

# Expression of Interest

for

Chilled Water System  
Building No. 9  
West Virginia Capital Complex  
Charleston, West Virginia  
Req #GSD096435

prepared for

Department of Administration  
General Services Division



115 Evergreen Heights Drive  
Suite 400  
Pittsburgh, Pennsylvania 15229  
Phone (412)931-8888  
Fax (412)939-2525

RECEIVED

2009 FEB 19 A 10: 26

PURCHASING DIVISION  
STATE OF WV



## Introduction

Tower Engineering is pleased to provide this qualifications package in response to the Department of Administration's Request for Expression of Interest for the Chilled Water Renovations to Building No. 9 at the Capitol Complex.

We have carefully reviewed the RFP and based on our understanding of the scope of work for this project, we are confident that we can meet the needs of the Department of Administration for this project in its entirety. Until the conceptual requirements are established, we do not believe it is possible to develop and design and construction schedule for this project.

Tower Engineering accepts and understands that any and all work produced as a result of a contract for this project will become property of the Agency and can be used or shared by the Agency as deemed necessary.

We would be honored to be of service to the State of West Virginia for this project.

Thank you for your consideration

## Firm/Team Qualifications

**NAME OF FIRM:** Tower Engineering

**ADDRESS:** 115 Evergreen Heights Drive  
Suite 400  
Pittsburgh, Pennsylvania 15229

**PHONE:** (412) 931-8888

**EMAIL:** jkosinski@estower.com

**CONTACT PERSON:** James N. Kosinski, P.E.  
Principal/Vice President

**KEY PERSONNEL FOR THIS PROJECT:**

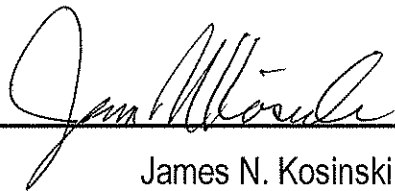
James N. Kosinski, P.E., Principal in Charge  
Thomas J. Gorski, P.E., Project Manager & Lead HVAC Engineer  
Michael S. Plummer, P.E., Lead Plumbing Engineer  
John C. West, P.E., Lead Electrical Engineering

**SUB-CONSULTANTS FOR THIS PROJECT:**

Architectural Services  
Perfido Weiskopf Wagstaff + Goettel  
408 Boulevard of the Allies  
Pittsburgh, Pennsylvania 15219-1301

Structural Engineering Services  
Taylor Structural Engineers, Inc.  
2274 Swallow Hill Road  
Building 100  
Pittsburgh, Pennsylvania 15220

Resumes of our key personnel are attached.

  
James N. Kosinski, P.E., Principal



Tower Engineering Qualifications



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

# Request for Quotation

BFO NUMBER  
**GSD096435**

PAGE  
**1**

ADDRESS CORRESPONDENCE TO ATTENTION FOR  
**KRISTA FERRELL  
 304-558-2596**

VENDOR

**RFQ COPY  
 TYPE NAME/ADDRESS HERE**

Tower Engineering  
 115 Evergreen Heights Drive  
 Suite 400  
 Pittsburgh, Pennsylvania 15229

SHIP TO

DEPARTMENT OF ADMINISTRATION  
 GENERAL SERVICES DIVISION  
 BLDG. 9 - CULTURE & HISTORY  
 1900 KANAWHA BOULEVARD, EAST  
 CHARLESTON, WV  
 25305 304-558-2317

DATE PRINTED	TERMS OF SALE	SHIP VIA	FOB	FREIGHT TERMS
01/14/2009				

BID OPENING DATE: **02/19/2009** BID OPENING TIME **01:30PM**

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
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001	1	LS		906-07		
<p><b>A&amp;E SERVICES: DESIGN OF BLDG#9 CHILLER LOOP CHANGES</b></p> <p><b>EXPRESSION OF INTEREST (EOI)</b></p> <p>THE WEST VIRGINIA PURCHASING DIVISION FOR THE AGENCY, THE WEST VIRGINIA DIVISION OF GENERAL SERVICES, IS SOLICITING EXPRESSIONS OF INTEREST FOR ARCHITECTURAL AND ENGINEERING SERVICES FOR THE CHILLED WATER SYSTEM IN BUILDING 9, LOCATED ON THE WEST VIRGINIA STATE CAPITOL COMPLEX IN CHARLESTON, WEST VIRGINIA PER THE ATTACHED SPECIFICATIONS.</p> <p>TECHNICAL QUESTIONS CONCERNING THIS PROJECT MUST BE SUBMITTED IN WRITING TO KRISTA FERRELL IN THE WEST VIRGINIA PURCHASING DIVISION VIA FAX AT 304-558-4115 OR VIA EMAIL AT KRISTA.S.FERRELL@WV.GOV. DEADLINE FOR ALL TECHNICAL QUESTIONS IS 01/29/2009 AT THE CLOSE OF BUSINESS. ALL TECHNICAL QUESTIONS RECEIVED, IF ANY, WILL BE ADDRESSED BY ADDENDUM AFTER THE DEADLINE.</p> <p>QUESTIONS CONCERNING THE PROCESS BY WHICH A VENDOR MAY SUBMIT AN EXPRESSION OF INTEREST TO THE STATE OF WEST VIRGINIA ARE NOT CONSIDERED TO BE TECHNICAL QUESTIONS AND MAY BE SUBMITTED AT ANY TIME PRIOR TO THE EOI OPENING DATE AND IN ANY FOMAT.</p> <p><b>BANKRUPTCY:</b> IN THE EVENT THE VENDOR/CONTRACTOR FILES FOR BANKRUPTCY PROTECTION, THIS CONTRACT MAY BE</p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE *[Signature]* TELEPHONE (412) 931-8888 DATE February 18, 2009

FILE Principal/Vice President FEIN 251258883 ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

**GENERAL TERMS & CONDITIONS  
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3. All quotations are governed by the *West Virginia Code* and the *Legislative Rules* of the Purchasing Division.

4. Prior to any award, the apparent successful vendor must be properly registered with the Purchasing Division and have paid the required \$125 fee.

5. All services performed or goods delivered under State Purchase Order/Contracts are to be continued for the term of the Purchase Order/Contracts, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise available for these services or goods, this Purchase Order/Contract becomes void and of no effect after June 30.

6. Payment may only be made after the delivery and acceptance of goods or services.

7. Interest may be paid for late payment in accordance with the *West Virginia Code*.

8. Vendor preference will be granted upon written request in accordance with the *West Virginia Code*.

9. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.

10. The Director of Purchasing may cancel any Purchase Order/Contract upon 30 days written notice to the seller.

11. The laws of the State of West Virginia and the *Legislative Rules* of the Purchasing Division shall govern all rights and duties under the Contract, including without limitation the validity of this Purchase Order/Contract.

12. Any reference to automatic renewal is hereby deleted. The Contract may be renewed only upon mutual written agreement of the parties.

13. **BANKRUPTCY:** In the event the vendor/contractor files for bankruptcy protection, this Contract may be deemed null and void, and terminated without further order.

14. **HIPAA BUSINESS ASSOCIATE ADDENDUM:** The West Virginia State Government HIPAA Business Associate Addendum (BAA), approved by the Attorney General, and available online at the Purchasing Division's web site (<http://www.state.wv.us/admin/purchase/vrc/hipaa.htm>) is hereby made part of the agreement. Provided that, the Agency meets the definition of a Cover Entity (45 CFR §160.103) and will be disclosing Protected Health Information (45 CFR §160.103) to the vendor.

15. **WEST VIRGINIA ALCOHOL & DRUG-FREE WORKPLACE ACT:** If this Contract constitutes a public improvement construction contract as set forth in Article 1D, Chapter 21 of the West Virginia Code ("The West Virginia Alcohol and Drug-Free Workplace Act"), then the following language shall hereby become part of this Contract: "The contractor and its subcontractors shall implement and maintain a written drug-free workplace policy in compliance with the West Virginia Alcohol and Drug-Free Workplace Act, as set forth in Article 1D, Chapter 21 of the West Virginia Code. The contractor and its subcontractors shall provide a sworn statement in writing, under the penalties of perjury, that they maintain a valid drug-free work place policy in compliance with the West Virginia and Drug-Free Workplace Act. It is understood and agreed that this Contract shall be cancelled by the awarding authority if the Contractor: 1) Fails to implement its drug-free workplace policy; 2) Fails to provide information regarding implementation of the contractor's drug-free workplace policy at the request of the public authority; or 3) Provides to the public authority false information regarding the contractor's drug-free workplace policy."

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3. Complete all sections of the quotation form.

4. Unit prices shall prevail in case of discrepancy.

5. All quotations are considered F.O.B. destination unless alternate shipping terms are clearly identified in the quotation.

**BID SUBMISSION:** All quotations must be delivered by the bidder to the office listed below prior to the date and time the bid opening. Failure of the bidder to deliver the quotations on time will result in bid disqualifications: Department of Administration, Purchasing Division, 2019 Washington Street East, P.O. Box 50130, Charleston, WV 25305-0130



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

# Request for Quotation

RFQ NUMBER  
**GSD096435**

PAGE  
**2**

ADDRESS CORRESPONDENCE TO ATTENTION OF  
**KRISTA FERRELL  
 304-558-2596**

## RFQ COPY

TYPE NAME/ADDRESS HERE

VENDOR

Tower Engineering  
 115 Evergreen Heights Drive  
 Suite 400  
 Pittsburgh, Pennsylvania 15229

SHIP TO

DEPARTMENT OF ADMINISTRATION  
 GENERAL SERVICES DIVISION  
 BLDG. 9 - CULTURE & HISTORY  
 1900 KANAWHA BOULEVARD, EAST  
 CHARLESTON, WV  
 25305 304-558-2317

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01/14/2009				

OPENING DATE: **02/19/2009** BID OPENING TIME **01:30PM**

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
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DEEMED NULL AND VOID, AND TERMINATED WITHOUT FURTHER ORDER.

**NOTICE**

A SIGNED EOI MUST BE SUBMITTED TO:

DEPARTMENT OF ADMINISTRATION  
 PURCHASING DIVISION  
 BUILDING 15  
 2019 WASHINGTON STREET, EAST  
 CHARLESTON, WV 25305-0130

THE EOI SHOULD CONTAIN THIS INFORMATION ON THE FACE OF THE ENVELOPE OR THE EOI MAY NOT BE CONSIDERED:

SEALED EOI

BUYER: KRISTA FERRELL-FILE 21

EOI. NO.: GSD096435

EOI OPENING DATE: FEBRUARY 19, 2009

EOI OPENING TIME: 1:30 PM

PLEASE PROVIDE A FAX NUMBER IN CASE IT IS NECESSARY TO CONTACT YOU REGARDING YOUR EOI:

(412) 939-2525

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

NATURE	TELEPHONE (412) 931-8888	DATE February 18, 2009
Principal/Vice President	FEIN 251258883	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'



State of West Virginia  
 Department of Administration  
 Purchasing Division  
 2019 Washington Street East  
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 GENERAL SERVICES DIVISION  
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 1900 KANAWHA BOULEVARD, EAST  
 CHARLESTON, WV  
 25305 304-558-2317

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
01/14/2009				

BID OPENING DATE: **02/19/2009** BID OPENING TIME **01:30PM**

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
<p><b>CONTACT PERSON (PLEASE PRINT CLEARLY):</b>            James N. Kosinski, PE</p> <hr style="border-top: 1px dashed black;"/> <p><b>***** THIS IS THE END OF RFQ GSD096435 ***** TOTAL:</b> _____</p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE <i>James N. Kosinski</i>	TELEPHONE (412) 931-8888	DATE February 18, 2009
NAME Principal/Vice President	FEIN 251258883	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

STATE OF WEST VIRGINIA  
Purchasing Division

**PURCHASING AFFIDAVIT**

**VENDOR OWING A DEBT TO THE STATE:**

*West Virginia Code* §5A-3-10a provides that: No contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and the debt owed is an amount greater than one thousand dollars in the aggregate.

**PUBLIC IMPROVEMENT CONTRACTS & DRUG-FREE WORKPLACE ACT:**

If this is a solicitation for a public improvement construction contract, the vendor, by its signature below, affirms that it has a written plan for a drug-free workplace policy in compliance with Article 1D, Chapter 21 of the *West Virginia Code*. The vendor must make said affirmation with its bid submission. Further, public improvement construction contract may not be awarded to a vendor who does not have a written plan for a drug-free workplace policy in compliance with Article 1D, Chapter 21 of the *West Virginia Code* and who has not submitted that plan to the appropriate contracting authority in timely fashion. For a vendor who is a subcontractor, compliance with Section 5, Article 1D, Chapter 21 of the *West Virginia Code* may take place before their work on the public improvement is begun.

**ANTITRUST:**

In submitting a bid to any agency for the state of West Virginia, the bidder offers and agrees that if the bid is accepted the bidder will convey, sell, assign or transfer to the state of West Virginia all rights, title and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the state of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the state of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to the bidder.

I certify that this bid is made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership or person or entity submitting a bid for the same materials, supplies, equipment or services and is in all respects fair and without collusion or fraud. I further certify that I am authorized to sign the certification on behalf of the bidder or this bid.

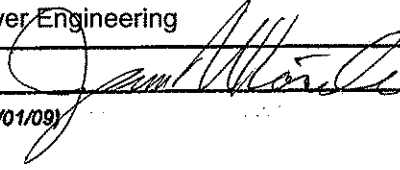
**LICENSING:**

Vendors must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, West Virginia Insurance Commission, or any other state agencies or political subdivision. Furthermore, the vendor must provide all necessary releases to obtain information to enable the Director or spending unit to verify that the vendor is licensed and in good standing with the above entities.

**CONFIDENTIALITY:**

The vendor agrees that he or she will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the agency's policies, procedures and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in <http://www.state.wv.us/admin/purchase/privacy/noticeConfidentiality.pdf>.

Under penalty of law for false swearing (*West Virginia Code* §61-5-3), It is hereby certified that the vendor affirms and acknowledges the information in this affidavit and is in compliance with the requirements as stated.

Vendor's Name: Tower Engineering  
Authorized Signature:  Date: February 18, 2009  
*Purchasing Affidavit (Revised 01/01/09)*



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

# Request for Quotation

RFQ NUMBER  
**GSD096435**

PAGE  
**1**

ADDRESS CORRESPONDENCE TO ATTENTION OF  
**KRISTA FERRELL  
 304-558-2596**

VENDOR

**RFQ COPY  
 TYPE NAME/ADDRESS HERE**

Tower Engineering  
 115 Evergreen Heights Drive  
 Suite 400  
 Pittsburgh, Pennsylvania 15229

SHIP TO

DEPARTMENT OF ADMINISTRATION  
 GENERAL SERVICES DIVISION  
 BLDG. 9 - CULTURE & HISTORY  
 1900 KANAWHA BOULEVARD, EAST  
 CHARLESTON, WV  
 25305 304-558-2317

DATE PRINTED	TERMS OF SALE	SHIP VIA	FOB	FREIGHT TERMS
02/02/2009				

ID OPENING DATE: **02/19/2009** BID OPENING TIME **01:30PM**

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
<b>ADDENDUM NO. 1</b>						
THIS ADDENDUM IS ISSUED TO ANSWER ALL TECHNICAL QUESTIONS RECEIVED PRIOR TO THE JANUARY 29, 2009 DEADLINE.						
BID OPENING DATE REMAINS: 02/19/2009 BID OPENING TIME REMAINS: 1:30 PM						
***** ADDENDUM NO. 1 *****						
001	1	LS		906-07		
A&E SERVICES: DESIGN OF BLDG#9 CHILLER LOOP CHANGES						
***** THIS IS THE END OF RFQ GSD096435 ***** TOTAL: _____						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE <i>[Signature]</i>	TELEPHONE (412) 931-8888	DATE February 18, 2009
TITLE Principal/Vice President	FEIN 251258883	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

**EOI#GSD096435**  
**Chiller Renovations, Bldg#9 Cultural Center**

**Technical Questions & Answers**

**Question#1: May firms wishing to submit proposals visit the project site to examine existing conditions? Who should be contacted and what are the best times to visit?**

**Answer#1: Site visits may be arranged by contacting Scott Mason, General Services Division Engineering Section, at (304)558-0897.**



State of West Virginia  
 Department of Administration  
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 CHARLESTON, WV  
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DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
02/09/2009				

OPENING DATE: **02/19/2009** BID OPENING TIME **01:30PM**

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
				<b>ADDENDUM NO. 2</b>		
				THIS ADDENDUM IS ISSUED TO DELETE SECTION 3.1 GENERAL REQUIREMENTS IN ITS ENTIRETY AND TO ADD THE FOLLOWING LANGUAGE:		
				"3.1 GENERAL REQUIREMENTS: FIRMS AR TO BE WV LICENSED ARCHITECTURAL/ENGINEERING FIRMS (A/E) AND MUST BE FAMILIAR WITH AND HAVE A SUCCESSFUL TRACK RECORD OF PROVIDING ENGINEERING SERVICES INVOLVING CHILLED WATER LOOPS. FIRMS MUST ALSO PROVIDE MECHANICAL, ELECTRICAL, AND STRUCTURAL ENGINEERING SERVICE FOR BID DOCUMENTS TO UPGRADE BUILDING #9 WITH NEW CHILLERS AND (2) STANDBY BOILERS."		
				EOI OPENING DATE REMAINS: 02/19/2009 EOI OPENING TIME REMAISN: 1:30 PM		
				***** END ADDENDUM NO. 2 *****		
101		LS		906-07		
				A&E SERVICES: DESIGN OF BLDG#9 CHILLER LOOP CHANGES		

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

NATURE	TELEPHONE	DATE
<i>[Signature]</i>	(412) 931-8888	February 18, 2009
LE Principal/Vice President	FEIN 251258883	ADDRESS CHANGES TO BE NOTED ABOVE

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2. **SPECIFICATIONS:** Items offered must be in compliance with the specifications. Any deviation from the specifications must be clearly indicated by the bidder. Alternates offered by the bidder as **EQUAL** to the specifications must be clearly defined. A bidder offering an alternate should attach complete specifications and literature to the bid. The Purchasing Division may waive minor deviations to specifications.
3. Complete all sections of the quotation form.
4. Unit prices shall prevail in case of discrepancy.
5. All quotations are considered F.O.B. destination unless alternate shipping terms are clearly identified in the quotation.  
**BID SUBMISSION:** All quotations must be delivered by the bidder to the office listed below prior to the date and time the bid opening. Failure of the bidder to deliver the quotations on time will result in bid disqualifications: Department of Administration, Purchasing Division, 2019 Washington Street East, P.O. Box 50130, Charleston, WV 25305-0130

## Legal Proceedings

Tower Engineering provided engineering services for the Regional Learning Alliance building located in Cranberry Township, Pennsylvania. During the winter of 2007, a hot water coil located within a rooftop mounted air handling unit burst, causing \$750,000 damage within the building. A review of the control system and air handling unit showed that modifications had been made to the unit immediately prior to the event. These changes included the following:

- The air handling unit's freezestat was overridden (jumpered)
- The air handling unit's outside air damper was wired open
- The hot water system's operating temperature was dropped
- The hot water valve serving the air handling unit was "ordered" closed

While we feel that these modifications clearly remove Tower Engineering from any financial responsibility relating to this event, the owner's insurance company has chosen to specifically name every design professional and contractor involved in the project.

Tower Engineering Qualifications



## **Why Tower Engineering?**

### **Quality Service**

Through the years, Tower Engineering has built a reputation for quality service – not only in the expertise of our design, but also in our attentiveness to the client's needs. This service continues from the earliest design meetings through to the commissioning of the systems. We work with each client's operating personnel and the contractor to ensure that systems are installed in accordance with plans and specifications; that they operate properly in relationship with their subsystems; that they operate through a wide range of operating conditions as well as design conditions; and, that the operating and maintenance personnel have been properly trained. Tower Engineering enjoys a repeat client rate of more than 80% - a source of considerable pride. We're confident of our reputation and expertise. And, our clients are confident that they will receive the most efficient engineering services.

### **Past Performance/Experience**

Tower Engineering recognizes that today's buildings require the full attention of the design team to conceive and create mechanical, electrical and plumbing/fire protection systems which provide the best environmental climate, economy of operation and leading edge system solutions that will extend the life and utility of a structure for years to come. We meet this challenge with fundamentally sound engineering techniques applied to the latest proven concepts, to furnish outstanding results for our clients. With experience nurtured by the successful completion of many projects – small and large – in the educational, governmental, commercial and institutional markets, our staff has gained a reputation for producing innovative yet practical designs. Tower Engineering has experience providing engineering design and commissioning services on numerous projects. Our extensive design experience insures that we will be familiar with all aspects of each project's mechanical and electrical design.

Tower Engineering has provided engineering services for a multitude of chiller projects for commercial, educational and institutional facilities. Representative projects are included in the section entitled "Similar Experience."

### **Personal Approach to Project Design**

With 30 full time employees, we fall into the category of a medium-sized engineering firm. We feel that this provides a number of significant advantages. Unlike a small firm, our office can easily accommodate the rigorous design schedules of a major project without significant disruption. Unlike a large firm, Tower Engineering stresses active principal involvement on all projects and does not require the involvement of "middle-level" employees whose responsibility is to convey information between the client (WV) and design engineers. Our principals are not devoted primarily to marketing activities, allowing ALL projects to include significant design participation of at least one of our three principals.

## **Experience with the design of Government-owned Facilities**

Tower Engineering has vast experience providing services for government-owned facilities. We understand the importance of meeting our client's needs without exceeding the project's budget. Tower Engineering is currently providing services for design and commissioning of the Department of Energy's new record storage facility in Morgantown; as well as multiple projects for a classified client in Rocket Center, West Virginia; and a new Army National Guard facility in Fairmont.

## **Familiarity With West Virginia**

Tower Engineering has a long history of providing engineering services in West Virginia. For more than five decades, educational, commercial and institutional facilities owners have depended on us to engineer mechanical and electrical systems which are effective, as well as efficient.

During the past two years alone, 34% of our project workload has been in West Virginia. In addition to the projects mentioned above, Tower Engineering is providing mechanical and electrical systems engineering for boards of education in eight counties, as well as for West Virginia University, Fairmont State University, Canaan Valley Institute, Allegheny Energy's new Operations Center, and other clients throughout the state. We are very familiar with the code issues that apply to construction projects in West Virginia and have excellent working relationships with major mechanical and electrical contractors who routinely bid projects located in the state.

## **Expertise of Our Sub-consultants**

Tower Engineering has carefully selected our subconsultants for this project based on a number of critical factors. Perfido Weiskopf Wagstaff Goettel, our architectural consultant has more than 30 years of experience providing creative, thoughtful solutions to complex problems. They are currently providing services for the renovation of Building No. 3 of the West Virginia State Capitol Complex.

Taylor Structural Engineers, Inc., our structural engineering consultant for this project, has provided services for more than 2000 projects since its founding in 1996. We have worked with Taylor Structural Engineers on several projects including multiple projects for the McKeesport Housing Authority, HVAC renovation at Tullio Convention Center in Erie, Pennsylvania. We are currently working with Taylor Structural Engineers on a new recreation center for Upper Saint Clair Township. Based on our past experience working with Taylor Structural, we are confident of their abilities to provide services for this project.

## **Commissioning**

Tower Engineering's credentials including building commissioning experience. While commissioning is not a stated responsibility in the scope of work for this project, Tower Engineering's commissioning capability offers the potential of improved construction administration for your project. Issues related to mechanical systems can have an impact on owner satisfaction and operating costs far beyond project closeout. Commissioning activities simply improve an owner's overall satisfaction with mechanical systems by ensuring that the intended systems are installed as specified, thereby reducing occupant complaints and improving energy efficiency. We have been providing commissioning services since 2000 on projects engineered by Tower Engineering. Recently, by request, we have begun to provide commissioning services on projects designed by other consulting engineers.



At Tower Engineering, our goal is not to just meet our clients' needs....but to exceed their expectations.

**Tower Engineering** has been providing innovative mechanical and electrical engineering solutions and unparalleled client service since 1931.

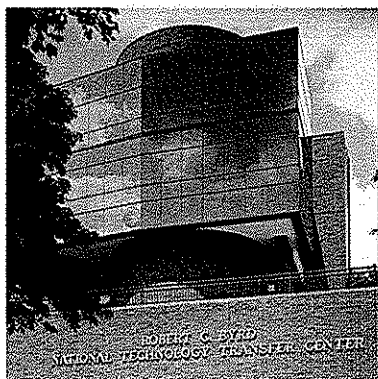
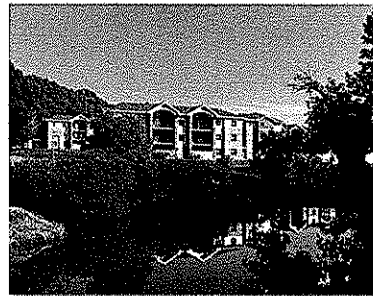
Primary markets of the firm include educational, health care, environments for the aging, and commercial renovations and new construction.

Tower Engineering's highly-trained staff of project managers, designers, and technical support personnel is capable of providing consulting services for every type of project - from a small, single-family residence to a high tech research facility incorporating redundant mechanical and electrical systems, DDC energy management and thermal storage.

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

Mechanical analysis includes energy economy analysis, thermal storage analysis, heating and cooling load calculations, refrigerant piping design, water piping design, and ductwork design.

Our professional staff utilizes computer selection of air handling units, coils, pumps, terminal devices, fans, cooling towers, chillers, heat exchangers, kitchen hoods, hydronic and steam specialties, humidification equipment and heat recovery equipment.



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Tower Engineering

## Specific Engineering Services

### HVAC

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

### Electrical

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

### Telecommunications

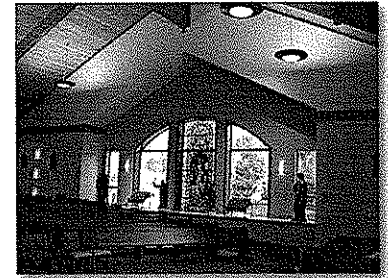
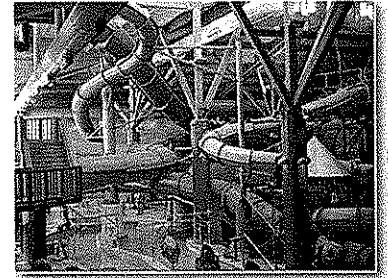
- Voice communication systems
- Data network systems

### Plumbing

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

### Fire Protection

- Standpipe and sprinkler systems
- Fire protection systems



## Our Design Experience

- Agricultural & Science Buildings
- Airport Terminals & Hangars
- Athletic Facilities & Stadiums
- Auditoriums & Theaters
- Call Centers
- Classrooms
- Clean Rooms & Special Environments
- Data Centers
- Dining Halls
- Dormitory Buildings
- Environments for the Aging
- High-Rise & Low-Rise Office Buildings
- Historic Preservation & Adaptive Reuse
- Hotels/Motels
- Judicial & Courtroom Facilities
- Manufacturing & Industrial
- Movie Theaters
- Municipal Complexes

- Museums, Galleries & Libraries
- Nuclear Facilities
- Outpatient & Hospital Facilities
- Parking Garages
- Postal Facilities
- Prisons & Correctional Institutions
- Public Safety Buildings
- Recreational Facilities
- Religious Facilities
- Research/Laboratories
- Residential & Multi-Unit Housing
- Retail & Shopping Centers
- Schools
- Student Unions
- TV/Radio Stations
- Vehicle Maintenance Facilities
- Warehouses & Depots



Tower Engineering maintains full CAD capabilities utilizing AutoCAD Release 2008, which is compatible with most micro and mini based computer systems. Our AutoCAD software has been modified in-house to further enhance productivity per discipline. Firm-wide CAD standards are also in place to ensure uniformity.

**Tower Engineering** has provided mechanical and electrical consulting engineering services for numerous Government-owned facilities. With seven decades of experience, our firm knows the importance of meeting the client's needs without exceeding the project's budget.

Thoroughly familiar with current government and military standards, our firm has provided engineering services for the following government-owned facilities:

### **Federal Government**

- William S. Moorhead Federal Office Building, Pittsburgh, PA
- Department of Labor Job Corps Center, Pittsburgh, PA
- Butler VA Hospital, Butler, PA
- Department of Labor Job Corps Medical Center, Pittsburgh, PA
- U.S. Army Corps of Engineers Lab Ventilation, Pittsburgh, PA
- U.S. Army Corps of Engineers, Neville Island, PA
- U.S. Army National Guard Readiness Center, Connellsville, PA
- U.S. Army Reserve Center, Jane Lew, WV
- U.S. Army Reserve Center, Clarksburg, WV
- IRS Liberty Center Tenant Fitup, Pittsburgh, PA
- INS Application Support Center, Pittsburgh, PA
- VA Medical Center Pittsburgh, PA (multiple)

### **United States Postal Service**

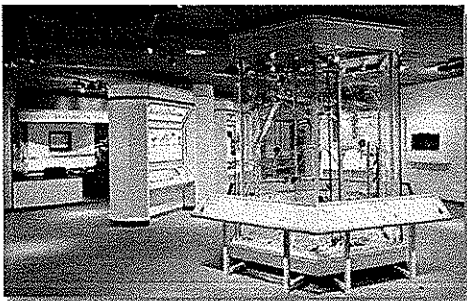
- McKnight Road, Pittsburgh, PA
- Clairton, PA
- Monongahela, PA
- Northside, Pittsburgh, PA
- Grant Street, Pittsburgh, PA
- Rochester, PA
- Bulk Mail Handling Facility, Pittsburgh, PA



New Fairmont, WV Parking Garage



Mt. Lebanon, PA Transportation Center



PA Capitol Welcome Center

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Government-Owned Facilities

## State Government

- State Police Building, PA
- Capitol Building Welcome Center, PA
- Tygart Lake State Park Lodge Addition, WV
- Louis J. Tullio Convention Center (Erie), PA
- Twin Falls Resort State Park (WV) Addition
- DER Regional Offices, PA
- DER Lab Renovation, PA
- Ebensburg Center HVAC Renovation, PA
- Buckingman Protection Custody Facility, PA
- HRS Computer Room, PA
- Department of Agriculture Lab, PA
- Capitol Science & Cultural Center, WV

## Local Government

- Beaver County Courthouse & Annex
- Beaver County Ice Arena Renovations
- Bellevue Borough Building Study
- Bethel Park Community Center
- Cambridge Springs PA Library
- Cambridge OH Water Treatment Plant
- City County Building Pittsburgh PA (multiple projects)
- City Hall Pittsburgh PA
- City of Pittsburgh Swimming Pools
- City of Pittsburgh EOC 911
- City of Pittsburgh Warehouse
- Public Auditorium Authority Civic Arena (multiple projects)
- Cranberry Township Municipal Complex
- Cranberry Volunteer Fire Co. Hall
- Dormont Borough Pool Complex Feasibility Study
- Eighth Avenue Streetscape Phase IV
- Erie Fire Houses
- Erie Senior Citizen's Center
- Erie Veteran's Stadium Renovation
- Fairmont Parking Garage, WV
- Fairmont Public Safety Building, WV

- Field Avenue Recreation Park Aspinwall PA
- Franklin Park Municipal Building
- Franklin Township Municipal Sanitation Authority Plant Upgrade
- Freeport Borough Building
- Greater Pittsburgh International Airport Police Station & Noise Abatement Study
- Green Tree Municipal Building
- Greensburg County Building
- Hampton Twp Municipal Bldgs Master Planning
- Kennedy Township Park
- Manatee County FL Office Building
- McCandless Municipal Building
- Monroeville Municipal Building
- Moon Township Water Authority
- Mt. Lebanon Parking Garage
- Mt. Troy Volunteer Fire Co.
- New Stanton Water Treatment
- Niagara Place Museum Study
- Penn Hills Recreation Center
- Penn Township Civic Center
- Penn Township Municipal Complex
- Pittsburgh Parking Authority (multiple projects)
- Pittsburgh Housing Flower Street
- Racoon Creek State Park
- Ross Township Municipal Complex
- Seville Volunteer Fire Department
- South Charleston Community Center
- South Park Municipal Buildings
- South Strabane Township Municipal Building Renovations
- Stowe Senior Citizens' Center
- Three Rivers Stadium Renovations
- Vanport Municipal Authority Electrical Room
- W.A.V.E. Natatorium
- Western Ave. Streetscape Improvements
- Westmoreland Housing Authority



Tower Engineering's experience includes the Fairmont Public Safety Building (*left*), and Pine Townships's Community Center (*right*)



Tower Engineering has a long history of providing engineering services in West Virginia. For more than five decades, educational, commercial and institutional facilities owners have depended on us to engineer mechanical and electrical systems which are effective, as well as efficient.

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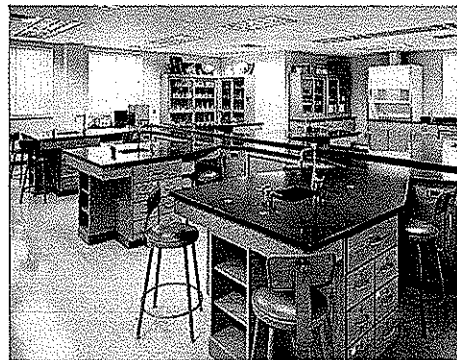


## Recent Projects in West Virginia Have Included:

- Airport Renovations
- Research/Laboratories
- K-12 Schools
- Commercial Offices
- Community Centers
- Retail Buildings
- Stadiums & Athletic Buildings
- Military Training Facilities and other Government-Owned Facilities
- Nursing Homes
- Light Industrial and Warehouses

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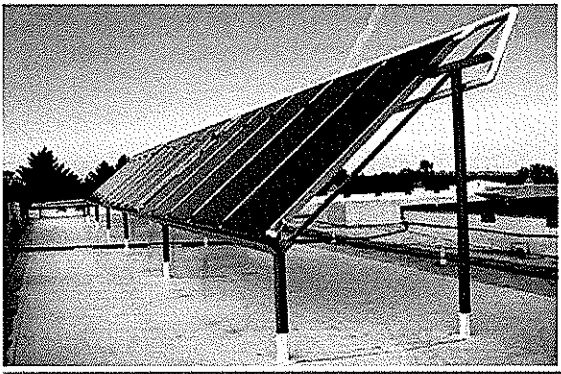
Engineering West Virginia



Working together with our clients, Tower Engineering takes great pride in implementing environmentally conscious solutions to building issues. To sustain our environment, we design building systems that use material, energy and water resources efficiently, minimize site impacts and address health issues relating to the indoor environment.

Over the last decade, various groups have worked to develop strategies to promote and facilitate the design of sustainable, high performance buildings. One such organization, The **U.S. Green Building Council**, has created a nationally recognized certification process for evaluating sustainable and high performance buildings, a program called "**Leadership in Energy and Environmental Design**," commonly known by its acronym "**LEED**". In addition to being a member of the U.S. Green Building Council (USGBC), Tower Engineering's staff includes LEED accredited professionals.

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



Our LEED design experience includes the Felician Sister's Motherhouse (left) which received a Gold rating and J.S. Wilson Middle school (below left) which was designed to a LEED Silver rating and included such sustainable features as geothermal heating and cooling.



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LEED™ Rated Design



### Felician Sisters' Motherhouse Coraopolis, Pennsylvania

- Super-high efficiency modular boilers to maintain 60 degrees F low-end water temperature.
- Carefully sized individual heat pumps to provide adequate compressor runtimes to ensure summer dehumidification and cooling without short cycling.
- Specification of premium efficient motors for pumps and larger RTU fans.
- Specification of Ventilation Heat Pump Rooftop Units with factory-installed energy recovery sections.
- Utilization of carbon dioxide sensors to reduce outside air quantities in multi-use spaces when not fully occupied.
- Specification of fully automated temperature controls system to provide computerized monitoring and control of mechanical equipment for maximum energy savings and systems optimization.
- Engineered lighting levels to exceed ASHRAE 90.1-1999 using the most efficient lamp and fixture combinations.

*The Project Team has achieved a  
LEED™ Gold rating.*

### LEED Project Experience:

- Felician Sisters Motherhouse (Gold)
- Three Rivers Rowing Association Boat Storage & Maintenance Building (Certified)
- Carnegie Mellon University Henderson House Renovations (Silver)
- Carnegie Mellon University Posner Conference Center Rare Books Room (Certified)
- Pittsburgh Children's Museum Renovation & Expansion (Silver)
- Regional Learning Alliance at Cranberry Woods (Silver)
- Berkeley County Board of Education New Spring Mills Primary School (Silver)
- Canaan Valley Institute New Headquarters/Education Building (Certified)
- Department of Energy Morgantown Record Storage (Gold)

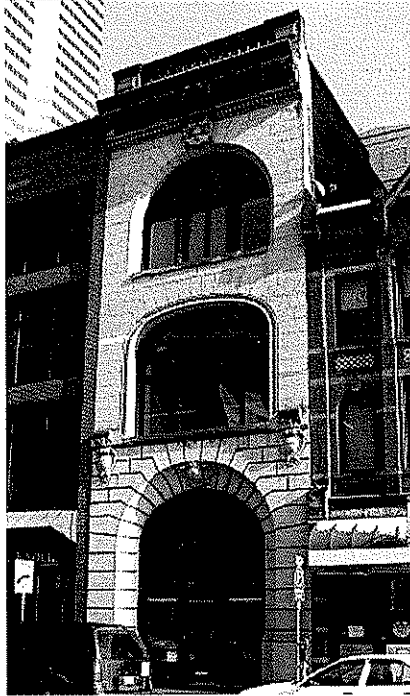
The following projects were designed in accordance with the LEED rating system, but ultimately did not pursue a LEED certification:

- Millcreek School District J.S. Wilson Middle
- Corry School District New Elementary School
- Holy Sepulcher Parish New Church
- National Guard Stryker Center
- North Hills School District McIntyre & Highcliff Elementary Schools
- Pine Richland School District New Upper Elementary School
- Pine Township Recreation Center
- Pittsburgh Children's Home
- Sisters of St. Joseph New Office Building
- Southwest Butler County YMCA (Cranberry)
- Upper St. Clair Community Center
- Watson Institute, Craig Academy



## About

Perfido Weiskopf Wagstaff + Goettel



We are a design firm practicing architecture, planning, and urban design. We were founded in 1975 by Leonard Perfido, now Emeritus. Today we are led by three Principals; Alan Weiskopf, AIA, Sheldon Goettel, AIA, and Kevin Wagstaff, AIA. The full staff includes 9 Registered Architects, 8 Graduate Intern Architects, and 5 business support professionals.

In more than 30 years of practice we have developed a reputation for creative, thoughtful solutions to complex problems, most often involving college buildings, housing of various types, and historic structures. Accordingly we are focused on three main areas of specialization- facilities for higher education, multi-family residential design (including affordable and market rate housing, student housing, senior housing, and luxury condominiums), and the rehabilitation and preservation of historic architecture. We also design hotels, theatres, galleries, stores, and parking structures. Repeat clients include private businesses, institutions, public/private partnerships, and government.

Our work is guided by 3 principles:

**Form-making** - We begin with the owner's needs and goals, the project and building type, and the surrounding context. Within these variables we find compelling reasons for some buildings to be contemporary, others traditional, and we work in many styles. What we find constant is the need to bring great usefulness, durability, and architectural clarity to each design. We therefore emphasize the 'craft' of architecture, and believe this approach yields results that are more authentic than work defined by allegiance to any one style.

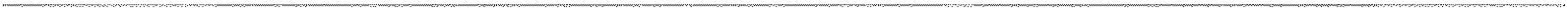
**Interaction** - We pay great attention to the connections between buildings and their surroundings, and find that each commission presents unique opportunities. It might be the prospect of a new building forming a court with existing structures, or a chance for a dialogue between new and historic buildings, or an alignment of paths that could connect to a larger setting. It is always our goal that our buildings have an uplifting effect on their surroundings.

**Integrated Design** - We work in teams that follow projects from the first stages of planning through the completion of construction. The teams include all the necessary disciplines in a design process that is collaborative and highly interactive. Each team member understands the effect of their contributions on the design and the coordination of their work with others. The results are durable high performance buildings that are constructed on budget, with low operating and environmental costs, and that provide memorable settings for their occupants.

Perfido Weiskopf Wagstaff + Goettel is located in downtown Pittsburgh in a former City firehouse that dates from the 1890s. The high-ceilinged engine and crew rooms serve as our studios where we work together in an open office environment. We are equipped with state-of-the-art technology, utilizing networked PCs, and we are continually improving that technology in synchrony with new innovations in hardware and software. Depending on client need, the firm can use 'Building Information Modeling' (BIM) design tools, via *Revit* software, or the more traditional *AutoCad* software. In either case we use 3-dimensional modeling as a design tool, and we prepare photo-realistic images and virtual tours of design proposals.



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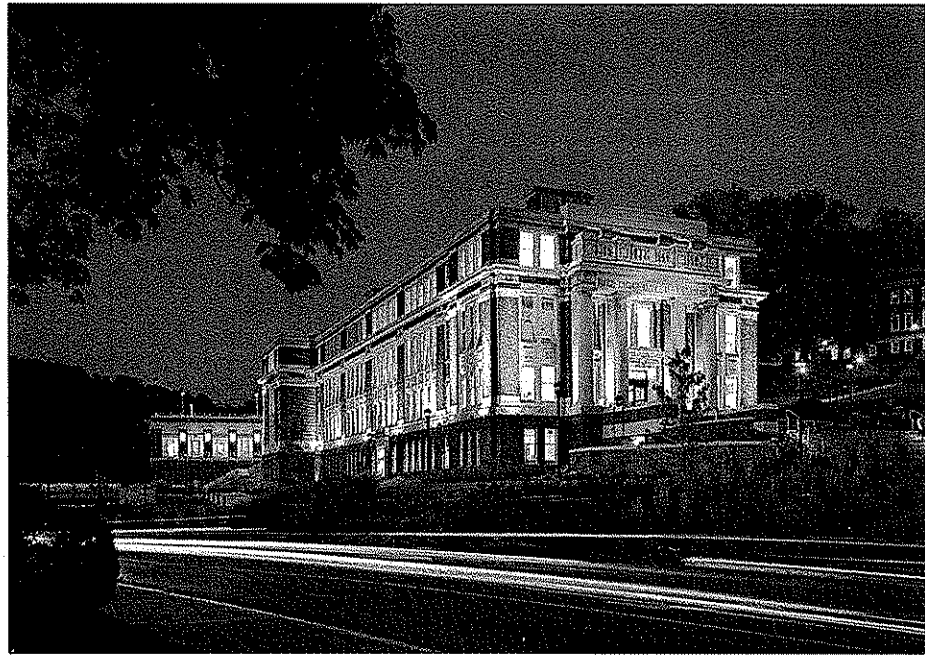
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# Oglebay Hall & Ming Hsieh Hall, West Virginia University

Morgantown, West Virginia **Perfido Weiskopf Wagstaff + Goettel**

**Oglebay Hall Size**  
55,000 s.f. renovation  
**Ming Hsieh Hall Size**  
20,000 new building  
**Construction Cost**  
\$ 20,000,000 combined  
**Firm Responsibility**  
Programming  
Architectural Design  
Contract Documents  
Contract Administration  
**Completion Date** 2008  
**Client**  
West Virginia University  
**Certifications**  
National Register Listed  
LEED Certification Pending



## Campus Paths and Places

When classes change, as many as 3000 students are moving through the two buildings and the site. Consequently, the design maximizes ways in and out of both buildings, capitalizing on the slope of the site to create "at grade" entrances at four different levels. Paths are organized to link to the existing patterns of movement, integrating stairs and bridges to navigate the grade changes. Places are provided for students to linger and gather. An oval plaza at the front of Oglebay Hall serves memorial functions for the University and incorporates a mast from the USS West Virginia. A terrace between the buildings becomes an intimate outdoor room with a view.

## Vehicular Access, Conflict and Parking

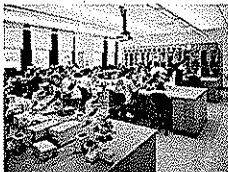
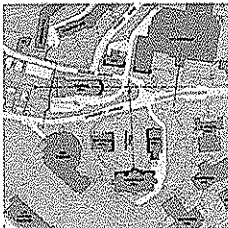
By relocating surface parking to the roof of Ming Hsieh Hall and rerouting the service entrance, fragmented pedestrian paths were stitched together and impervious surface area was reduced despite the construction of a new building. A pedestrian bridge crosses University Avenue alleviating the conflict between students and heavy arterial traffic.

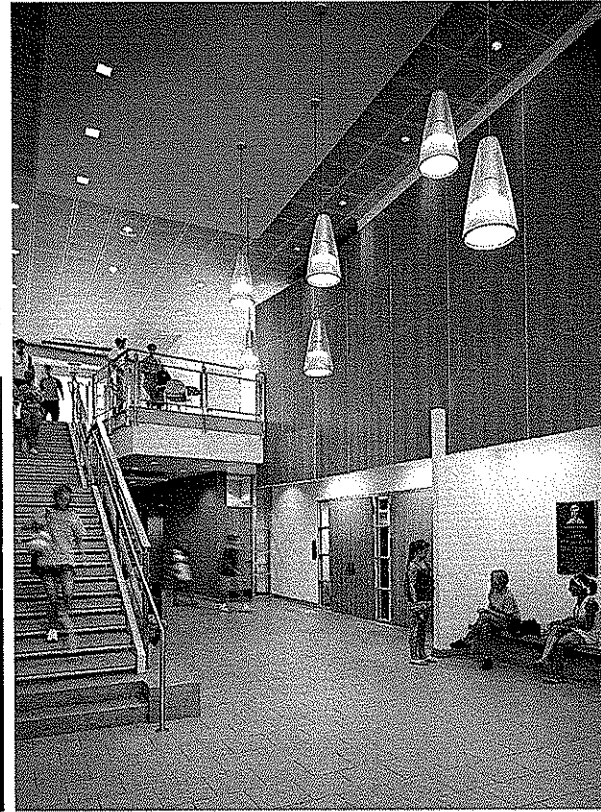
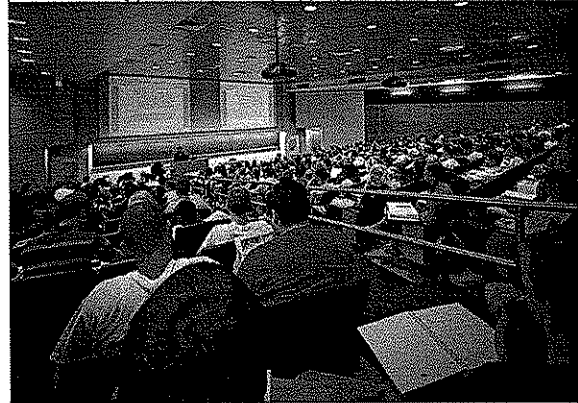
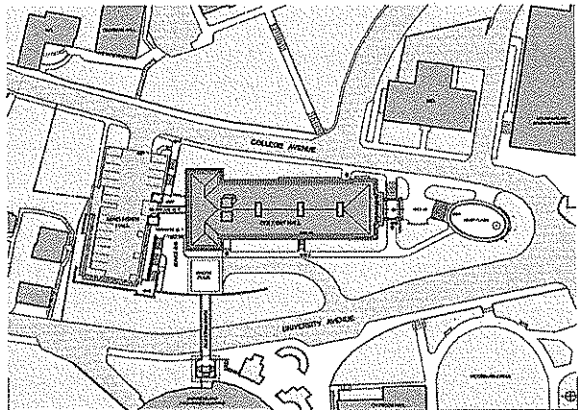
## Oglebay Hall - Historic Rehabilitation

The National Register listed Beaux Arts classroom building was designed by architect Paul Davis and built in 1917. The vacant deteriorated building was stripped to its masonry shell and wood frame structure. The brick, limestone and terra-cotta exterior was restored and the interior was completely refitted with state-of-art classrooms, office and laboratories. The top two floors are now the home of WVU's Forensic and Investigative Science Program and contain high technology labs including Mitochondrial DNA labs. The lower two floors contain a mix of general purpose classrooms, labs and support spaces. Intensive mechanical systems were integrated into the building utilizing the existing attic and ventilation chimneys avoiding any impact on the building exterior.

## Ming Hsieh Hall - Expanded Classroom Capacity

A new classroom building was built to increase capacity for lower level classes in the downtown campus. Ming Hsieh Hall occupies a previously vacant slice of land behind Oglebay Hall with a grade change of over 50' from College Avenue down to University Avenue. The building is organized around a double height gathering space with two large, technology intensive lecture halls built into the hillside. The new building has its own form and identity while at the same time playing a supporting role in the ensemble of new and old.

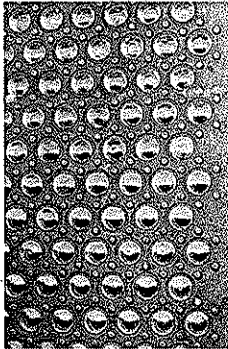




## 575 Broadway

New York, New York Perfido Weiskopf Wagstaff + Goettel

**Size** 160,000 s.f.  
**Construction Cost**  
\$ 10,800,000  
**Firm Responsibility**  
Programming  
Zoning Approvals  
Historic Review Approvals  
Historic Restoration  
Contract Documents  
Contract Administration  
**Completion Date** 1989  
**Client**  
569 Broadway Associates  
**Award**  
New York City Land-  
marks Preservation  
Commission,  
Certificate of Merit



575 Broadway is a six-story, brick-and-stone, commercial loft building located in Soho's Cast Iron Historic District, in New York City. It was commissioned by John Jacob Astor III and constructed between 1881 and 1882, on the site of the original Astor estate. Each floor is 20,000 square feet gross, giving the building a total area of 160,000 square feet. The entire building – offices, galleries, and retail space – has undergone comprehensive rehabilitation. The first and second floors, along with portions of the third and fourth and the basement, were originally leased by the Guggenheim to house their Soho museum, offices, and cafe.

The scope of the interior renovation included a new building core and the replacement of all HVAC, electrical, and plumbing systems. The new HVAC system was designed using state-of-the-art absorption boiler/chiller equipment. This system has the advantage of generating chilled water using only natural gas, easing electrical demands on the building and giving it a major advantage during New York's critical peak summer months.

Existing conditions and all elements of the original construction were carefully documented, and storefront profiles were measured in great detail in order to replicate – as much as possible – original work that previous renovations had destroyed or obscured. The building's original colors were determined by analysis of its painting history. While the main focus of the exterior design was restoration of the original configuration, two new areaway stairs were developed for the Mercer Street side to permit direct access to the basement level, a half level below the sidewalk. Sidewalk windows and rehabilitated sidewalk vault covers bring natural light to the basement.



# ***Taylor Structural Engineers, Inc.***

2275 Swallow Hill Road, Building 100, Pittsburgh, PA 15220 / Phone (412) 722-0880 / Fax (412) 722-0887

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## **COMPANY PROFILE**

***Taylor Structural Engineers, Inc.*** was established in February 1996 to provide high quality structural engineering services to clients working in the institutional, commercial, multiple unit housing, and light industrial building industry. ***TSE*** has been involved in more than 2,000 projects to date, with the vast majority of our work being focused on the renovation and new construction of public schools, universities, student housing facilities, churches, hospitals, office buildings, retail centers, and parking facilities.

***TSE*** maintains structural expertise in virtually all types of building construction including steel (conventional, composite, and light-gage), concrete (cast-in-place, precast, and post-tension), masonry, timber, deep foundations, and the restoration of deteriorated and historic structures.

We take great pride in the fact that our business has been built largely on client referrals. Our client base includes architects, developers, contractors, and owners. Our goal of providing a high level of service to our clients has been recognized and rewarded with respect and loyalty throughout the region.

***Taylor Structural Engineers*** has Professional Engineers currently licensed to practice structural engineering in ten states, including Pennsylvania, Ohio, West Virginia, Virginia, Maryland, New York, New Jersey, Michigan, Connecticut, and North Carolina. While the majority of our projects are located within 300 miles of Pittsburgh, we have maintained the flexibility to serve our clients throughout a much larger region of the country.

**State of West Virginia  
Department of Administration**

**Principal-in-Charge  
Tower Engineering**

**James N. Kosinski, PE**

**Engineering  
Tower Engineering**

**Thomas J. Gorski, PE - HVAC  
Michael S. Plummer, PE - Plumbing  
Stephen J. Kisak, PE - Electrical**

**Structural Engineering  
Taylor Structural Engineers, Inc.**

**Pamela L. Holcomb, PE  
Brian D. Hermiller, PE  
Dirk A. Taylor, PE**

**Architectural Services  
Perfido Weiskopf Wagstaff + Goettel**

**Alan Weiskopf, AIA  
Joe Filar, AIA**

*Tower Engineering Qualifications*





## EDUCATION

Bachelor Architectural Engineering  
Penn State University  
1989

## REGISTRATION

PE, Pennsylvania  
PE-045741-E

PE, West Virginia  
PE, New York  
PE, Maryland  
NCEES Registered

## AFFILIATION

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

## JAMES N. KOSINSKI, P.E.

*Principal, Vice President*  
*Senior Project Manager, Mechanical Engineering*

Mr. Kosinski has (19) years of experience as a mechanical engineer, primarily responsible for the design of HVAC systems and their components for hospitals, schools, universities, laboratories, office buildings, and commercial and light industrial facilities. He has experience with the design of numerous types of HVAC systems, including constant and variable air volume air handling, geothermal heat pump and exhaust systems; chilled water and hot water; electric/electronic, pneumatic and DDC control systems.

Mr. Kosinski's design responsibilities include load calculations, equipment selection, system layout, project specifications, cost estimates, direction of project drafting efforts, coordination with other engineering disciplines, and construction administration. Additional responsibilities include system analysis and energy studies, client contact, and project management and scheduling. He has performed energy conservation analyses, evaluated HVAC system performance, and justified the installation of DDC control systems and other energy saving measures.

As a Mechanical Engineering Group Leader, Mr. Kosinski coordinates the efforts of a team of staff engineers, designers and CAD operators.

## REPRESENTATIVE EXPERIENCE

**PNC Bank, N.A., Pittsburgh, Pennsylvania**  
One PNC Plaza Chilled Water Plant Study and Design  
Two PNC Plaza Boiler Replacement

**Allegheny College, Meadville, Pennsylvania**  
Hulings Hall Heating System Upgrade

**University of Pittsburgh, Pittsburgh, Pennsylvania**  
New Upper Campus Housing

**Beaver County, Pennsylvania**  
Ice Area Chiller System Study

**Fairmont State University, Fairmont, West Virginia**  
Clarksburg Center Chiller Study

**General McLane School District, Edinboro, Pennsylvania**  
Edinboro Elementary Boiler Replacement

**Fairmont, West Virginia**  
Fairmont Public Safety Building

**Collington SeniorCare, Prince George's County, Maryland**  
Life Care Community, Multiple Renovations/New Construction



## EDUCATION

BS, Mechanical Engineering  
Penn State University  
1982

## REGISTRATION

PE, Pennsylvania  
PE-040568-E

PE, West Virginia  
PE-11973

PE, New York

NCEES Registration

## AFFILIATION

American Society of Heating,  
Refrigeration & Air Conditioning  
Engineers (ASHRAE)  
Pittsburgh Chapter  
Past President

## THOMAS J. GORSKI, P.E.

*Principal, President  
Mechanical Engineering Department Head*

Mr. Gorski has twenty-six (26) years of experience as a mechanical engineer. His primary responsibilities are the design of HVAC systems and their components for schools, universities, commercial and light industrial office buildings, laboratory buildings, health care facilities and military facilities. He has designed HVAC systems including constant and variable air volume, air handling and exhaust systems; chilled water and hot water systems and steam distribution systems; electric/electronic control, pneumatic control and DDC systems.

Mr. Gorski's design responsibilities include load calculations, equipment selection and system layout, project specifications, cost estimates, direction of the project drafting effort, coordination with architectural and other engineering disciplines, and construction administration. He also performs system analysis and energy studies, maintains client contact, and supervises the engineering effort of the Mechanical Engineering groups.

## REPRESENTATIVE EXPERIENCE:

**U.S. Army Reserve Center, Jane Lew, West Virginia**  
Readiness Center and Organizational Maintenance Shop Building

**Stryker Brigade Combat Team, Cambridge Springs, Pennsylvania**  
Readiness Center & OMS

**Ebensburg Center, Ebensburg, Pennsylvania**  
Heating System Replacement in Dormitory Buildings 1-7

**Westmoreland County Housing Authority, Scottdale, Pennsylvania**  
Scottdale Manor Efficiency Conversion

**West Virginia University, Morgantown, West Virginia**  
Campus Chiller Plant Study  
New Student Recreation Center

**McKeesport Housing Authority, McKeesport, Pennsylvania**  
Boiler Replacements in Multiple Facilities

**Bethel Park School District, Bethel Park, Pennsylvania**  
New High School

**Pittsburgh Public Schools, Pittsburgh, Pennsylvania**  
Central Food Kitchen

## **MICHAEL S. PLUMMER, P.E., C.I.P.E.**

*Firm Associate*

*Plumbing & Fire Protection Engineering Department Head*

### **EDUCATION**

Bachelor Mechanical Engineering  
Penn State University  
1997

### **REGISTRATION**

PE, Pennsylvania  
PE-062304, 2003

Certified in Plumbing  
Engineering (CIPE), 1998

With eleven (11) years of experience as a mechanical designer/engineer, Mr. Plummer is primarily responsible for the design of plumbing and fire protection systems and their components for educational, governmental, and commercial buildings.

Mr. Plummer's plumbing/fire protection design responsibilities include performing calculations for hydraulically designed sprinkler systems; designing water supply and pumping systems including fire mains and sizing of fire pumps; design/testing of fire protection and alarm systems; and design of plumbing sewage, gas and water systems. In addition to plumbing/fire protection systems, Mr. Plummer is an experienced HVAC system designer, and performs load calculations, equipment selection and systems layout. His duties include preparation of project specifications, cost estimates, project management, and coordination with architectural and other engineering disciplines.

Mr. Plummer also performs construction administration duties including review of submittals, preparation of punch lists, and field problem solving, as well as supervising the engineering efforts of the Plumbing/Fire Protection Department.

### **REPRESENTATIVE EXPERIENCE**

**Canaan Valley Institute, Davis, West Virginia**  
Headquarters/Educational Building (Design/Build)

**PA National Guard Readiness Center, Connellsville, Pennsylvania**  
New Armory at Readiness Center

**City of Fairmont, Fairmont, West Virginia**  
Public Safety Building

**West Virginia High Technology Consortium, Fairmont, West Virginia**  
Base Building & Tenant Fitup for \$13 Million Office Building Complex

**Collington SeniorCare, Prince George's County, Maryland**  
Life Care Community, Multiple Renovations/New Construction

**Erie Municipal Airport Authority, Erie, Pennsylvania**  
Terminal HVAC System Replacement

## **STEPHEN J. KISAK, P.E.**

*Principal, Vice President  
Electrical Engineering Department Head*

### **EDUCATION**

Master of Business Administration  
Frostburg University  
1997

BS, Electrical Engineering  
University of Pittsburgh  
1988

### **REGISTRATION**

PE, Pennsylvania  
PE-052645-E

PE, Virginia  
PE-0402-026204

An electrical designer/engineer for twenty-one (21) years, including three years as a high voltage electrical designer, Mr. Kisak has provided engineering services for the design of educational facilities, office buildings, college and university facilities, health care, assisted living/nursing homes, and commercial facilities. His primary responsibility is for the preparation of electrical opinions of cost, technical specifications, engineering drawings, field observation, and coordination with architectural and other engineering disciplines.

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

Mr. Kisak's recent experience includes engineering services for Allegheny General Hospital; Highfield Open MRI; and VA Pittsburgh Healthcare System.

### **REPRESENTATIVE EXPERIENCE**

**VA Hospital Pittsburgh, Pittsburgh, Pennsylvania**  
Radiology Dept Offices; Parking Garage New Substation

**University of Pittsburgh, Pittsburgh, Pennsylvania**  
Upper Campus Housing (Phases 1 and 2)

**Collington Life Care Community, Mitchellville, Maryland**  
Senior Housing Community Renovations & New Construction of Multiple Facilities

**Soldiers & Sailors Memorial, Pittsburgh, Pennsylvania**  
Electrical Engineering for New Chillers

**Pennsylvania Army National Guard, Connellsville, Pennsylvania**  
New Readiness Center

**MSA, Tarentum, PA**  
New Electrical Service for Data Center Expansion

# ***Taylor Structural Engineers, Inc.***

2275 Swallow Hill Road, Building 100, Pittsburgh, PA 15220 / Phone: (412) 722-0880 / Fax: (412) 722-0887

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## ***Pamela L. Holcomb, P.E.***

Vice President

### **EDUCATION:**

Bachelor of Architectural Engineering, The Pennsylvania State University

### **PROFESSIONAL REGISTRATIONS:**

Pennsylvania (Reg. No. 050636-E)

### **AFFILIATIONS:**

American Society of Civil Engineers

American Concrete Institute

American Institute of Steel Construction

### **EXPERIENCE:**

Vice President/Owner, Taylor Structural Engineers, Inc., Pittsburgh, Pennsylvania (Effective January 1, 2001)

Senior Engineer, Taylor Structural Engineers, Inc., Pittsburgh, Pennsylvania (1996 to 2000)

Senior Project Engineer, Peter F. Loftus Division of Eichleay Engineers, Inc., Pittsburgh, Pennsylvania (1993 to 1996)

Project Engineer, Structural Engineering Corporation, Pittsburgh, Pennsylvania (1991 to 1993)

Design Engineer, Cannon Design, Grand Island, New York (1989 to 1991)

# ***Taylor Structural Engineers, Inc.***

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## ***Brian D. Hermiller, P.E.***

Principal

### **EDUCATION:**

Master of Science, Civil Engineering, University of Toledo  
Bachelor of Science, Civil Engineering, University of Toledo

### **PROFESSIONAL REGISTRATIONS:**

Pennsylvania (No. PE-070560), Ohio (No. 68082), Connecticut

### **AFFILIATIONS:**

American Concrete Institute  
American Institute of Steel Construction

### **EXPERIENCE:**

Principal, Taylor Structural Engineers, Inc., Pittsburgh, Pennsylvania (January 2007 to Present)

Senior Project Manager, Taylor Structural Engineers, Inc., Pittsburgh, Pennsylvania (December 2004 to December 2006)

Project Manager, Taylor Structural Engineers, Inc., Pittsburgh, Pennsylvania (June 2000 to December 2004).

Design Engineer (EIT), A&A Engineering, Ltd., Toledo, OH (1998-2000)

### **PROJECT ROLE:**

Brian Hermiller has been the lead structural engineer on our student housing projects, actively involved in each level of the design process, from schematic design to construction documents, making appropriate visits to the construction site, and working closely with the architect on project coordination from start to finish.

# ***Taylor Structural Engineers, Inc.***

2275 Swallow Hill Road, Building 100, Pittsburgh, PA 15220 / Phone: (412) 722-0880 / Fax: (412) 722-0887

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## ***Dirk A. Taylor, P.E.***

President

### **EDUCATION:**

Bachelor of Science, Civil Engineering, West Virginia University  
Department of Architecture, Carnegie-Mellon University

### **PROFESSIONAL REGISTRATIONS:**

Pennsylvania (No. 37043-R), Ohio, West Virginia (No. 10342), Maryland, New York,  
New Jersey, Michigan, North Carolina, Virginia

### **AFFILIATIONS:**

American Society of Civil Engineers  
National Council of Engineering Examiners  
Pittsburgh Builders Exchange  
Board of Management, YMCA Camp Kon-O-Kwee/Spencer

### **EXPERIENCE:**

President/Owner, Taylor Structural Engineers, Inc., Pittsburgh, Pennsylvania (Established  
February 1, 1996)

Structural Department Manager, Peter F. Loftus Division of Eichleay Engineers, Inc.,  
Pittsburgh, Pennsylvania (1991 to 1996)

Senior Project Engineer, Structural Engineering Corporation, Pittsburgh, Pennsylvania  
(1989 to 1991)

Senior Design Engineer, CECO Buildings Division, Rocky Mount, North Carolina (1984  
to 1989)

Design Engineer, American Bridge Division of USSteel, Pittsburgh, Pennsylvania (1981  
to 1984)

## Alan Weiskopf, AIA

Managing Principal **Perfido Weiskopf Wagstaff + Goettel**



### Education

University of Cincinnati  
Bachelor of Architecture, 1975

### Registration

Registered Architect in PA,  
WV, MD, OH, IN, NY, NC & SC

### Professional Associations

NCARB Certification  
American Institute of Architects  
Chairman, City of Pittsburgh  
Board of Appeals  
AIA Pittsburgh Board of  
Directors (1990-1996)  
AIA PA Board (1997-2001)  
Member, Urban Land Institute  
Member, CEO's for Cities

Alan joined PWWG in 1981 as an associate and became a principal of the firm in 1986. He has served as the project architect or principal-in-charge of many of the firm's most significant projects, including several award winning projects. He has a wide range of experience in terms of project type and size, with a particular emphasis on higher education projects, projects involving restoration, renovation and preservation of culturally significant structures and hotel projects. He has also managed several of the firm's joint venture relationships. Among other activities, Alan is a past President of AIA Pennsylvania and has served on the Convention Center Design Commission Task Force for the David L. Lawrence Convention Center in Pittsburgh. He is a graduate of Leadership Pittsburgh, a past member of the Board of Code Review and he currently serves as Chairman of the Board of Standards and Appeals for the Bureau of Building Inspection in the City of Pittsburgh.

### Notable Project Experience:

PA Historic & Museum Commission, Pennsylvania - three 5 year open-end contracts for historic restoration work  
575 Broadway, New York, NY - adaptive reuse of historic urban building for office and museum uses  
Main Capitol Rotunda, Charleston, WV - historic restoration of rotunda interior  
Main Capitol Restoration, Harrisburg, PA - multi-phased historic restoration  
Courtyard by Marriott Hotel, Pittsburgh - adaptive reuse of historic urban building for 182 room hotel  
FORE Systems Campus, Warrendale, PA - high tech office and manufacturing campus - 5 buildings  
Hamburg Hall, Carnegie Mellon University - renovation of historic building for academic facility  
Oglebay Hall & Ming Hsieh Hall, West Virginia University - 55,000 sf historic renovation and 20,000 new building, LEED  
Information Science & Technology Building, Penn State University - \$50 million academic building  
Uhler Hall, Indiana University of Pennsylvania - academic building for psychology department  
West General Robinson Street Garage, Pittsburgh - 10 story event garage with 1200 spaces  
West Virginia Capitol Building Three, Charleston, WV - renovation of historic office building  
Pittsburgh International Airport, Pittsburgh - addition of landside and airside building passenger elevators  
Metropole Hotel, Cincinnati, OH - rehabilitation of historic downtown hotel for new upscale 170 room hotel

## Joe Filar AIA

Associate **Perfido Weiskopf Wagstaff + Goettel**



### Education

Penn State University  
Bachelor of Architecture, 1995  
Sede di Roma - Foreign  
Studies Program, 1993

### Registration

Registered Architect in PA,  
**Professional Associations**

American Institute of Architects  
National Historic Trust  
Pittsburgh History &  
Landmarks Foundation  
Pittsburgh Downtown  
Partnership

Joe began his professional career working in New York City, first for Castro-Blanco Piscioneri and Associates and then for Carpenter/Grodzins. After working in New York City, Joe moved back to Pittsburgh in 1999 and joined Perfido Weiskopf Architects as an intern architect. He became licensed and an associate in the firm in July of 2003. Joe has a broad range of design experience as a project architect on diverse project types including 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.

### Notable Project Experience

West Virginia State Office Building No.3, Charleston, WV - historic renovation of a 154,000 sf office building, LEED  
Dixie Cup Factory Lofts, Easton, PA - 588,000 sf historic factory renovation into +/- 300 one and two bedroom units  
Oglebay Hall & Ming Hsieh Hall, West Virginia University - 55,000 sf historic renovation and 20,000 new building, LEED  
R. B. Harrison Village, McKeesport, PA - conversion of 3 story walkups to townhouse apartments  
Courtyard by Marriott Hotel, Pittsburgh, PA - conversion of 9-story historic building into a 182-room downtown hotel  
Palace Theatre, Greensburg, PA - restoration and renovation of historical theatre and administrative spaces  
Information Sciences & Technology Building, Pennsylvania State University - new 200,000 sf campus building  
Three Rivers Center for Independent Living, Wilkinsburg, PA - conversion of a nursing home into a disability center  
Marconi Communications, Buildings 5 and 6, Warrendale, PA - headquarters buildings in a corporate campus  
Pittsburgh International Airport, Pittsburgh, PA - addition of private/public elevators in the airside terminal





## References

Tower Engineering offers the following as references for representative projects to follow:

Mr. Thomas Knight, Superintendent  
**Bethel Park School District**  
301 Church Road  
Bethel Park, Pennsylvania 15102  
412-854-8591

Dr. Deborah Akers, Superintendent  
**Mercer County Board of Education**  
1403 Honaker Avenue  
Princeton, West Virginia 24740  
304-352-2481

Mr. Bob Capo  
**Pittsburgh Public Schools**  
1305 Muriel Street  
Pittsburgh, Pennsylvania 15203  
412-488-4255

Mr. Paul Fusan  
**PNC Bank, N.A.**  
One Oliver Plaza, 23rd Floor  
Pittsburgh, Pennsylvania 15265  
412-762-3122

Mr. Lawrence E. Bair, Physical Plant  
**The Pennsylvania State University**  
Physical Plant Building  
University Park, Pennsylvania 16802  
814-865-1333

Mr. Justin Griffith, General Manager  
**The Regional Learning Alliance**  
850 Cranberry Woods Drive  
Cranberry Township, Pennsylvania 16066  
724-741-1005

Ms. Mary Rugh, Facilities Management  
**University of Pittsburgh**  
3400 Forbes Avenue  
Pittsburgh, Pennsylvania 15260  
412-624-9500

Mr. Charles Robison  
**West Virginia University**  
Physical Plant  
Morgantown, West Virginia 26506  
304-293-5280

Ms. Judy Muty, Manager of Facilities  
**Collington**  
10450 Lottsford Road  
Mitchellville, Maryland 20721  
301-925-7702, ext. 2160

Ms. Joan Reese, Rehabilitation Admin.  
**Westmoreland County Housing Authority**  
154 South Greengate Road  
Greensburg, Pennsylvania 15601  
724-832-7248

Tower Engineering Qualifications

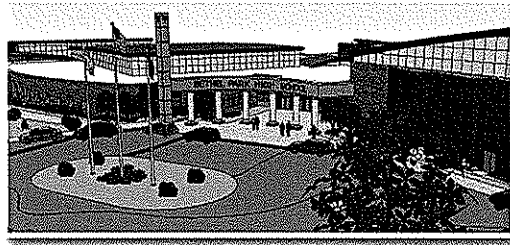
# Project Example

## Bethel Park High School Bethel Park, Pennsylvania

Tower Engineering is providing mechanical and electrical engineering services for a new \$98million high school for the Bethel Park School District. Our design of the mechanical systems for this project includes a chilled water plant consisting of two 450-ton, variable speed, water-cooled centrifugal chillers to provide cooling to the 280,000 s.f. building. A 30% propylene-water solution will provide freeze protection for the chilled water system. A glycol feed unit consisting of a polyethylene tank, two injection pumps, and an electric alternator will automatically inject glycol into the system to maintain system pressure and solution concentration.

The chilled system will have a primary-secondary pumping scheme. The system will have three primary pumps and two secondary pumps. The primary pumps, or 'chiller' pumps, will be variable speed base-mounted type pumps. One 25 HP primary pump per chiller will operate when its associated chiller is operating, while a third pump will remain in the standby mode. The 75 HP secondary pumps, or 'building' pumps, will be variable speed base-mounted type pumps. One secondary pump will operate while the other pump remains in standby mode. Variable frequency drives will vary the speed of the secondary pumps.

The condenser water system serving the chilled water plan will consist of a 900-ton cooling tower having a minimum of two cells and three 40 HP condenser water pumps. Each condenser water pump will operate when its associated chiller and cooling tower cell is operating. The third pump will remain in the standby mode.



Owner Contact  
Dr. Thomas Knight, Superintendent  
Bethel Park School District  
412-854-8591

Size  
280,000 s.f.

Construction Costs  
\$98 million

Completion Date  
In Design; Construction to  
begin June 2009



115 Evergreen Heights Drive  
Suite 400  
Pittsburgh, Pennsylvania 15229  
Phone (412)931-8888  
Fax (412)939-2525

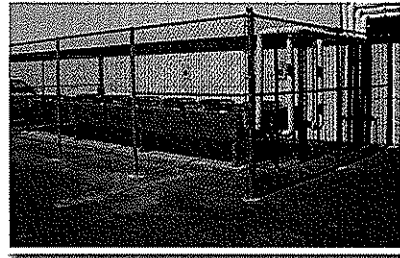
HVAC Engineering - Chillers

# Project Example

## Bluefield Middle School Chiller Replacement Bluefield, West Virginia

Tower Engineering provided mechanical and electrical engineering services for the replacement of an existing water-cooled chiller with a new 176 ton condenserless, water-cooled chiller for this West Virginia middle school. The scope of work for the project included the removal of the existing water chiller, the existing cooling tower, the existing chilled water and condenser water pumps, a select amount of chilled water and condenser water piping, and condenser pipe insulation and pipe hangers.

A prepurchased indoor water cooler and remote air cooled condenser were installed.

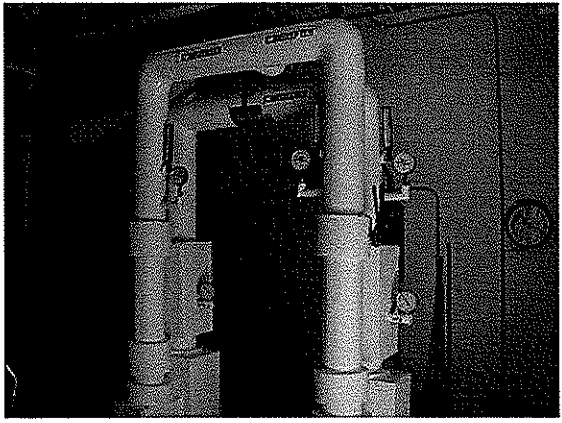


Owner Contact  
Dr. Deborah Akers, Superintendent  
Mercer County Board of Education  
304-325-2481

Size  
N/A

Construction Costs  
\$270,000

Completion Date  
2004



**TOWER**  
ENGINEERING

115 Evergreen Heights Drive  
Suite 400  
Pittsburgh, Pennsylvania 15229  
Phone (412)931-8888  
Fax (412)939-2525

HVAC Engineering - Chillers

# Project Example

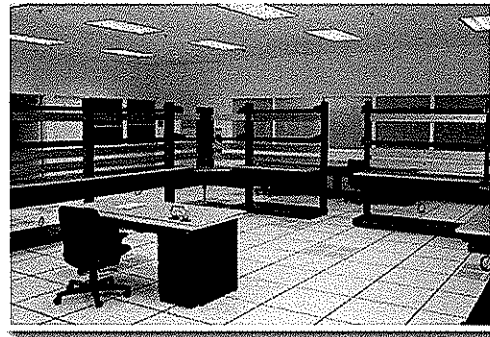
Pittsburgh Public Schools  
Central Food Kitchen  
Pittsburgh, Pennsylvania

The Central Food Kitchen of the Pittsburgh Public Schools serves as the heart of meal preparation for the district's 40,000 students. At nearly 90,000 square feet, the facility includes hot and cold meal assembly areas, bakery, production kitchen, produce production area, refrigerators and freezers, loading docks, offices, and the Board of Education's central data center, which controls data facilities for the entire school district.

Tower Engineering provided engineering services for the design of the mechanical and electrical systems for this extensive \$11.4 million renovation and new construction project. Highlights of the HVAC system included design of a gas-fired boiler system to provide water for summer-time heating purposes. Tower Engineering designed new burners, as well as replacement of the entire steam system back to the existing steam boilers for winter heating.

Air conditioning is provided by a new water cooled packaged rotary screw chilled water system. Central station air handling units, including variable and constant, were provided. Floor-mounted computer room air conditioning units were designed specifically for computer room environmental control. These units automatically monitor and control heating, humidification, dehumidification, and filtration functions for the data processing facility.

Mechanical engineering services were also provided for the replacement of the existing 5000 gallon underground fuel oil storage tank with a new 5000 gallon double-wall fiberglass storage tank.



Owner Contact  
Bob Capo  
Pittsburgh Public Schools  
412-488-4255

Size  
88,000 s.f.

Construction Costs  
\$11.4 Million

Completion Date  
2002

**TOWER**  
ENGINEERING

115 Evergreen Heights Drive  
Suite 400  
Pittsburgh, Pennsylvania 15229  
Phone (412)931-8888  
Fax (412)939-2525

HVAC Engineering - Chillers

# Project Example

## One PNC Plaza Chiller Replacement Pittsburgh, Pennsylvania

In early 1998, Tower Engineering conducted a study regarding the need for replacement of the existing R-11 chillers at One PNC Plaza in Pittsburgh, Pennsylvania. Our resulting report included an energy analysis, a review of the existing condition of the chillers and evaluation of maintenance requirements of the existing versus new chillers. An investigation of the installation of variable frequency drives (VFDs) for the existing chilled water pumps was also included. In addition, Tower Engineering provided an energy analysis to determine the energy saved by installing the new drives, as well as an estimate of installed costs to determine the payback period for the drives. The potential for energy savings by installing VAV boxes on the non-renovated floors of this 565,247 s.f. building was also included.

Tower Engineering was selected to provide engineering services for the replacement of the 1500 ton chilled water plant, including four water-cooled chillers and two cooling towers. The DDC control system for the entire building was also replaced at this time.



Owner Contact  
Mr. Paul Fusan  
PNC Bank, N.A.  
412-762-3122

Size  
565,247 s.f.

Construction Costs  
\$800,000

Completion Date  
1999



**TOWER**  
ENGINEERING

115 Evergreen Heights Drive  
Suite 400  
Pittsburgh, Pennsylvania 15229  
Phone (412)931-8888  
Fax (412)939-2525

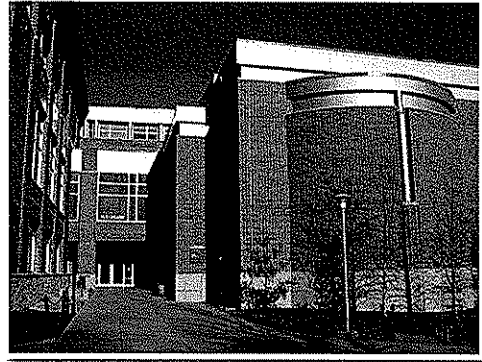
HVAC Engineering - Chillers

# Project Example

Penn State University  
HUB/Robeson Center  
University Park, Pennsylvania

Tower Engineering provided consulting engineering services for the \$25.7 million expansion and renovation of the Hetzel Union Building (HUB)/Robeson Center. This facility on the campus of The Pennsylvania State University includes 12,000 s.f. of banquet space handling up to 800 people, reception lounges for up to 25,000 people, conference rooms for 2000 guests, a 400-seat tiered auditorium, a food service court with 1,200 seats and complete food service operations, retail stores, public gathering areas and administrative offices.

The HVAC system designed for the Penn State HUB/Robeson Center consisted of a multiplicity of fan coil units and large volume air handling units. The air handling units are a combination of single zone and variable air volume types. A 600-ton, water-cooled centrifugal chiller provides chilled water. Heat in the building is provided by campus low-pressure steam. Some equipment is provided with steam heating coils; however, the majority of the heating equipment is hot water provided by a steam-to-water heat exchanger. Steam is also used to provide domestic hot water. The automatic temperature controls are DDC.



Owner Contact  
Mr. Lawrence E. Bair  
Physical Plant  
The Pennsylvania State University  
814-865-1333

Size  
242,350 s.f.

Construction Costs  
\$25.7 Million

Completion Date  
2002



**TOWER**  
ENGINEERING

115 Evergreen Heights Drive  
Suite 400  
Pittsburgh, Pennsylvania 15229  
Phone (412)931-8888  
Fax (412)939-2525

HVAC Engineering - Chillers

# Project Example

## Regional Learning Alliance at Cranberry Woods Cranberry Township, Pennsylvania

Regional Learning Alliance's Conference and Learning Center is a low-rise, mixed-use educational facility, which contains classroom and meeting room space for a consortium of local educational institutions as well as seminar, training and meeting space for local businesses. A wellness center and daycare center are also included in the building, along with a dining room and kitchen, snack bar, office space and boardroom. Business and conference-oriented use predominates during the day, while educational use typically takes place in the evenings and weekends.

Tower Engineering provided mechanical and electrical engineering services for this project. Following comparisons of the advantages and disadvantages of multiple HVAC system options, distributed fan coils with central make-up air system was chosen as the most efficient and effective system. A 100-ton evaporative cooled packaged chiller placed on the roof was designed. Chilled water is provided to fan coil units distributed throughout the building. Pumps are controlled by variable frequency drives.

US GBC LEED™ Silver rating was awarded for this project.



Owner Contact  
Mr. Justin Griffith, General Manager  
The Regional Learning Alliance  
724-741-1005  
Size  
75,000 s.f.

Construction Costs  
\$18 million

Completion Date  
2004



**TOWER**  
ENGINEERING

115 Evergreen Heights Drive  
Suite 400  
Pittsburgh, Pennsylvania 15229  
Phone (412)931-8888  
Fax (412)939-2525

HVAC Engineering - Chillers

# Project Example

University of Pittsburgh  
New Upper Campus Housing  
Pittsburgh, Pennsylvania

Tower Engineering provided mechanical and electrical consulting engineering services for new campus housing for the University of Pittsburgh.

Phase one of this project consisted of construction of 420-bed, nine-story facility. Tower Engineering's design of the HVAC systems included a 350-ton chiller, located on the roof, to provide cooling to the building. The system designed included a primary-secondary pumping distribution, with two primary pumps and two secondary pumps. The primary, or 'chiller' pumps are constant speed base-mounted type pumps. The secondary, or 'building' pumps are variable speed base-mounted type pumps. Variable frequency drives vary the speed of the secondary pumps.

The second phase of this project included the construction of a second nine-story building. This 160,000 s.f. building houses an additional 456 students. Our design of the mechanical systems for this facility were similar, with modifications to accommodate the larger sized facility. A 450-ton chiller was included in our design of this building.

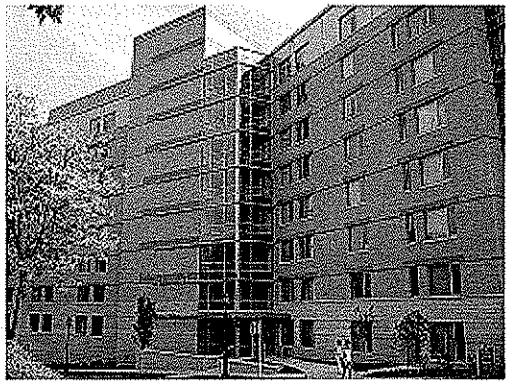


Owner Contact  
Ms. Mary Rugh  
University of Pittsburgh  
Facilities Management  
412-624-9500

Size  
280,000 s.f.

Construction Costs  
\$39 million

Completion Date  
2006



**TOWER**  
ENGINEERING

115 Evergreen Heights Drive  
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Pittsburgh, Pennsylvania 15229  
Phone (412)931-8888  
Fax (412)939-2525

HVAC Engineering - Chillers



# Project Example

West Virginia University  
New Student Recreation Center  
Morgantown, West Virginia

The new Student Recreation Center at WVU occupies a 12-acre site on the lower Evansdale campus, near the Evansdale Residential Complex. Highlights of the facility include 17,000 s.f. of weight/fitness areas on two levels; elevated running track; aquatics area with lap pool; three-story climbing wall; basketball, racquetball and squash courts; as well as a food court and administrative spaces.

Tower Engineering provided mechanical and electrical engineering services for this facility. Excluding the pool area, a central chilled water plant cools the building, with a capacity in the range of 800 to 900 tons. This system consists of multiple chillers, one multi-celled cooling tower, a base mounted type primary chilled water pump for each chiller, two base mounted type building chilled water pumps and two base mounted type condenser water pumps. The chillers are all electric-driven. The cooling tower is provided with inlet and/or sound attenuation sections in order to reduce noise generated by the cooling tower. The building chilled water pumps each have a variable frequency drive. The chilled water system contains 30% ethylene glycol for freeze protection purposes.

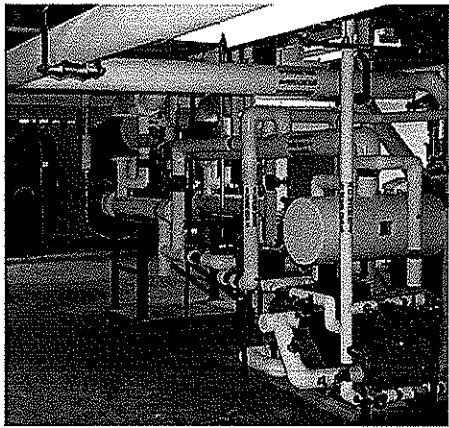


Owner Contact  
Mr. Charles Robison  
Physical Plant  
West Virginia University  
304-293-5280

Size  
170,000 s.f.

Construction Costs  
\$34 million

Completion Date  
2001



**TOWER**  
ENGINEERING

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HVAC Engineering - Chillers

# Project Example

## Collington Life Care Community Mitchellville, Maryland

Tower Engineering provided consulting engineering services for renovation/additions to an apartment building; construction of an one-story, 40-bed assisted living building; renovation of community facilities; renovation of the health care center; and construction of 24 new cottages. Construction was continuously phased over a thirty-month period. Given the need for continuous occupancy of the building through the renovation process, a key aspect of the project was development of a phasing plan. The mechanical systems were designed to work within the plan, eliminating or minimizing any downtime. During the construction phase, the plan was modified as needed to maintain use of the building.

The HVAC systems design for this project included:

- Conventional heat pump HVAC system to provide comfort conditioning in all resident rooms and public spaces.
- Packaged rooftop systems to condition core areas.
- Modifications to existing hot water plan including additional boiler, new pumps and accessories.
- Modifications to existing condenser-water plant including new fluid cooler, new pumps and accessories.
- Replacement of existing water-to-water shell and tube heat exchanger for heating operation.
- Expansion of existing plate-and-frame heat exchanger for cooling operation.
- New DDC building management system for equipment supervision and control, alarm management, energy management and historical data collection.
- Building ventilation system incorporating dual heat pipe energy recovery devices
- Kitchen exhaust systems including cooling hoods.



Owner Contact  
Ms. Judy Mutty  
Manager of Facilities  
301-925-7702

Size  
220,600 s.f.

Construction Costs  
\$21.3 Million

Completion Date  
2004



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HVAC Engineering - Boilers

# Project Example

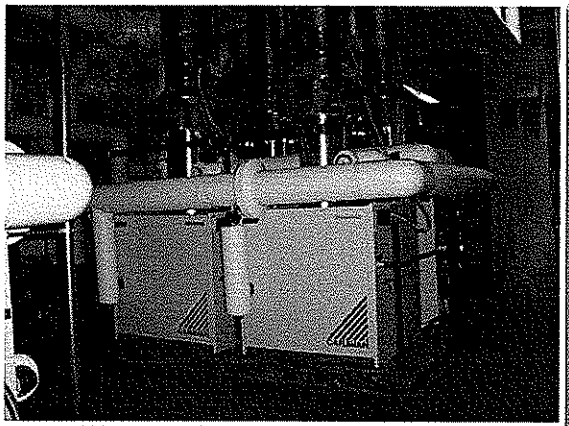
Scottdale Manor  
Westmoreland County Housing Authority  
Scottdale, Pennsylvania



Tower Engineering provided mechanical and electrical engineering services for the conversion of nineteen efficiency apartments into nine ADA accessible one-bedroom apartments. All public spaces on the ground level were upgraded to comply with ADA regulations. Life safety concerns were addressed within the converted apartments and the ground level public spaces.

The existing building's HVAC system was replaced as follows:

- Design of a new chilled water system.
- Replacement of existing hot water heating boilers with new modular type hot water boilers.
- Replacement of existing thru-the-wall packaged terminal air conditioning units with Whalen model 50/50 units.
- Replacement of existing hot water pumps and accessories.



Owner Contact  
Ms. Joan Reese  
724-832-3021

Size  
15,770 s.f.

Construction Costs  
\$1.9 Million

Completion Date  
2006

HVAC Engineering - Boilers

**TOWER**  
ENGINEERING

115 Evergreen Heights Drive  
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Phone (412)931-8888  
Fax (412)939-2525

## Additional References

In addition to those references provided for our representative project experience, Tower Engineering offers the following

Mr. Al Bennett  
Director of Fiscal and School Services  
**Moon Area School District**  
8353 University Blvd.  
Moon Township, Pennsylvania 15108  
412-264-9440, x1102

Tower Engineering is currently providing engineering services for the design and commissioning of HVAC systems for the District's new high school.

Mr. Kevin Swindell, Facilities Manager  
**North Hills School District**  
135 Sixth Avenue  
Pittsburgh, Pennsylvania 15237  
412-318-1049

Our current projects include engineering services for renovations/additions at two elementary schools. Our recent past projects include HVAC renovations at the District's administration building and a study for providing cooling at an elementary school.

Mr. Casey Wells, Executive Director  
**Erie County Convention Center Authority**  
809 French Street  
Erie, Pennsylvania 16501  
814-453-7117

Tower Engineering provided services for improvements to the Tullio Convention Center's HVAC, ice making and hockey-related equipment.

Mr. Jim Decker, Director of Facilities  
**Fairmont State University**  
Office of Physical Plant  
Fairmont, West Virginia 26554  
(304) 367-4000

Tower Engineering has provided engineering services for a multitude of projects, ranging from the evaluation of building systems to design of a multimillion dollar Engineering Technology Building. Additional recent projects have included miscellaneous renovations to the Student Recreation Center; Library renovations; and fitup of attic classrooms in a new dormitory building.

Stephen L. Bucklew  
Deputy Executive Director  
Mr. Stephen L. Bucklew, Deputy Exec. Dir.  
**McKeesport Housing Authority**  
2901 Brownlee Street, 2nd Floor  
McKeesport, Pennsylvania 15132  
412-673-3604

Tower Engineering holds an agreement with the Authority to provide mechanical/electrical engineering services. Recent projects include assessments and replacements of boilers in multiple buildings; physical needs assessment of all Authority-owned facilities; and engineering services associated with Energy Performance Contracting.

Tower Engineering Qualifications