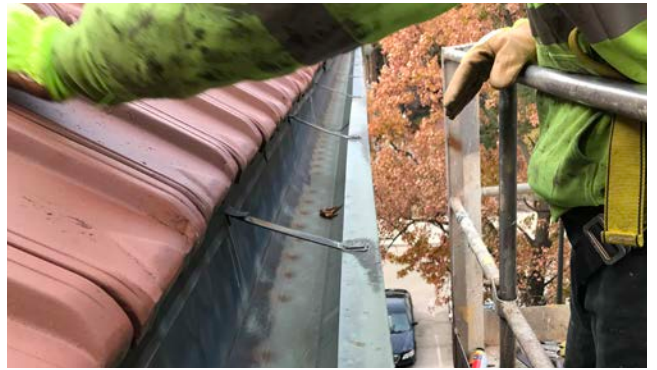
- PWWG's report catalogued issues with the envelope, with recommendations and architectural drawings for typical repairs; detailed cost info informed planning/selection.
- PWWG created an efficient process by managing design and operating as a single point of contact for the consultants.
- PWWG coordinated water infiltration testing and investigations of the roof and gutter systems.
- Working with PWWG gave the client access to specialty consultants not on their pre-qualification list
- PWWG's on-site meetings with the client expedited evaluating options for repair.

CLIENT: The Ohio State University

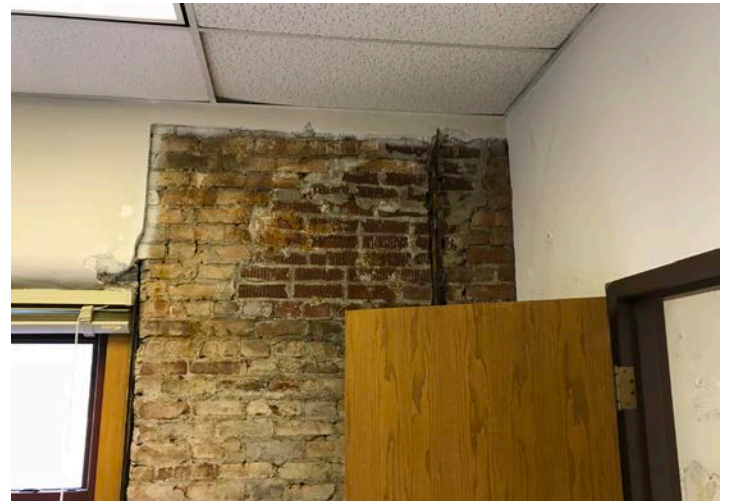
COMPLETION: 2019

FIRM RESPONSIBILITY:
Preservation Research
Materials Testing/Analysis
Architectural Design

REFERENCE:
Rick Van Deusen,
Project Manager
614.292.0257
van-deusen.2@osu.edu



SGH and PWWG team members removed roof tiles to investigate existing conditions while the building was fully occupied.



SGH performed water testing at second floor windows.



PWWG coordinated SGH's tests for water infiltration at the building's foundation.



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west park court : pittsburgh, pa

West Park Court is a HUD sponsored high-rise apartment for senior citizens on a prominent corner in Pittsburgh's historic North Side. It was originally clad with "EIFS", a fragile stucco material that was expensive to maintain, and prone to cracks, leaks, and mold. PWWG designed a new building envelope that solved serious technical problems and created a handsome new skin for this modernist "tower in the park." The new aluminum Pressure Equalized Rainscreen that "breathes" provided a long-term solution to the failing EIFS. It was installed entirely from the outside, and it improved the efficiency of the building by lowering heating and cooling costs by at least 15%. The materials and techniques will provide reliable performance, with very little maintenance, for a minimum of 50 years.

New aluminum and glass railings were also designed, complementing the aesthetic of the new building skin and serving as 'windows' framing views to Lake Elizabeth and the city beyond. At grade, the grounds were reorganized to provide sheltered garden terraces that visually connect to West Park while expanding first floor community space. Construction work was complete in approximately 9 months and West Park Court remained fully occupied throughout the renovation.

CLIENT: West Park Court Housing

SIZE: N/A

COST: \$2.2M

COMPLETION: 2007

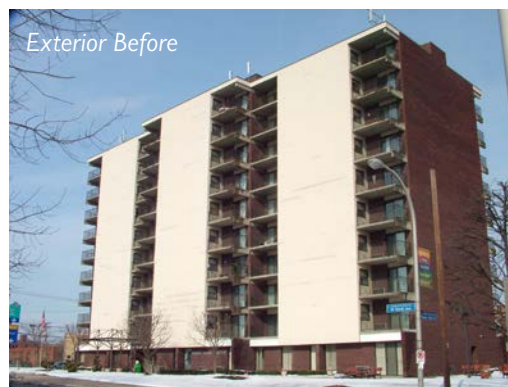
FIRM RESPONSIBILITY:

Programming
Architectural Design
Contract Documents
Contract Administration

★ Design Award Winner



Site Plan



Exterior Before



west general robinson street garage : pittsburgh, pa parking as urban experience

The Garage is in the center of Pittsburgh's dense North Shore neighborhood, a short walk from the city's professional baseball and football stadiums. It accommodates 1,233 cars on ten levels and serves both events and commuters. For stadium event traffic, the garage has a double-thread helix ramp with entrances and exits onto three separate streets. The garage ingress and egress coordinates with highway access and surface traffic patterns. Speed ramps on the north side of the parking decks allow rapid egress and quick connection to the northbound HOV lane. Weekdays, the garage serves commuters working in the North Shore neighborhood and in downtown Pittsburgh. The garage will become a true inter-modal facility when the underground light rail transit station is completed. The station's entrance will be integrated into the street level of the garage directly adjacent to the main lobby. As demand for structured parking increases, the design includes provisions for a parking deck extension to be built over, and bearing on, the light rail tunnel.

The design of the garage deftly reconciles the experience of the building at the macro scale—an urban environment dominated by elevated highways, bridges and stadiums—and the pedestrian experience of walking from one's car to and from an event at one of the stadiums. The building's stair/elevator towers have been pulled out of the volume of the parking deck to animate views of the building for drivers on the surrounding highways, while offering garage patrons dramatic views of the city's downtown skyline, stadiums and rivers. As patrons descend in the towers, they enter a pedestrian streetscape along General Robinson Street where the garage lobby, light rail "T" entrance, and two-story retail space establish a pedestrian scale and activate the street. During events, large overhead doors in the garage lobby allow free flow of crowds up into the over-sized stairs to encourage use of the stairs and reduce the load on the elevators.

CLIENT: Sports & Exhibition Authority of Pittsburgh and Allegheny County

SIZE: 400,000 sf

COST: \$23M

COMPLETION: 2006

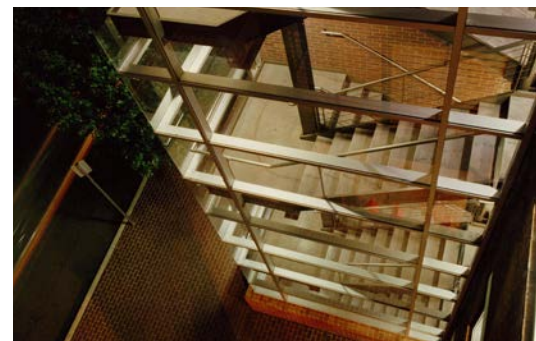
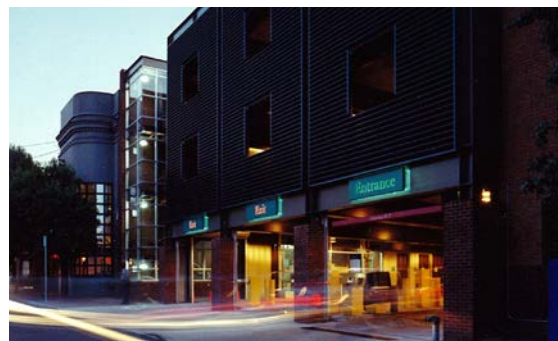
FIRM RESPONSIBILITY:

Programming
Architectural Design
Contract Documents
Construction Administration

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walnut street garage : pittsburgh, pa

The Walnut Street Garage is a five-level, 207-car parking facility located in Pittsburgh's Shadyside neighborhood, a residential community with an upscale urban shopping district at its heart. The construction was the culmination of a decade-long dialogue between residents, merchants, the Parking Authority, and the City of Pittsburgh concerning the community's parking problems.

The garage, which is located on Bellefonte Street, just north of Walnut Street, is designed to transition the character of the commercial district to the scale of the surrounding residential community. The front and rear facades of the garage are broken down into smaller, town-house-scaled proportions. All of its openings are louvered, creating an open parking structure with the appearance of being enclosed. The louvers are detailed to have the look of windows, but they screen adjacent residences from interior vehicle and building lights. Ramped edges are concealed from view to give the structure a horizontal/vertical geometry.

Several technical features are incorporated that address both functional and life-cycle cost concerns. The concrete parking decks are post-tensioned concrete slabs with a silica fume additive for increased density and resistance to road salt. The parking control equipment was Pittsburgh's – and the nation's – first complete "pay-on-foot" installation. Customers pay for parking using automated pay stations located in the lobby. The system eliminates the need for attendants and collection booths at exits.

CLIENT: Pittsburgh Parking Authority

SIZE: 207 Cars

COST: \$3.1M

COMPLETION: 1993

FIRM RESPONSIBILITY:
Community Planning and Zoning
Variances
Architectural Design
Contract Documents
Contract Administration

★ Design Award Winner



Engineering for Commercial Facilities

WV Public Service Commission



An AIA Awarded facility with sustainable features including geothermal energy.

Laidley Tower



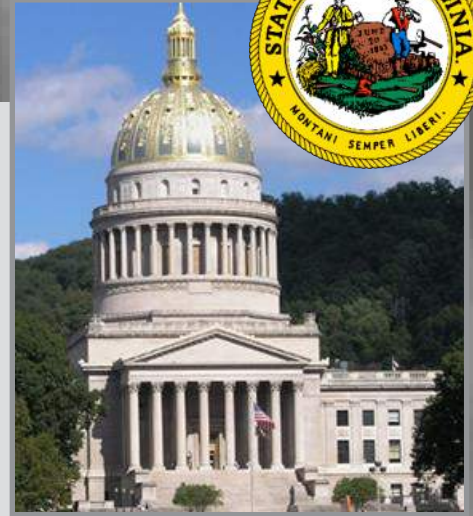
Laidley Tower is one of the State's tallest buildings rising 18 stories high. ZDS provided the Master Engineering Planning for the whole structure. ZDS upgraded the core Mechanical/Electrical and Plumbing systems as well as customized tenant build-out renovations.



ZDS
Design/Consulting Services

State of West Virginia Capitol Complex

Charleston, WV



Project Cost: \$26,500,000

Size: 1,900,000 ft² covering 9 buildings

Client Reference:

Patrick O'Neil, GSD for recent work

Builder Reference: Constellation Energy; Chuck Moeller
(previously with Johnson Controls; (724) 584-3331)

Peer Review, Commissioning, HVAC Renovations, Fire Protection, Electrical Renovations, Consultant for Performance Contracting

Numerous design and renovation projects for the WV State Capitol Complex including engineering planning, design, supervision, preparation of construction documents, specifications, construction administration, and commissioning of HVAC systems, sprinkler systems, plumbing systems, electrical power, lighting, fire alarm, security, technology and communications for many facilities on the WV Capitol Complex: **WV Division of Protective Services:** Engineering master planning & design for specific life safety issues involving homeland security, fire alarm, sprinklers, emergency power, CCTV, intercom, mass notification and "giant voice" system for all State facilities on the Capitol Complex under a 10-year open-end contract. **WV Division of Culture and History Library** renovations addressing long-term HVAC and IAQ problems including fire alarm and fire protection upgrades completed in 2011. Renovations conserved energy without sacrificing comfort or indoor air quality. **District Heating System:** As a consultant to Johnson Controls under a Performance Contracting program to provide master planning and design for the district heating system for the **WV Capitol Complex.** The project included the Master Planning, IAQ evaluation, energy analysis, code analysis and Mechanical design involving more than 1,900,000 ft² of facilities including the Capitol Building, Building's #3, #4, #5, #6, #7, Holley Grove, Governor's Mansion and the Culture Center and subsequent renovations to the steam systems. Recent work includes Bldg. #3 Hydronic Boiler Upgrades and Bldg. #4 Peer Review and Commissioning.



The Capitol Complex renovations are estimated to save nearly \$2,000,000 annually over the costs of operating the old systems.


Design/Consulting Services

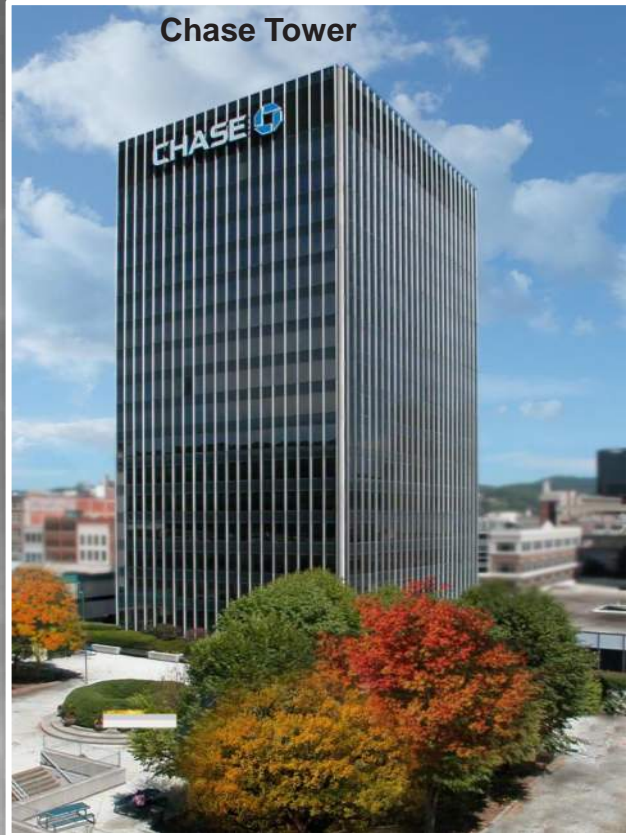
Engineering for Commercial Facilities

ZDS project experience includes a wide variety of commercial buildings — office, retail, judicial, banking, dining, technical and other facility types.

World Trade Center, MD



Chase Tower



Chase Tower (formerly Bank One) contains 271,000 ft² of professional office space and is a Charleston skyline focal point. ZDS replaced the core central HVAC system for the entire building.



Mercer County Courthouse Annex



Design/Consulting Services



ALLEGHENY CENTER GARAGE

\$25M RECONSTRUCTION

PROJECT VISION & BACKGROUND

When constructed in 1963, the Allegheny Center Garage was the largest parking garage east of the Mississippi. The conventionally reinforced, one-way concrete joist and beam structure underwent a multi-year rehabilitation to address significant deterioration of the concrete and reinforcing steel caused by years of deterioration from chloride-laden runoff.

STRUCTURAL SOLUTIONS

The project involved full-depth replacement of the 3-1/2 inch joist top slab while salvaging the joist ribs below. This approach economically addressed the most significant deterioration while limiting the amount of demolition of undamaged structure. To supplement the rehabilitation of the concrete structure, new expansion joints and trench drains were installed to replace deteriorated existing components.

The work progressed through numerous phases in multiple areas of the garage over an extensive, multiple year engagement.

TAKEAWAYS

Through strategic phasing of the project and after carefully surveying and assessing this garage, our firm was able to provide solutions that helped restore this deteriorating structure. Despite the project's impressive size, lengthy timeline, and variety of structural complications, our engineers were able to keep the design and construction team on track and on budget.





DITHRIDGE STREET PARKING GARAGE

\$1.35M REHABILITATION

PROJECT VISION & BACKGROUND

This project involved rehabilitation services to a parking structure at Carnegie Mellon University, which provides parking for visitors and students. This 8-level, post-tensioned concrete slab on steel beam structure that is located next to the Software Engineering Institute was experiencing considerable aging that needed to be addressed.

STRUCTURAL SOLUTIONS

This project consisted of a comprehensive condition assessment for the parking garage. Following the condition assessment, construction documents were developed to successfully rehabilitate the facility based on the findings.

Full-depth and partial-depth concrete repairs were carefully developed to restore the structural integrity of the post-tensioned slab. Structural repairs involved repairing corroded existing conventional reinforcing steel and broken unbonded post-tensioned tendons in the floor slabs. Steel framing was cleaned and repainted, a new closure wall at the top level between ramps was built to limit water infiltration, a new fluid-applied waterproof membrane was applied, and new LED lighting was installed. At the roof level, cracked masonry construction was repointed and painted. On the exterior of the garage, damaged exterior limestone façade panels were patched.

TAKEAWAYS

After extensive rehabilitation work this parking garage was given new life and a fresh appearance. This carefully choreographed renovation not only addressed the issues ailing the aging facility, but also increased the longevity of the structure for years to come.





OGLEBAY & MING HSIEH HALLS

\$23.5M ADDITION & RENOVATION

PROJECT VISION & BACKGROUND

Listed on the National Register of Historic Places, Oglebay Hall is the home of the Department of Forensic and Investigative Science at West Virginia University. This building located near the center of campus was in a state of disrepair until a new role was proposed to reinvigorate the facility and position it to serve the student body in a new capacity for future generations.

STRUCTURAL SOLUTIONS

This project added state-of-the-art classroom, lab, and support spaces to house the Forensic and Investigative Science Program. Extensive facade restoration of brick masonry, limestone trim, and terracotta components was required for this deteriorated circa 1918 building. Extensive interior renovations strengthened floors, and modification of the original wood-framed roof provided new means of distribution for mechanical system upgrades.

Ming Hsieh Hall was built as an extension to Oglebay Hall to house two lecture halls, including one double-height assembly space and a new roof parking deck. The renovation increased the capacity of the structure to support the increased load requirements of offices and labs compared to classroom spaces as originally designed.

TAKEAWAYS

This example of classic Revival architecture is once again a treasure on its campus. The careful and complete restoration of this old and long-vacant structure was supported extensively by structural solutions provided by our engineers, allowing the design team to successfully repurpose the facility without compromising its historic building status. The Ming Hsieh addition, and extensive system upgrades throughout the entire facility, expands this building's ability to perform well in its new role for many years into the future.





PONCE DE LEON HALL

\$8.5M RENOVATION & RESTORATION

PROJECT VISION & BACKGROUND

Ponce de Leon Hall, located at Flagler College in St. Augustine, Florida, is certainly one of the crown jewels in the world for architectural history on Florida's First Coast. Originally constructed by Henry Flagler in 1888 as a luxury hotel for northern clientele headed south for the winter, its construction was an unusual combination of cast-in-place concrete using local coquina stone as aggregate. It had 540 rooms and was a "destination hotel" in its day, but eventually declined and was sold to Flagler College in 1968, becoming the centerpiece of the campus. Because of its age and original construction defects, the building has undergone significant and almost complete restoration and reconstruction.

STRUCTURAL SOLUTIONS

AES has provided numerous renovation and restoration solutions for this building, including restoring the twin towers, reconstructing the balconies, assisting in the renovations of the living spaces (which reduced the total bed count to 480), and performing major structural reconstructions of the dining room and entry rotunda to address moisture damage to wood framing and general deterioration of the concrete building shell.

Perhaps the most complex challenge encountered was the restoration of the solarium dome. Located at the topmost portion of the structure, creative solutions had to be devised to successfully infill and reinforce the floor where an atrium used to connect the solarium to the lower levels. Handicapped ramps were added, and the dome itself was reinforced to create a large conference space out of the original solarium, now overlooking the entire campus and community from a series of large glass windows and external terraces.

TAKEAWAYS

Our engineers have spent nearly two decades assisting Flagler College with the meticulous and painstaking renovations and restoration of this magnificent building, as well as other individual structures on their campus. We are proud to be considered one of the caretakers of this one-of-a-kind architectural monument.





PPG PAINTS ARENA PARKING GARAGE

\$25M CONSTRUCTION

PROJECT VISION & BACKGROUND

This 5-level, 644-space parking garage is intended to be used by players, select premium season ticket holders, and other VIPs for the Pittsburgh Penguin's PPG Paints arena. The vision for this project was to produce a parking structure that allows garage users to enjoy covered access to the arena while simultaneously providing separate access for the players. With close proximity to downtown, the garage can be used alternatively for commuter parking throughout the week.

STRUCTURAL SOLUTIONS

A precast ramp provides the connection from the street to the top level of the garage. The garage construction features precast concrete double tees, precast spandrels, beams, wall panels and columns. The structural system relies on an independent retaining wall to stabilize the hillside cut at the adjacent Cambria Suites complex.

TAKEAWAYS

Designed to be a dual-use garage shared by the Arena and Cambria Hotel, this structure is a model for how a precast concrete garage on a steep hillside site can be developed by using supporting site structural elements to retain its efficiency and construction cost benefits. Through the responsive and creative precast solutions provided by our engineers, the design team was able to meet the goals of the project.





Building Envelope Consultants and Scientists, LLC.

Exterior Facades

The Frick Building

Full exterior renovation, roof replacement, vault repairs, and other consulting.
437 Grant Street, Pittsburgh, PA 15219
Draxxhall Management Corporation
Fran Escalante, Senior Vice President
412-263.5653
FEscalante@dmcpgh.com

The Frick Building was opened in 1902 and is an iconic building of the Pittsburgh skyline. BECS has been engaged with multiple projects at the Frick Building. After the dramatic cornice failure in 2017 BECS was engaged to complete the inspection and subsequent structural repairs of the stone and steel-framed cornice. BECS has been the consulting engineer for a roof replacement project, window washing system installation, and certification, as well as the continuous façade and cornice repair projects for over 2 years with construction costs estimated over 4 million dollars. Work performed includes assessments, design documentation, bidding services, and quality assurance observations.



Mount Carmel Monastery Adaptive Reuse

Envelope assessment/consulting, historical restoration, and structural consulting
Wheeling, West Virginia
Roxby Development
Contact: Jeff Morris
304-280-9140
jmorris@roxbydevelopment.com

1900 construction. Condition assessment included review of exterior masonry, stucco finishes, stone retaining structures, metal framed windows, and roofing. Limited diagnostics investigation was also completed, including leak review and structural sounding. BECS developed repair strategy and recommendations for exterior wall and retaining structure and provided general building envelope consulting as part of the work. \$1M+

Performed exterior envelope and limited structural review of historic monastery planned for an adaptive reuse project. Client was redeveloping building into a boutique hotel that maintained the historic fabric of the building based on the early

Baltimore City Hall

Ongoing building envelope and restoration consulting and repair design
100 Holliday St, Baltimore, MD 21202
Baltimore City Department of General Services
Chris Hepler, Deputy Chief, Capital Projects
410.396.4600
christopher.hepler@baltimorecity.gov;

After a large piece of marble crashed through a skylight in 2016, BECS, in conjunction with a group of consultants, material scientists, conservators and Contractors, conducted a detailed façade condition assessment. Stone distress was identified, and a repair program was developed to address the aging exterior walls.

As the project transitioned to construction in 2019, BECS stepped into the role of principal consultant and Engineer of Record to oversee construction progress. BECS's primary responsibility is advocating for the Department of General Services (DGS) and Baltimore City's best interests by overseeing the quality and technical aspects of the construction project during each phase.

A series of restoration services are ongoing, including masonry cleaning, stone dutchman repairs with quarried or local architecturally salvaged stone, repointing, patch repairs, protection of skyward facing joints with lead T caps, and more. BECS is active in the review of materials used, workmanship quality assurance, and developing action plans for unforeseen conditions. Materials and means/methods utilized are intentional in their application; the historic fabric of the structure is respected and the construction footprint is consciously limited to honor the structure's history and significance. Construction costs are \$17M+





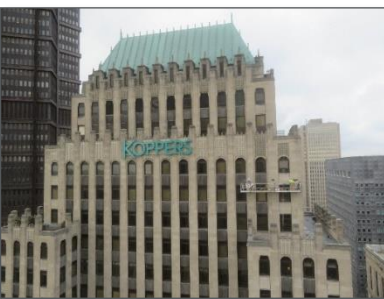
Building Envelope Consultants and Scientists, LLC.

Exterior Facades

Gulf Tower

Exterior assessment, restoration, and limited roof and structural repairs
707 Grant St, Pittsburgh, PA 15219
Draxxhall Management Corporation

BECS performed an exterior façade assessment of the 44-story art-deco style building which was originally constructed in 1932. Based on rope-access inspection, BECS identified numerous stone façade deficiencies requiring repairs. BECS performed structural engineering and façade repair design consulting to help implement a full-scale exterior stone restoration and stabilization program for the building. This included dutchman and stone replacement, crack stapling and pinning repairs, sealant replacement, and other exterior repairs. Limited roof and structural consulting were also completed as work progressed around the exterior of the building. Restoration work commenced in 2018 and was generally completed in 2023.



Koppers Building

Exterior assessment, restoration, and limited roof and structural repairs
635 Grant St, Pittsburgh, PA 15219
Draxxhall Management Corporation

The Koppers Building is a 1930s Art Deco Landmark building in downtown Pittsburgh. The building structure is steel-framed and encased in stone and brick masonry in the transitional-steel-framed assembly. While completing the City of Pittsburgh Façade Inspection Ordinance on the property via rope access, BECS identified significant structural repair issues necessary at the granite-clad portion of the building over the main entrance. BECS was responsible for the design and implementation of the structural steel repairs on this property as well as the on-going façade repair program from 2017-2020.

Pittsburgh City-County Building

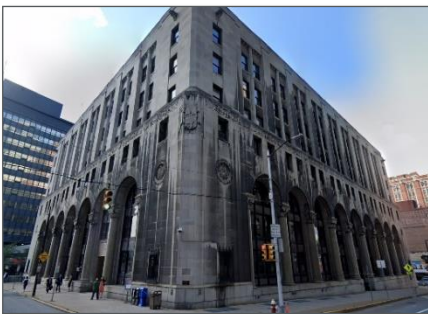
Emergency historical restoration and envelope consulting
414 Grant St, Pittsburgh, PA 15219
Bureau of Transportation and Engineering
Casimir Pellegrini III, Project Manager
412.255.2649
casimir.pellegrini@pittsburghpa.gov

Emergency repairs of the parapet wall, roof, and terra cotta cornice. BECS employees under previous employ with another firm worked with Graciano and CDM Smith to salvage the historical architectural features by providing design details as needed and quality assurance observations through a design-build approach. Unique structural repairs and stabilization were designed by utilizing steel stud welding as façade pinning to secure 1-ton water table stones in-place.



County Office Building Façade Consulting

Assessment and Design Consulting
542 Forbes Ave, Pittsburgh, PA 15219
Allegheny County
Kevin Halaja, Director of Operations
Architect: Hayes Design Group
Mark Duane, Principal
412.206.0410



BECS performed an investigative assessment of the exterior façade of the stone office building located in Downtown Pittsburgh. BECS utilized technical rope access techniques in order to complete the survey. BECS developed a summary report of conditions and recommended repair approach to allow County to develop a plan and budget to complete necessary repairs. BECS is currently in final negotiations with Hayes and Allegheny County to begin design and construction consulting services for a planned restoration project to complete the recommended repairs.



Building Envelope Consultants and Scientists, LLC.

Parking Structures

University of Pittsburgh Campus Garage Assessment

Campus-wide garage assessment, 9 garages
Pittsburgh, PA
University of Pittsburgh

BECS performed a campus-wide structural garage assessment of the 9 main campus garages owned and operated by the University of Pittsburgh. Assessment included review of garage structure, exterior building components, and associated plazas located at several of the sites. BECS developed a detailed condition assessment report including recommendations for repair methodologies, prioritization of repairs, and detailed cost estimates for project development.



J Edgar Hoover Garage

Garage Assessment, Repair Design, and CA/QA
935 Pennsylvania Avenue NW, Washington DC
Confidential

BECS worked with the project team to perform assessment, design, bidding, and construction administration and quality assurance inspections for the extensive garage renovation project at the FBI building in Washington DC. 2020.

Trimont Façade/Plaza/Garage Rehabilitation

Structural evaluation, repair design survey, and repair design for comprehensive site rehabilitation program for the multiple building façades, plazas, and garages
1 Trimont Lane, Pittsburgh, Pennsylvania 15211
Asset Manager: Oxford Development Company
Contact: Mike Balistreri
412.395.3457
mbalistreri@oxforddevelopment.com

BECS performed a structural review of the property, including façade, building, plaza, and garages. As a follow up, BECS assisted in the design of limited emergency garage repairs. BECS then became engaged with the client to develop a comprehensive rehabilitation program encompassing the building façade at both buildings on site, plaza waterproofing rehabilitation at two large plaza areas and the pool plaza, and additional garage repairs at two below-grade garages located below plazas/buildings. Design level surveys identified issues with the existing concrete framing, split slab and paver-finished plaza area waterproofing, expansion joints, and striated concrete façade panels. BECS developed design for multiple rehabilitation and maintenance programs for the property including restoration totaling approximately \$10M. BECS is assisting in construction-phase administration and quality assurance inspection/testing as garage restoration work commences.



University of Pittsburgh Craig Hall

Façade, Garage, and Plaza Restoration
200 S. Craig Street, Pittsburgh, PA
University of Pittsburgh
Jody Horn, Project Manager
412.304.8185

BECS provided engineering consulting and design services related to reported leak issues and structural degradation at the main level plaza and below-grade garage spaces of the multi-story office building, as well as to address overhead hazard issues with the building façade. BECS performed site assessment and developed a formal design (SD-DD-CD) which was bid out and awarded to Mascaro Construction to complete full plaza renovation, garage structural repairs, and limited masonry façade repairs. BECS performed construction phase CA and QA services including inspections and 3rd party leak testing using electronic leak detection (ELD) equipment. While the project ended up incorporating some additional scope items per Owner request and some uncovered conditions identified as work progressed, final project was completed under the initial project budget.

| project +
approach

PERFIDO
WEISKOPF
WAGSTAFF +
GOETTEL

team / wv state purchasing division

We understand the challenges associated with historic structures envelopes, interior renovations in occupied buildings, maintenance of parking garages, and multi-phased projects and have assembled a team of senior architects and experienced subconsultants ideally suited to the specific project challenges and goals expressed in this EOI. Our team has extensive experience working over the past three decades in the State of West Virginia and with the WV State Purchasing Division, General Services Division regulations, and AIA General Conditions as amended by the State on projects at the Capitol Complex including comprehensive renovations of Building No.4 (in-progress, construction phase) and previously completed comprehensive renovation and restoration of Building No.3. Our subconsultant – **ZDS** has extensive experience working with governmental agencies including WV GSD, Kanawha County Commission, WV Dept of Education, WVDHHR, WVDNR, WVANG, WVARNG, WV Higher Education Policy Commission, WV Public Service Commission, WV DOH, Dept. of Environmental Protection, US Department of Justice, PJKK Federal Building, many city government agencies, and most WV County School systems.

The core of the PWWG team will consist of **Anthony Pitassi as the Principal-in-Charge** and **Senior Associate Joe Filar as the Project Manager**. Tony and Joe both have extensive experience with the repair and renovation of historic buildings as well as interior renovations for adapting uses and modernization. Tony and Joe's complementary skills bring the necessary attention to the diverse range of challenges the project presents, including day-to-day project management and collaboration with the client and coordination of consultants.

For this project, Tony and Joe will be supported by **Joe Roy, Project Architect** who holds a Certificate in Historic Preservation from University of Miami (FL), and **Senior Associate Jan Irvin**, who is our specifications writer and quality control specialist. The balance of our team includes design professionals with the skills and expertise tailored to the requirements of this project for each building type, construction type, use and occupancy, and historic aspects including building envelope analysis, structural engineering, elevator engineering, and MEP systems engineering, beginning with a comprehensive assessment and evaluations, and recommendations for appropriate strategies to repair, replace, stabilize and improve deficiencies of the buildings and respective components.

Building Envelope Consultants and Scientists (BECS) provides the comprehensive expertise required for evaluations of the complete building enclosures that are prevalent to the construction systems and methodologies particular to the era in which they are constructed, and various material types used to develop an understanding of root cause to inform the appropriate strategies to improve long-term performance.

Atlantic Engineering Services (AES) provides the expertise required for primary building structural systems with a keen sensitivity and understanding of historic buildings and parking garage structural systems and appropriate repair and modification strategies.

ZDS Design / Consulting Services (ZDS) provides comprehensive professional services for Master Planning/ Feasibility Studies, HVAC, Plumbing, Electrical, Indoor Environmental Quality, Energy Engineering, Forensic Engineering and Commissioning. ZDS has extensive proven high-performance building design experience for all building typologies and client types including governmental agencies, specializing in renovation projects with proven results of from 30% to over 50% reduction in energy/operating costs earning Energy Star Certification and EPAAct qualified on government renovation projects.

SKA Elevator Consulting Group brings extensive experience and a broad range of expertise in all phases of elevator consulting including evaluation and planning as well as installation oversight of the modernization of vertical transportation systems in existing buildings. SKA has performed assessments of over 10 facilities on the Capitol Complex and implementation at Building 3 and Building 4 with PWWG.

Morgan Property and Construction Consultants (MPCC) provide professional, independent construction cost estimating actively in each phase of design to provide realistic, practical, and valuable tools to communicate cost savings and feasible alternative solutions. After each design phase, a menu of alternates for "options", "adds" and "deducts" provide flexibility and a range of options to help shape the scope of the project and mitigate uncertainties.



assessment, comprehensive reports, budgetary estimates

In the multi-system assessment category, we include a comprehensive review of:

- the **building structure and envelope** – roof, walls, floors, windows, drainage, structure,
- the **building interiors** – walls / floors /ceilings, elevators, plumbing / heating / lighting fixtures,
- the **building systems** – HVAC, plumbing, electrical, communications, sound, security, elevators,
- and **cost estimating** – for repairs and upgrades for multiple, tiered, cost-effective solutions.

For Building 31 (Diamond) and Building 35 (Garage), we will start with an effort to thoroughly understand what you have, with site visit(s) to survey existing conditions, review of existing documentation available and prior project plans to develop a broad scope of work and budgetary cost estimates in line with industry best practices to address items such as deterioration or failure of enclosure components, moisture infiltration, and indoor air quality with consideration to minimize disruption to building occupants.

We recognize that the building envelope has a significant impact on the HVAC system's performance, efficiency, and operational costs. Our team has the expertise to provide systems and life cycle cost analysis to demonstrate excellent energy efficiency improvements, along with specialties in proven sustainable energy-efficient design demonstrated by Energy Star Certified facilities to LEED Certified facilities. Our team will work closely to identify deficiencies, prioritize immediate repairs, and develop optimum phasing strategies for upgrades and improvements using energy modeling tools to assist in the decision-making process for the best outcome.

As with all our work, our approach to work in existing buildings and those of high architectural quality, the goal is to sensitively integrate new or replacement components and new systems so that they enhance rather than compromise the quality of the building's exterior and interior environments. Over PWWG's nearly 50 years of operation, our foundational principles have been grounded in preservation and restoration efforts in existing buildings and heavily based on historic structures in urban environments and historic districts. Our work begins with understanding the building's story and evolves to modernize in historically respectful ways for generations ahead.



renovations for occupied buildings

Through open communication with your stakeholders, proposed building renovations and implementation strategies will be carefully coordinated by our team around building occupant needs and considered during the project scoping and development of project phases. We have proven experience involving building renovations that required close coordination and, in some cases, phasing of the work to avoid conflict with the daily operations of the facilities. PWVG's work with Colleges and Universities is a great example of strategic planning and scheduling of design and construction phases to occur on campuses in environments that are continuously operational where minimal disruption is vital. We also recognize the challenges of maintaining life safety elements, ingress, and egress flow for the public as well as occupants within the buildings are paramount to a successful project.

ZDS completed a substantial renovation project at Riverside High School, including geothermal heat pumps with Dedicated Outside Air Units (DOAS) for the outdoor ventilation air, lighting upgrades, and roof replacement which construction occurred while the school was still operating. Tyler County Middle/High School Renovations, William R. Sharpe Jr. Hospital additions/renovations through WVDHHR, University of Charleston Innovation Center/Eddie King Gym addition/renovations, and the recently completed HVAC/Roof renovations to the Kanawha County Judicial Building are other comparable projects involving reports and implementation of phased construction.

design phases / multi-phased projects

Our team provides all design through construction administration phases necessary for a successful project. Many renovation projects in existing buildings include phased work or multiple bid packages to maintain continuous operation while being constructed. PWVG's work with Colleges and Universities is a prime example of strategic planning and scheduling of design and construction phases to occur during sometimes very narrow breaks in the academic calendar throughout the year and working in environments that are continuously operational. In addition, various scopes of work are tailored to fit within these time frames, or separate scope packages are developed to account for long lead items and are carried out over a longer period to facilitate minimal disruption. ZDS recently completed a comprehensive project for The William R. Sharpe Jr. Hospital including an assessment, multiple bid packages, and phased construction that allowed the hospital to operate and meet stringent healthcare requirements. The construction period was longer than the traditional period to permit the hospital to stay in operation.

Our goal following the Initial Assessment and design process is to deliver what you need, which accounts for a project that meets your needs and one that you can afford.



maintaining quality throughout the project

The key to our approach is checking documents throughout the process and avoiding last-minute changes. We have a quality control plan that lays out the process step-by-step, ensuring that the entire team is coordinated in this mission. QC reviews are conducted at each major phase of the project with the following measures:

- QC begins at concept: Ensure that the design scheme adheres to its program and budget. Early reviews of the design also focus on phasing logic, constructability, code compliance and cost estimates.
- Capability of Core Consultants: Meticulous coordination between an interdisciplinary team is achieved when all members understand and respect each other's work. Our relationship with our consultants enable us to refer to other projects and experiences as precedents in communicating clearly with each other
- QC Coordination: Our QC Coordinator ensures consistency between our drawings and those of our consultants and with code issues.
- Quality Assurance Efforts: Throughout design our internal team works with MasterSpec Drawing Coordination Checklists that tie to the specifications that are written for the project, ensuring the proper information is relayed in the proper place. The team also refers to checklists prepared by the AIA to safeguard that each design phases contains the relevant and proper detail of information.
- Incorporate QC time into the Schedule: As we develop a more detailed work schedule, we incorporate QC review time into each phase, allowing time to review the drawings based on the review.

Quality Management
Project Administration and Design

PWWG 2012

PREDESIGN PROJECT PHASE CHECKLIST Project #/name: 21715.00 DGS IUP Science Building

PWWG ADMIN: STAFFING, FEE ALLOCATION, GOALS/STRATEGY

Project Identification: Assign project number. Load master project folder in project directory - use PWWG standard project folder tree.

Contract: Review contract for scope of services and fee.

Scope of Services: Verify if any scope of services beyond traditional services are required:
 structural studies e.g. existing build analysis electric load studies environmental studies
 feasibility studies planning applications needs assessment detailed programming
 specialty lighting security elevator traffic food service medical
 other: utility investigation, site survey.

Consultants: Determine types of consultants, determine consultant fees (see Owner requirements).
 MEP civil structural estimator technology lighting food service
 interiors lab landscape, geotechnical, dispersion consultant, Associate Architect/LEED, Environmental (hazard), site survey, utility/markout

Project Budget Worksheet: Allocate fees overall and for each phase, expenses and profit. Based budget on agreed upon scope of work, schedule and delivery method. Review at PM meetings.

Staff Roles: Identify and determine project staff roles and level of principal involvement. Verify that staff assigned have abilities for the roles or will be equipped with training/time/additional skills that could affect profitability. Set staff goals i.e. intern SD or CA experience.

Principal in charge: **KW** (Initials)

Responsibilities: client contract principal client contact/client manager thru project
 additional services contracts consultant contracts attend all primary client design meetings
 attend selected client design meetings principal designer selected design role
 SD/DD design presentations - role: DD/DD specs available for regular consult and review. Other: _____

Principal Design Responsibilities - _____ (Initials)
 principal-in-charge project manager architect
 Responsibilities: site and vehicular building thermal envelope and aesthetics interior layout design detailing

Project Manager/Architect: **LC** (Initials)
 Responsibilities: client contract principal client contact/manager through project
 additional services contracts consultant contracts consultant management/review of drawings principal designer selected design role attend all primary client design meetings attend selected/secondary client design meetings primary architect role
 SD/DD design presentations job captain role/drawing organization SD/DD/CD CAD layouts/design/detailing drawing reviews DD/DD spec writing other: _____

Primary or Staff Architect(s): **Macklin** **Stadie**
 Responsibilities: principal designer selected design role: _____ attend all primary client design meetings attend selected/secondary client design meetings SD/DD design presentations job captain role/drawing organization SD/DD/CD CAD layouts/design/detailing drawing reviews other: LEED SD/DD/CD spec writing.

Quality Management
Project Administration and Design

PWWG 2012

OWNER/CLIENT DESIGN, GOALS, CONST. BUDGET, SCHEDULE, AND DELIVERY METHOD

Job Captain: **JP** (Initials) Drawing organization/management
 Responsibilities: DD/DD/CD CAD design and detailing QA Drawing reviews DD/DD type writing physical model production

Interests: _____
 Responsibilities: DD/DD/CD CAD design and detailing QA Drawing reviews DD/DD spec writing

Goals/Strategy: (based upon fees, profit allowed, marketing potential, new tech or prototype investment, other)
 1. *to strengthen our portfolio of non-construction science buildings*
 2. *to provide high design yet cost-effective to campus (capital A' architecture) within budget*
 3. *to successfully land/coordinate the extensive project team*

PWWG Project staff meeting: Schedule/conduct an internal project team staff meeting to review roles.

Other: _____

General: Review overall project info. Review client/owner program

Contacts: Create project contact list

Client contact/responsibilities:
 primary client and staff contact person(s): Richard Manslow (IUP), Barbara Lariaia (DGS)

Determine what design/data information is required and how information is to be gathered:
 additional program info/meetings (estimate type, participants, number): _____
 SD meetings (type, participants, number): _____
 DD meetings (type, participants, number): _____
 CD meetings (type, participants, number): _____

Owner Provided Existing Condition Information: Determine/gather any outstanding info required from owner.
 under presentation requirements alpha survey borings/geotech report tamat boring phase environmental existing building drawings physical need assessment (HLD)

Owner Provided Performance Requirements: See Pre-design Decision matrix for list.
 Owner/Developer Specifications, e.g. DGS, DGS Project Procedure Manual
 Under Requirements, e.g. PFA:
 Exhibits: Are Drawings to be provided by PWWG? Not required (see B.C. requirements or A/H) Site Building exterior Building interior HAZUS quality level. For Demolition purpose

Determine relevant Codes, regulations, owner specification A/H's:
 Preliminary Code Identification - ICC 2009 Not required (see B.C. requirements or A/H) International Building Code International Residential Code International Energy Conservation Code International Fire Code International Mechanical Code International Plumbing Code International Building Code International Fire Code International Energy Conservation Code International Mechanical Code International Plumbing Code

ADA zoning Planning Commission DD CD Historic Review Commission A/H (Authority having jurisdiction) Indiana Board for stormwater Punder requirements: Community Other: _____

Quality Management
Project Administration and Design

PWWG 2012

CONSULTANT COMMUNICATION AND COORDINATION

Identify number of non-owner presentations: zoning board planning commission community historic review commission city council other

Owner presentation of design and/or document review: program SD DD Board of Trustees

Third party design/document reviews: Punder: _____

Verify client construction conceptual budget w/ respect to scope of work requested.
 Construction Allotted Budget: \$63,320,000
 Est. SF: _____ New Construction: 181,944 sq ft Renovation: 0 sq ft
 Est. Cost per SF: New Construction: Arch: _____ MEP: _____ Total: _____
 Renovation: Arch: _____ MEP: _____ Total: _____
 Site: Total: _____ Unit: _____

Realistic budget: Yes No Needs further verification

Anticipated Construction Quality
 Austere Economical Moderate Excellent Grand Mixed

Owner or PWWG Design focus or limitations required
(Example: Entry and Lobby (Moderate), site from perspective (Economical), all else (Austere))

Construction Contract: Verify form of general conditions to be used: AIA Other: _____

Construction Delivery approach: Direct Selection Competitive Bid Negotiated Single Prime Multiple Prime Construction Management Design Build

Schedule: Create initial project milestones and submissions schedule based upon above, verify with consultants, in-house.
 Est. Design Period: 2/2018 - 6/2019
 Est. Bid Date: 2/2018
 Est. Const. Period: 11/2018 - 12/2023 (IUP move in 6/2022)

Project Schedule: Distribute schedule to all project parties.

Project Kickoff meeting: If determined to be necessary schedule/conduct meeting w/client and/or engineers

Other: _____

CONSULTANT COMMUNICATION AND COORDINATION

Insure that consultant has program information and any special requirements.

Verify MEP staff names/positions assigned to project and appropriateness of MEP staff i.e., an EIT on complicated project, or if project is HVAC intensive and the MEP PM is an electrical eng.

Clarify communication procedures and coordination i.e. PM.

Number of design meetings with PWWG: SD DD CD CD
 Owner MEP design or review meetings: SD DD CD

Execute and distribute consultant agreements.

Send project schedule to consultant.

Examples of QA/QC forms from a recent project



effective schedule management

Through our work with many institutional clients, PWWG understands the paramount importance of schedule. We have an excellent track record in schedule control, which is maintained by keeping timing issues at the forefront of the project process and by resolving key issues at appropriate times. Classroom buildings, for example, have critical schedules with inflexible opening dates.

Our internal organization helps ensure that each project meets its schedule and budget:

- **Significant Involvement by senior staff:** We are selective in our work and project assignments. Our target is for senior staff to be active on no more than five projects at a time in order to ensure that they can be significantly involved in the design.
- **Making correct decisions the first time:** By approaching decisions with rigor, and through the use of computer models to carefully study options, we avoid late design changes that might lead to delays.
- **Schedule Control is Collaborative:** We keep timing issues at the forefront of the design process, resolving key issues at the appropriate times, keeping changes to a minimum, and predicting where changes are likely to occur. At the onset of the project, we establish a clear understanding of the client's project goals and building on that knowledge, we develop a specific project approach that defines each phase of the project and outlines the most appropriate ways to implement each phase.

| references +

PERFIDO
WEISKOPF
WAGSTAFF +
GOETTEL

references +

pwwg

Kevin Halaja,
Deputy Director of Operations
County of Allegheny
412.350.3781
Kevin.Halaja@AlleghenyCounty.us

Bob Reppe,
Sr. Director of Planning & Design
Carnegie Mellon University
412.268.5259
breppe@andrew.cmu.edu

Scot Casdorff, PE
Arch. & Engineering Manager
WV General Service Division
Architectural and Engineering
304.957.7145
Scot.R.Casdorff@wv.gov

zds

Mike Pickens,
Executive Director
National Council for
School Facilities
304.400.9993

Gary Boyd,
Director of Facility Services
University of Charleston & WVU
304.357.4871
garyboyd@ucwv.edu

Greg Nicholson,
Retired COO
WV Department of
Health and Human Resources
304.552.0101
gregnicholson@suddenlink.net

aes

Michael J. Cain,
Project Executive
Mascaro Construction
412.321.4901
mjcain@mascaroconstruction.com

Greg Heddaeus
Senior Project Manager
Carl Walker Construction
412.490.2924
gheddaeus@carlwalkerconstruction.com

Jeff Konkle
Construction Rep
MAK Construction Products Group
412.952.1737
jeffk@mak-cpg.com

becs

Fran Escalante
Senior Vice President
Draxxhall Management Corp. Rugby
Realty Co, Inc.
412.263.5653
fescalante@dmcpgh.com

Christopher Hepler
Deputy Chief, Capital Projects
Div. Dept. of General Services
City of Baltimore
410.396.4600
christopher.Hepler@baltimorecity.gov

Jody Horn, RA,
Project Manager,
Capital Project Management
University of Pittsburgh,
412.304.8185
jlh357@pitt.edu

ska

Jim Verzella
Senior Vice President
The Related Companies
856.470.7474
jverzella@related.com

Jaime Garrido
Architect & Project Manager
The City of Phoenix
602.319.0705
jaime.garrido@phoenix.gov

Mark Binelli
Senior Project Manager
The City of Phoenix
602.339.1536
mark.binelli@phoenix.gov