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• To participate in none but honest enterprise;
• To live and work according to the laws of man and the highest standards of professional conduct;
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The Benefit of Student Field Trips

Beverly W. Withiam, P.E., Interim Director, Engineering Technology
University of Pittsburgh at Johnstown

Field trip experiences provide an excellent way for students to see firsthand topics they study in classrooms. The purpose of this article is to relate the student benefits that I have observed for one particular course and to encourage all engineers in Pennsylvania to help facilitate field trips. Senior Civil Engineering Technology students at the University of Pittsburgh at Johnstown (UPJ) may select CET 1142, Water Supply and Wastewater, as one of their technical elective courses. Students enrolled in this class typically go on six or seven field trips during the term. About half of the field trips are to water treatment plants and the other half to wastewater treatment plants. Most students enrolled in this class have never been to a treatment plant before going on the field trips.

Because some students are more apt to learn by observing rather than reading, the field trip experience provides a means of enhancing and expanding the learning experience. By the end of the term, students find that they have learned more than the technical aspects of the treatment plants; they have also learned additional skills that will benefit them in their future jobs.

For each field trip experience, students are required to take notes, make sketches and ask questions. Because these students are seniors, they are experienced in-class note takers, but most have not been required to take notes outdoors. They learn to hold on to a piece of paper in all types of weather conditions and to go to a site with an adequate writing surface and writing instrument. They also learn that gloves and hats are needed in cold weather, even though they may not be fashionable.

Students are required to make flow diagrams depicting the flow of water and solids at each plant. These sketches reinforce textbook diagrams and point out similarities and differences of the plants. If a plant tour is not conducted in a way that follows the flow paths, students have to be able to put the operations into proper order. By seeing the actual unit operations and processes, students gain an understanding of the size of the footprint required for water and wastewater treatment plants. They start to appreciate the planning that must precede the number crunching. They gain a better grasp of the need to be able to expand a plant, but still keep it operationally manageable.

Prior to the field trip, students are given a list of questions that they must later be able to answer and write about. This aspect of the experience teaches the students how to conduct interviews, to confirm facts, to identify the person that they are talking with, and to follow-up with additional questions if needed. Some of the questions elicit answers that are numerical, such as the number of people served or the depth of the sedimentation basin. Others expose the students to the situations faced by the people that operate the plants. Students ask the plant operators to tell them about problems they have encountered in day-to-day operations or during emergency situations. I encourage this interaction because the students learn a great deal from the ingenuity and know-how of the operators.

A graduate working at a consulting firm that designs water and wastewater treatment plants will recall the conversations that occurred during the field trips and hopefully incorporate some of what they learned.

Frequently students must learn to overcome two fears: the fear of asking a stranger a question and the fear of appearing foolish. These fears are always alleviated once the students realize that the people conducting the tours like to talk about their jobs and that no question is considered silly.

By the time students go on their last field trip of the term, they know what to expect and are much better prepared. They gain the confidence to ask questions and sometimes even divide the questions among themselves to make the interview flow more smoothly. They also have honed their writing skills and discern what needs to be incorporated into a plant description.

I am grateful to the people in the Cambria and Somerset County areas that have supported the UPJ field trip effort for more than twenty years. The type of experiences that I have described here can only occur if someone takes the time to accommodate the field trips. Practicing engineers, water and wastewater authority employees and plant operators all contribute to the educational experience when they get involved.

Beverly W. Withiam, P.E. has been teaching in the Engineering Technology Division of the University of Pittsburgh at Johnstown since 1982. UPJ offers four year Bachelor of Science degrees in Civil, Electrical and Mechanical Engineering Technology. Ms. Withiam is a member of PSPE, ASCE, ASEE, AWWA, and WEF. Contact information: 225 E&S Building, 450 Schoolhouse Road, Johnstown, PA 15904. Phone: 814.269.7263. Email: bev@pitt.edu
On Capitol Hill

John D. Wanner, CAE

Special Session on Property Tax Reform Begins

Governor Ed Rendell called for a Special Session of the General Assembly to focus attention on, and finally enact, real property tax reform in the continued absence of slots revenue, and heated debate over the implementation of Act 72. Myriad plans from various legislators have been introduced, Rendell and House Democrats, among others, looking to work on amendments to Act 72, the remaining members of the “Commonwealth Caucus” continuing to tout their expanded Sales tax plan, and others, like several members of the Lehigh Valley delegation, trying to simplify the existing structure.

In the simmering aftermath of the pay raise vote, most legislators believe they are compelled to do something to take home to the voters this fall, and property taxes and minimum wage seem to be two imperative issues, along with increasing benefits for members of the National Guard and their families who are serving abroad.

The fall of the odd-numbered years is usually a fairly inactive time, but it seems likely that this year will be different.

Legislation introduced to eliminate Best Value Contracting

Representative Scott Petri (R, Bucks Co.) has introduced legislation, House Bill 1996, which would prohibit the use of Best Value Contracting. The bill simply strikes “construction” from the list of services that the Commonwealth can procure through the “competitive sealed proposal” process. That process is another term for Best Value Contracting. The PA Department of General Services (DGS) recently awarded its first project using Best Value instead of low bid, construction of a new student union building at Cheyney State University. Of interest in that award is that the 4 contractors chosen as the “Best Value” winners were also the low bidders. Under the DGS system, price is worth 60% of the points.

Shortly after the award, the Associated Builders and Contractors (ABC) sued the Commonwealth, claiming that its Best Value system is illegal. ABC has been claiming that the DGS system will favor union contractors. Ironically, of the four contractors selected on the Cheyney project, two are union and two are non-union. State Government insiders give neither the bill nor the lawsuit much chance of success.

Rep. Evans Introduces Payment Bill for Philly Work

Rep. Dwight Evans of Philadelphia introduced a bill that would require that all contractors be paid before a certificate of occupancy can be issued. House Bill 1878 amends the Pennsylvania Construction Code by adding that in cities of the first class (Philadelphia) a certificate of occupancy for a commercial building or structure may not be issued by a construction code official or a municipal code official until the owner provides certification that all retainage for contractors, subcontractors and materials suppliers, that performed work or supplied materials for the building or structure, has been paid.

This does not apply to any of the following: (1) amounts necessary to ensure completion of incomplete work, (2) amounts necessary to insure performance of work which is noted in a written list provided to the owner specifying deficiencies yet to be corrected, and (2) amounts necessary to compensate for undelivered, defective or otherwise inadequate supplies.

Amends Title 18 (Crimes and Offenses)


Amends Title 18 (Crimes and Offenses) making it a summary offense to intentionally cut, injure, damage, destroy, deface or remove any survey monument or marker and a misdemeanor of the second degree to willfully or maliciously cut, injure, etc. a survey monument or marker in order to call into question a boundary line. Violators would be liable for the cost of the re-establishment of permanent survey monuments or markers by a professional land surveyor and all reasonable attorney fees.

Reported as committed from House Judiciary Committee, read first time, and laid on the table, 9/27/2005


Would create the Sprinkler Loan Fund. The Department of Community and Economic Development would administer the loan program utilizing moneys from the fund for the purpose of providing low-interest loans to owners of student residences to install automatic fire suppression systems. Loans under this program would only be utilized to fund the installation of automatic fire suppression systems in preexisting buildings. A loan issued under this program would be subject to the following terms and conditions: (1) The loan would be subject to an interest rate of 2%, (2) The loan would be repaid within 15 years of the date of the loan, (3) Any other terms and conditions as promulgated by the department.

“Capitol” continued p. 7
HB 1467 RE: Residential Construction Dispute Resolution Act

Establishes dispute resolution procedures relating to residential construction defects between contractors and homeowners or members of associations. In an action under the legislation, the claimant must notify the contractor of a claim at least 75 days before initiating action. The contractor would have 15 days to respond. The legislation would not apply to any claim for personal injury or death.

Reported as committed from House Rules Committee, and laid on the table, 9/26/2005

Removed from the table, read second time, and rereferred to House Appropriations Committee, 9/27/2005

Reported as committed from House Appropriations Committee, 10/17/2005


Amends the Mechanics’ Lien Law by stating that only a contractor (not a subcontractor) may waive his right to file a claim by a written instrument signed by him or by any conduct which operates equitably to prevent the contractor from filing a claim.

Reported as committed from House Rules Committee, and laid on the table, 9/26/2005

Removed from the table, read second time, and rereferred to House Appropriations Committee, 10/17/2005


Amends Tax Reform Code further providing for the imposition and rate of the sales and use tax and for transfers to the Public Transportation Assistance Fund; designating certain sales and use tax revenue for transfer to the Education Operating Fund; and increases the rate of the State Real Estate Transfer Tax to 2% (from 1%) and requires moneys raised by the Local Real Estate Transfer Tax to be deposited in the Educational Operating Fund. The bill states it is the intent of the General Assembly to broaden the sales and use tax base and reduce the rate of that tax in order to provide funds for the operating expenses of school districts.

The legislation adds that “sale at retail” includes wearing apparel or shoes; and the rendition for a consideration of any service, other than a medical service, when the primary objective of the purchaser is the receipt of any benefit of the service performed, as distinguished from the receipt of property. States that any service performed in PA would be subject to taxation under this article unless specifically exempted. “Use” would also include wearing apparel or shoes.

The sales and use tax is reduced to 5% from 6% and provides for the computation of the tax. Revenues from the tax would be deposited into the Education Operating Fund. The legislation also extensively provides for exclusions.

The following items are added to the list of those items excluded from the sales and use tax: medical goods and services by a hospital; dental services; goods or services involving Medicare Part B transactions; transportation provided or funded by the federal, state or local government; insurance premiums; mortgages; investments or gains on investments; rental of real property; and the sale of property to schools.

The following items are removed from the list of those items excluded from the sales and use tax: diapers, sanitary napkins, etc.; steam, natural gas, fuel oil, electricity, etc.; packing materials such as wrapping paper, twine, tape and cartons; vessels designed for commercial use of registered tonnage of 50 tons or more when produced by the builders thereof upon special order of the purchaser; or tangible personal property or services used or consumed in building/repairing, cleaning/maintaining such vessels; medical supplies, such as crutches, wheelchairs, false teeth; coal; motor vehicles, semis, & trailers; water; clothing, shoes, apparel; religious publications; food and beverages, except for those sold at/from a school or church; caskets and tombstones; newspapers; US and PA flags; textbooks; commercial film rentals; mail order catalogues and direct mail advertising literature; horses; fish feed; tourist promotion materials; brook trout; school buses; firewood; materials used in the construction and erection of objects purchased by not-for-profit organizations for memorials; electronic & hybrid vehicles; power units for vehicles; magazine subscriptions; office building cleaning supplies and costs; candy and gum; property or services used to install stairways/systems for disabled; building machinery and equipment and services; personal computers and software; prebuilt housing; and food and nonalcoholic beverages used on airlines.

The legislation also re-allocates the percentages of transfers to Public Transportation Assistance Fund and states no more than $75 million total may be deposited in the fund in any one fiscal year.

Reported as committed from House Rules Committee, read first time, and laid on the table, 9/27/2005


Provides procedures relating to dispute resolution for residential construction defects between contractors and homeowners or members of associations. The bill states that a claimant would, no later than 75 days before initiating an action against a contractor, provide service of written notice of claim on the contractor. An association may bring an action against a contractor to recover damages resulting from construction defects in any of the common elements or limited common elements of a common interest community. The bill states that upon entering into a contract to construct a dwelling, the contractor would give the owner or buyer a written notice concerning construction defects. Failure to include the notice would deprive the contractor of the benefits of this act.
By 1854 in the United States, railroad transportation was the answer. The question? How to ensure that Pennsylvania could divert/channel/profit from the massive flow of raw goods from west to east and finished goods from east to west with the greatest efficiency (economic and chronological) and the least risk.

Hundreds of miles of canals were under construction across the eastern United States. Each of these canals represented competition for Pennsylvania commerce and development. Key competitors were the Morris Canal in New Jersey, the Chesapeake and Ohio Canal in Maryland, the Erie Canal in New York, and the Ohio and Erie Canal in Ohio. Clearly, Pennsylvania needed to take action to seize back its market share.

The challenge

In 1839, the Commonwealth commissioned Col. Charles L. Schlatter, an engineer, to survey a direct route without the inclined planes of the Allegheny Portage Railroad. He proposed three alternative routes, one to the north, one to the south, and one in the middle. The Commonwealth took no action on any of the routes.

In 1847, J. Edgar Thompson was appointed chief engineer of the Pennsylvania Railroad. He resurveyed and improved the middle route, following the valley of the Juniata River. This valley provided a good, level route to the foot of the Alleghenies, where the PRR would build the city of Altoona.

The maximum that the locomotives of the day could handle was 1.8%. The challenge was to find a route through the Allegheny Mountains that wouldn’t exceed a grade of 1.8%. The surveyors had already determined that they would have to tunnel through a mountain near Gallitzin. They found ridges heading from Gallitzin back toward Altoona. They found ridges leading out of Altoona. Unfortunately, about five and a half miles west of Altoona, these promising paths were divided by the Kittanning Run Ravine and the Burgoon’s Run Ravine. To connect the two paths, a crow would fly a 1.2 mile path with a 4.37% grade. Obviously there were only two potential solutions: decrease the numerator or increase the denominator to reduce the grade below 1.8%.

The engineering solution

The solution was radical: Build huge fills across both ravines and cut a notch in the face of the mountain in between. By building this “detour,” the distance would be increased to 3 miles, and the average grade reduced to 1.73% on the western fill, 1.45% on the notch, and 1.75% on the eastern fill. All these grades were workable. The new, proposed track path would form a giant horseshoe across the two ravines.

Gathering the volume of soil necessary to construct the two fills would leave a large divot in the valley. The divot would become a pair of reservoirs. The extraordinary motive loads of achieving these extreme grades would cause the locomotives to run hard and hot. The reservoirs would make certain that adequate water was available to keep the engines safely cool.

Muscling through

To the best of our knowledge, there were no engineering problems solved with clever, fascinating solutions. This was a problem of brute force. There were no bulldozers, no steam shovels, no backhoes. This amazing work was accomplished by 450 Irish mine workers imported from Counties Antrim, Cork, and Mayo. The work was accomplished using only hand drills, black powder, picks, shovels, and wheelbarrows. Apparently, though, the men didn’t burn off enough energy. There were many strikes and brawls.

There were interesting cultural consequences. Because much of the labor was supplied by Irish immigrants, the result was one of the first Roman Catholic communities of significance in the western United States (as it was then defined). Altoona still shows face of its religious diversity.

The Horseshoe Curve opened for traffic on February 15, 1854. There are those who would argue that the Horseshoe Curve is the American version of the Egyptian pyramids. Many periodicals of that day and since referred to the Horseshoe Curve as the Eighth Wonder of the Modern World.
You May Qualify as an NSPE Fellow

PSPE in conjunction with NSPE is again seeking nominations for the Fellow membership grade to honor a select group of individuals for special recognition.

Download the nomination form from the NSPE website at www.nspe.org/aboutnspe/ab1-fellow.asp. Send your completed application to PSPE by January 9, 2006. The PSPE Council of Fellows will review nominations for recommendation to the NSPE Council of Fellows Executive Committee, chaired by Past President Monte Phillips, P.E., F.NSPE.

If you have questions regarding nominations, please contact Sara Clark at NSPE headquarters (703/684-2804, sclark@nspe.org).

We look forward to receiving your nomination and recognizing you.

Fellow Member Application Guidelines

- The NSPE Board of Directors established the Fellow recognition program to honor those licensed members who have demonstrated exemplary service to the profession, the Society, and the community. Service should include contributions in the national arena, such as prominent participation in NSPE and its state societies. Prominent participation in other nationally recognized engineering societies will also be considered. (See also “Notes on Completing the Application” at end.)
- Nominations must be submitted to the NSPE selection committee through a state society of NSPE, or through a member of the NSPE Board of Directors with NSPE Board endorsement.
- Each state society is allowed to make one nomination for each 1,000 voting members on its rolls rounded to the next higher number of nominations. Each state is allowed at least one nomination per year. State societies are allowed to submit more nominations in any one year than the single year limit, provided that the total number of nominations does not exceed the sum of the yearly limit for the current year plus any unused nominations from the previous year. Nominations have a life of one year. Persons not selected for Fellow in a particular year may be re-nominated in subsequent years. Each subsequent nomination will count as a new nomination.
- State society nominations must be accompanied by at least three letters of recommendation from NSPE members familiar with the nominee’s qualifications. One of the letters of recommendation must be from the president of the nominee’s state society stating that the recommendation has been approved by the state society board of directors. In addition, one of the letters of recommendation must be from a current NSPE Fellow.
- Nominations from state societies will be accepted by the Council of Fellows Executive Committee until February 1 each year.
- The NSPE Board of Directors votes final approval of those nominees recommended for Fellow grade status by the NSPE selection committee.

Completing the Application

- The key to providing a successful application is for the submitting state to take ownership and “add value” in presenting the accomplishments of the candidate. Merely listing activities without showing the significance of the accomplishments may leave the selection committee with insufficient information for a positive response.
- Fellows must show prominent accomplishment in all three of the criteria established by the Board: the engineering profession, the Society, and the community. A lack in one or another area can lessen a candidate’s chance.
- Since Fellow status may be recognition of more than NSPE activities, consideration of national engineering accomplishment and activity are important, i.e., either with NSPE or with other engineering societies.
- Remember that the selection committee does not generally know the candidates. The committee can judge the candidate only by the strength and completeness of the application.

NSPE Fellow Members - Pennsylvania

John R. Ackerman PE, PG, DEE, FNSPE  
Luzerne County

Leonard K. Bernstein PE, FNSPE  
Philadelphia

William J. Bryan PE, FNSPE  
Washington

Elizabeth A. Catania PE, FNSPE  
Delaware County

John W. Fisher PE, FNSPE  
Lehigh Valley

Ernest U. Gingrich PE, PLS, FNSPE  
Harrisburg

John G. Woods PE, FNSPE  
Philadelphia

Barry E. Isett PE, FNSPE  
Lehigh Valley

Walter K. Morris PE, FNSPE  
Harrisburg

Sidney J. Myers PE, FNSPE  
Harrisburg

Harvey D. Hnatiuk PE, FNSPE  
Valley Forge
Green Roofs - A Technology Who's Time Has Come  
Carl DuPoldt, PE - Delco Chapter PSPE

With rising fuel costs and the new storm water regulations, green roof technology poses a feasible solution to commercial, institutional and industrial roofing needs. In Germany, there are over 100 million square feet of green roofs installed as of 2001.

Green roofs are vegetated roof covers that help to manage stormwater, improve water and air quality, mitigate heat and reduce energy costs. Green roofs lengthen the service life of the roof and provide for wildlife habitat.

The American Society of Testing Materials (ASTM) has formed a work group to establish a Green Roof Standard. Three standards are under development, namely, guide for selection, installation and maintenance of plants for green roof systems; guide for use of expanded shale, clay or slate (ESCS) as a mineral component in growing media for green roof systems; and, standard practice for the assessment of green roofs.

Green roofs can be intensive or extensive depending on the planted usage of the roof.

Intensive green roofs require intense maintenance and are often park-like areas that are accessible to the public. The installation costs range from $25 to $40 per square foot.

Extensive green roofs are limited to herbs, drought resistant grasses, succulents and mosses. The installation costs range from $14 to $25 per square foot.

Extensive green roofs are the single most effective solution to stormwater management. They act like a sponge during rain events by helping to filter pollutants and slow the discharge of stormwater, which limits the effects of flooding and erosion downstream. It has been estimated that approximately 75% of the pollutants are absorbed in a 3 to 5 inch growing medium.

Additional resources for green roofs:
- http://www.greenroofs.org
- http://www.usgbc.org
- http://www.astm.org
- http://www.epa.gov/owow/nps
- http://www.eltgreenroofs.com
- http://www.hrt.msu.edu/greenroof
- http://www.city.waterloo.on.ca
- http://www.roofmeadow.com

Green Roof Awards of Excellence

Green Roofs for Healthy Cities established the Green Roof Awards of Excellence in 2003 to recognize green roof projects which exhibit extraordinary leadership in integrated design and implementation. The awards also increase general awareness of green roof infrastructure and its associated public and private benefits, while recognizing the valuable contributions of green roof design professionals. Below are two winners from the 2005 awards.

Award Category: Extensive Industrial/Commercial


Category: Intensive Residential

Project: North Beach Place, San Francisco, California. Photo courtesy of Green Roofs for Healthy Cities (www.greenroofs.org) and Award Winner, Cathy Garrett, Principal, PGAdesigninc Landscape Architects, Oakland, California. Structural Engineer: Amir Kazemi, FBA Structural Engineers.
2006-07 PSPE Nominating Committee Report  
Ernest U. Gingrich, P.E., PLS, Committee Chair

In late summer, all chapters were asked to submit names for consideration to the Nominating Committee for state officers for the upcoming year. The Nominating Committee, comprised of one State Director from each region, included:

Ben Thayer, P.E. .......... (Beaver Chapter, Northwest Region)
Bob Davis, P.E. .......... (Central Chapter, Central Region)
Eric Tappert, P.E. ...... (Lehigh Valley Chapter, Northeast Region)
Dave Briskey, P.E. .... (Pittsburgh Chapter, Southwest Region)
Mike Moore, P.E. ....... (Valley Forge Chapter, Southeast Region)

The nominating committee submits the following slate of nominees to PSPE for 2006-2007. A copy of each candidate's biography appears on the following pages.

President Elect: ..................................Leonard Bernstein, P.E.
Secretary:  ..........................................Joseph Boward, P.E.
Treasurer:  ......................................... John Nawn, P.E.
Vice President Central Region:   ........John Bradshaw, P.E.
Vice President Northeast Region: ......Walter Poplawski, P.E.
Vice President Northwest Region: .....David McCullough, P.E.
Vice President Southeast Region: .....Frank Stanton, P.E. AND Rick Aulenbach, P.E.
Vice President Southwest Region:......Michel Sadaka, P.E.

In accordance with PSPE bylaws, members who wish to run for office may do so by petition. Nominations signed by at least 25 PSPE members in good standing, along with a picture and biography of the candidate, must be received by the PSPE Secretary by February 15, 2006. A copy of the petition and accompanying material shall be concurrently delivered to the Chair of the Nominating Committee.

The secretary shall verify the membership validity of the signers and inform the Chair of the findings, and also if in proper order, make the appropriate listing on the ballot.

In the case of more than one nomination for office a ballot will be mailed to the membership by March 1, 2006. On behalf of the nominating committee I congratulate all of the nominees. I also thank the members of the nominating committee and greatly appreciate their help in this process.

Respectfully Submitted,
Ernest U. Gingrich, P.E.
Chair, Nominating Committee

PSPE members interested in petitioning to be on the ballot for a PSPE state office, should send nominations to:

<table>
<thead>
<tr>
<th>PSPE Secretary/Treasurer</th>
<th>Nominating Committee Chair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leonard K. Bernstein PE, FNSPE</td>
<td>Ernest U. Gingrich PE, PLS, FNSPE</td>
</tr>
<tr>
<td>4140 Orchard Lane</td>
<td>103 Centerfield Drive</td>
</tr>
<tr>
<td>Philadelphia, PA 19154-4418</td>
<td>Harrisburg, PA 17112</td>
</tr>
<tr>
<td>Phone: (215)824-3570</td>
<td>Phone: (717)545-7020</td>
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<tr>
<td><a href="mailto:lenbernsteinpe@yahoo.com">lenbernsteinpe@yahoo.com</a></td>
<td><a href="mailto:euggingrich@aol.com">euggingrich@aol.com</a></td>
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2006-07 Candidates for PSPE Office

Leonard K. Bernstein, PE, FNSPE
Candidate for President Elect

Len has been an active member of PSPE since 1981. He has been on the Philadelphia Chapter Board of Directors since 1982 when he was first elected as a Chapter Director. Since 1982, Len has served the Philadelphia Chapter as President twice (1988-89, 1996-97), Vice President, Secretary, Chapter Director, and State Director. He has also served the Philadelphia Chapter by chairing the Ethics, Bylaws, and Awards Committees and as editor of the Chapter newsletter. At the State level, Len has been the PSPE Treasurer since 2001 and PSPE Secretary since 2005, has been a member of the PSPE Constitution and Bylaws Committee for 16 years, serving as Chair for the last ten years. Len served as a member of the PSPE House Bill 1960 Task Force that defeated an attempt by the Pennsylvania Sewage Enforcement Officers to legalize the engineering design of onlot sewage disposal systems by non-licensed designers. At the National level, Len is a member of the PSPE Constitution and Bylaws Task Force and has been a member of the NSPE Government Affairs Committee.

In recognition of his service to PSPE, PSPE Past President Craig L. Weaver, P.E., presented Len with the 2000 President’s Dedicated Service Award for the countless hours he has dedicated to PSPE. In 2005, Len also received the PSPE Professional Engineers in Government Dedicated Service Award and was named an NSPE Fellow Member.

Len received his Bachelor of Science degree in Civil Engineering from the Polytechnic Institute of Brooklyn (Brooklyn, NY) and his Master of Science degree in Civil and Urban Engineering from the University of Pennsylvania. Len is a licensed Professional Engineer and Sewage Enforcement Officer in Pennsylvania and is currently the Special Projects Coordinator for the City of Philadelphia’s Water Department. Len began with the Water Department in 1976 as a Project Engineer and, five years later, advanced to Chief of the Water Pollution Abatement Program, the City’s $900 million expansion of its three wastewater treatment plants. In heading the Program, Len was responsible for all aspects of the design, procurement, and construction of this federally funded program. In addition to his work with the Water Pollution Abatement Program, for seven years, Len was responsible for developing and tracking the Water Department’s annual Capital Budget that was in excess of $200 million each year as well as the Engineering Division’s annual Operating Budget. As Special Projects Coordinator, Len is currently responsible for the planning activities for the Water Department and the City of Philadelphia under the Pennsylvania Sewage Facilities Act (Act 537) and coordinates Water Department activities at the Philadelphia Naval Business Center, a world-class industrial park on the site of the former Philadelphia Naval Ship Yard.

In addition to his primary employment, Len is an Adjunct Associate Professor in the Department of Civil and Environmental Engineering at Temple University in Philadelphia and is active in the Pennsylvania Association of Sewage Enforcement Officers; the American Public Works Association (APWA) where he serves on the American Public Works Association/Institute of Public Works Engineering Australia/INGENIUM (Association for Local Government Engineering, New Zealand) Partnership Task Force, the Legislative Advocacy Task Force and has served on the International Affairs Committee. Len also serves on the APWA Bylaws and Rules Committee, a committee he chaired for two years. Len is the current President of the APWA Southeastern Pennsylvania Chapter and served as Co-Chair of the APWA 2001 International Public Works Congress and Exposition when it was held in Philadelphia in September 2001. Locally, Len also chairs the Awards Committee and had previously chaired the Bylaws Committee of the Delaware Valley Engineers Week Council.

Beyond his professional activities, Len has been active in his community as a coach and referee for multiple youth sports and is a dedicated member of Our Lady of Calvary parish where he has served on Parish Council for 20 years and is presently a lector and Eucharistic Minister.

Len is a Vietnam era veteran of the U.S. Army where he spent time as an instructor of various engineering subjects at the Non-Commissioned Officer Academy at Ft. Leonard Wood, MO. He lives in Philadelphia with his wife of 33 years, Joan, and has three grown children.

Joseph F. Boward, P.E.
Candidate for Secretary

Joseph F. Boward graduated from Purdue University in 1984 with a BS degree in Civil Engineering. He majored in Soil Mechanics and minored in Environmental and Structural Engineering. In 1988 and 1991, he completed the Occupational Safety and Health Administration (OSHA) training and instruction requirements for Waste Site Worker Protection and Waste Site Supervisor, respectively, in compliance with OSHA specifications designation 1910.120(e)(2). In 1989, he completed his requirements as a Professional Engineer (P.E.) and is now licensed in the states of Pennsylvania, West Virginia, Ohio, and Maryland. Also in 1989, he successfully completed educational requirements for Radium and Radon in the Environment at the University of Wisconsin, and the Environmental Site Assessment
“Candidates” continued from p. 13

course conducted by the National Water Well Association. In 1990, he earned his MS degree in Civil Engineering from the University of Pittsburgh, where he concentrated in Soil Mechanics and minored in hydraulics/hydrology. In 1996, he completed the Environmental Site Assessments course given by the American Society for Testing and Materials (ASTM).

From 1981 to 2003, Mr. Boward was employed by Engineering Mechanics, Inc., as a geotechnical engineer, where he rose to the level of junior partner. From 2003 to 2004, Mr. Boward worked for Michael Baker Jr., Inc., where he was a Senior Engineer, primarily involved with geotechnical investigations and retaining wall designs for the Allegheny County Department of Public Works.

In November 2004, with R. Gary Garvin, P.E., he founded Garvin Boward Engineering, Inc., where he provides consulting geotechnical and forensic engineering services. As a consulting engineer, Mr. Boward specializes in geotechnical engineering and selected components of environmental and forensic engineering.

As a geotechnical engineer, Mr. Boward is concerned with the application of civil engineering technology to aspects of the earth, including the interaction of engineering works with soils and bedrock. Of course, this knowledge is applicable to a broad cross-section of civil engineering works. Mr. Boward has been involved in numerous Phase I and II Environmental Site Assessments over the past 15 years - typically as part of property evaluations and/or transactions - which are performed in accordance with ASTM procedures/standards. As a professional engineer, Mr. Boward is qualified to present testimony on these and related areas of expertise in legal proceedings, which he has numerous times over the years.

Mr. Boward - a member of Chi Epsilon National Civil Engineering Honor Society - was named Young Engineer of the Year in 1992 by the Pittsburgh Chapter, Pennsylvania Society of Professional Engineers, who presented him with its L. W. Hornbeck Award for meritorious service in 1995. In February 2005, Joe was honored to receive the Dedicated Service Award from the Pittsburgh Chapter, PSPE. He has been and continues to be very active in technical and professional engineering organizations.

Mr. Boward has numerous affiliations in technical organizations including the National Society of Professional Engineers, Pennsylvania Society of Professional Engineers, Pennsylvania Professional Engineers in Private Practice, American Society of Civil Engineers, American Concrete Institute, and American Society of Highway Engineers.

He currently serves an instructor for the PSPE Professional Engineering Licensing Exam Refresher Course, Geotechnical Engineering Section; PSPE Awards Committee Chairman, is a member of the ASCE Pittsburgh Section Geo-Institute Board, and is a member of the National PEPP Awards Committee.


He is a registered professional engineer in Pennsylvania, Ohio, West Virginia and Maryland.

John A. Nawn, P.E., PTOE
Candidate for Treasurer

John has been a member of the NSPE and PSPE for the last 15 years. His service to PSPE has included four years as editor of the Delaware County Chapter Newsletter and three years as the Chapter President. Under John’s leadership, the Delaware County Chapter won the PSPE Outstanding Program Award in 2005. With the NSPE, John has also served as a member of the Critical Infrastructure and Homeland Security Task Force.

Professionally, Mr. Nawn is a Vice President with GAI Consultants and Managing Officer of their Philadelphia Regional office in King of Prussia, PA. With almost 20 years of experience, Mr. Nawn manages a staff of over 20 professionals providing transportation, land development, municipal and traffic engineering and construction management services for a diverse range of public and private clients. Prior to this, Mr. Nawn was the Director of Traffic and Municipal Engineering for URS Corporation and Branch Manager of their Philadelphia office. Mr. Nawn has also been a Project Manager with DMJM+Harris, and was Director or Transportation Engineering for Valley Forge Laboratories, Inc. Mr. Nawn has managed many large traffic, highway and transit projects; most recently, the 50 million dollar extension of the Southeastern Pennsylvania Transportation Authority’s R3 Heavy Rail Line form Elwyn to Wawa, PA.

John holds a Bachelor of Science degree in Civil Engineering from Drexel University in Philadelphia, PA and is currently pursuing a Master of Science at Drexel. John is a licensed professional engineer in Pennsylvania, New Jersey, Maryland and Delaware and a Certified Professional Traffic Operations Engineer, one of 1400 such professionals worldwide. Mr. Nawn has been accepted as a traffic-engineering expert in many municipalities and three courts. He designed and managed the installation of the first application of Back In Angle Parking in the Commonwealth of Pennsylvania, which was previously featured in the PSPE PE Reporter.

Besides his service to PSPE, John is a member of the Mid-Atlantic Section of the Institute of Transportation Engineers (ITE) and served as the Section’s Newsletter Editor for two years. John is also a member of the American Society of Civil Engineers, the Traffic Club of Philadelphia, the Engineer’s Club of Philadelphia and a Diplomate of the American Board of Forensic Engineering and Technology. John is a voting member of the Delaware Valley Regional Planning Committee.
John F. Bradshaw, PE, PLS
Candidate for Central Region Vice President

John Bradshaw manages the Construction Management Department for Michael Baker Jr. Inc. (a division of Michael Baker Corporation) in its Harrisburg office. John is registered as a Professional Engineer in Pennsylvania and several other states, and also registered as a Professional Land Surveyor in Pennsylvania.

John was born and raised in Schenectady County, NY, and received his Bachelor of Science degree in Construction Technology from LeTourneau University in 1965. Upon graduating, John started his career in engineering at McFarland Johnson Consulting Engineers in Binghamton, NY. Two years later, he continued his engineering career with Michael Baker Jr. Inc. in Harrisburg, PA, where he has worked for 38 years.

John has been mostly involved with transportation projects and some building projects. In his first 20 years with Baker, he worked with the structural engineering group in the design of bridges, stadiums and other types of structures. During the past 18 years, John has been involved with construction management and inspection projects. Some of more significant project involvements were the New River Gorge Bridge in West Virginia, still the longest steel arch bridge in the world; the Alaskan Pipeline support system; the Moundsville and the Huntington Sixth Street Bridges across the Ohio River in West Virginia; the raising and expansion of Beaver Stadium at the main campus of the Pennsylvania State University in State College, PA; the redecking of the Benjamin Franklin Bridge and the rehabilitation of the PATCO rail lines on the Benjamin Franklin Bridge in Philadelphia, PA; and the RAILWORKS project in Philadelphia, a SEPTA rehabilitation of nine-mile track system and structures. Currently, John is managing the construction management support and inspection teams for several PENNDOT major highway construction projects in central Pennsylvania. In addition, John has taken on a new enterprise managing the design and construction oversight for the Pennsylvania Turnpike’s service plaza development project.

John has been actively involved with PSPE since 1977. He has served as State Director, President, Treasurer, Secretary and other offices for the Harrisburg Chapter. In addition, he chaired various chapter committees, including the Engineers Week Committee for several years until the establishment of The Central Pennsylvania Engineers Week Council. John was the driving force behind the creation of the Council, which consists of professional and technical societies that support NSPE’s celebration of National Engineers Week in February. John is also an active member of CMAA (Construction Management Association of America) and ASHE (American Society of Highway Engineers).

Besides being active with professional and technical societies, John has been involved with his local church, Bible Baptist Church of Shiremanstown, PA. Some of the church functions in which he served were Deacon, Chairman of Buildings and Grounds Committee, and Sunday school teacher. In 1972, John was instrumental in the planning and establishment of a Christian school in his church, which now has over 600 students from Kindergarten to Grade 12.

Walter J. Poplawski, PE
Candidate for Northeast Region Vice President

Walter has served PSPE as Northeast Regional Vice-President since 2004-05. He is also a former State Treasurer and the current State Chair of the PSPE Professional Engineers in Private Practice (PEPP).

A member of NSPE/PSPE since 1981, he was Luzerne County Chapter President twice, in 1990-91 and 1997-98. Walter had served as either the Chapter’s State Director or the Alternate Director for ten years, 1994-2004. He has been an active participant in all Chapter activities, including chair of the Mathcounts and Engineers’ Week committees, “Candidates” continued p. 16
He and his wife Pearleen have been happily married for thirty-two years. They are the proud parents of two sons, Kevin, a licensed physical therapist, and Scott, an accounting major at King’s College, and one daughter, Mrs. Amy L. Daiute, P.E., who is also an active PSPE member. He and Pearleen are the proud grandparents of little Antonio, who is not only cute, but also gifted & inquisitive, sure signs of a future engineer.

David McCullough, P.E.
Candidate for Northwest Region
Vice President

Mr. McCullough is a Civil Engineer employed as a Transportation Senior Engineer for PBS&J in Canonsburg, Pennsylvania. Currently he is working as a Section Manager on the Design Management team for the Pennsylvania Turnpike Commission’s Mon/Fayette Expressway SR 51 to I-376 project. This project, estimated to cost nearly two billion dollars to construct, will be the largest highway transportation project ever constructed in Pennsylvania and currently ranks in the top five largest transportation projects in the United States. The project section will complete the expressway from I-68 in West Virginia to I-376 in Pittsburgh, Pennsylvania. Dave is also involved with other highway and tollroad projects in the Canonsburg office.

Dave formerly worked as a Project Manager for Michael Baker Jr., Inc., the engineering division of Michael Baker Corporation, Pittsburgh, Pennsylvania. He was part of the project team that serves the Pennsylvania Turnpike Commission as the General Engineering Consultant. When he first joined Baker, his initial assignments were on the Turnpike’s expansion projects, the James E. Ross (Beaver Valley) Expressway and the Amos K. Hutchison (Greensburg) Bypass. Dave’s work on Turnpike projects included traffic and roadway engineering review of final design construction plans as well as traffic and planning on environmental and preliminary engineering studies. He was a member of the management steering committee for the Turnpike’s 65-mile Mon/Fayette Expressway and 35-mile Southern Beltway Environmental Study for nine years, leading the traffic and engineering sub-committees. He also participated in the development of design plans for the Uniontown to Brownsville portion of the Mon/Fayette Expressway. Further, he served on the Design Management Team for portions of the Southern Beltway. Dave is also a member of the ITS Steering Committee for the Southwestern Pennsylvania Commission. Other work assignments have been on projects in Ohio, West Virginia, Florida, Illinois and Mississippi.

Dave’s prior employment includes work for the District 12 office of the Pennsylvania Department of Transportation in Uniontown, Pennsylvania. Dave was a Project Engineer in the Construction Unit, managing reconstruction projects on Interstate 70, PA Route 19 and local bridges. He also worked as a surveyor for Mounts Engineering in Washington, Pennsylvania where he was involved with many private and municipal property surveys. Projects of interest include a large boundary survey of Appalachian Trail properties in New York for the US Department of Interior, construction surveys for the Uranium Tailings Remediation Superfund site in Canonsburg, Pennsylvania and monitoring of coal mine subsidence in Greene and Fayette Counties, Pennsylvania.

Dave graduated from the University of Pittsburgh in Pittsburgh, Pennsylvania with a Bachelor of Science degree in Civil Engineering in 1983. He received a Master of Science degree in Civil Engineering from the University of Pittsburgh in 1986 where he studied Traffic and Transportation Planning. He is a registered professional engineer in Pennsylvania. He joined the Washington County Chapter of PSPE and later transferred to the Beaver County Chapter when he began working at Baker. In addition to committee work, Dave has served as a Director, Vice-President and President of the Beaver County Chapter. He has been part of the Beaver County MATHCOUNTS Committee for the past twelve years and has been the Beaver County Chapter’s Coordinator for the past eight years.

Dave was born and grew up in Washington, Pennsylvania where he was
active in East Buffalo Presbyterian Church, serving in leadership roles and as the church organist. He later moved to Beaver County where he met his wife, Linda. Linda is a Doctor of Audiology with Jameson Health System in New Castle, Pennsylvania. Dave now serves as Council President, sings in the choir and teaches classes at Holy Trinity Evangelical Lutheran Church in Beaver, Pennsylvania. His spare time is spent in the garden, running and working on his house and yard. Dave and Linda reside in Brighton Township, Beaver County.

Francis J. Stanton, Jr. P.E.  
Candidate for Vice President  
Southeast Region

Francis J. Stanton, Jr., P.E. is currently the PSPE Southeast Regional Vice President, and former State Director, President and Treasurer for the Valley Forge Chapter of PSPE. He was also President of the Union County Chapter of NJSPE. Frank is active with the Pennsylvania Initiative, the New York State Practicing Institute of Engineering, NSPE Continuing Education Task Force, and the Membership Recruitment Task Force in 2004.

In 2004, Frank became a course evaluator with the Practicing Institute for Engineering, Inc. (PIE). His involvement with PIE, NSPE, PSPE and the Valley Forge Chapter encouraged each level of the society to provide members with educational opportunities to obtain PDH's approved by the New York State Education Dept. and other states requiring PDH's for professional engineering registration renewal. Frank encourages NSPE, PSPE and Chapters to provide PDH approved programs to our membership at no additional program cost. PSPE can provide more than half of the PDHs needed for licensure renewal by attending NSPE and PSPE conferences and meetings.

Frank participated in the NSPE Membership Recruitment Task Force, and the PSPE Membership Committee, hence he was able to promote ideas and concepts between National and State organizations to attract and retain members. This included several programs from the 6 month free membership, student discounts, and adding value to our membership through chapter programs, continuing education, MATHCOUNTS, awards, and defending the professional engineer through legislative initiatives.

As a member of the NSPE Continuing Education Task Force, he worked with the NSPE staff to select the program offerings that were presented in Chicago. The program selection starts with approximately 40 programs, which the committee narrows down. Many of the programs were approved for PDHs, and attracted engineers from around the country to participate in the NSPE Annual Conference in Chicago. This year, he is again participating in the program selection for the NSPE Annual Conference in Boston. The 40 plus programs are being reviewed and assessed to provide another successful conference in Boston in 2006. For PSPE, he is involved with helping to select and arrange programs for the May 2006 Conference in Valley Forge. The annual conference in May should prove to be a successful one with a large number of attendees and programs offering PDHs necessary for our members to obtain for their license renewal.

The Northeast Leadership Conference was organized and held during the summer, and Frank provided a joint presentation with Heather Anderson, the NSPE Chapter Liaison, to update the Northeast Chapters with the new web page format, membership programs, educational opportunities, and webinars. The leadership conference was a half day event with about 40 members in attendance, where information about programs, chapter activities and best practices for running a chapter were explored.

Most recently, Frank has been working to promote engineering with Sara Frailey, P.E. of the Public Relations committee. They are researching and scripting messages that will promote engineering and inform the public of professional engineers. Hopefully, we may be able to hear radio messages promoting engineering as we drive to work. Radio campaigns are being initially planned for Pittsburg, Harrisburg, and Philadelphia areas. If successful, other areas of the state will be hearing our message as well.

Frank graduated from Villanova University in 1981 with a Bachelors Degree in Mechanical Engineering. After graduation Frank was employed by Alfa-Laval Thermal and Food & Dairy Groups in Fort Lee N.J., Tower Performance, Inc., Amstar (Domino Sugar), British Oxygen Corporation (BOC Gases) before becoming Vice President for design-build and consulting engineering firms.

In 2001, Frank and Ann Marie, his wife of twenty years and also a graduate of Villanova’s mechanical engineering program, organized The ENC Group, LLC a DBE providing project support services to the industrial, commercial and governmental markets. They have provided operating, and engineering companies with technical support for projects in the U.S., Mexico, Canada, Sweden and India. In addition, they have completed the designs for major facility expansions with material handling upgrades, process plant relocations, power plant upgrades, boiler installations, process piping and process vessels, and they are active in the transportation market providing project support activities such as scheduling and cost estimating for major projects.

Frank and Ann Marie reside in Richboro, PA with their three sons, Francis, Matthew and Jonathan. The three boys are competitive swimmers on Council Rock High School South’s Swim & Diving Team, Tri-Hampton YMCA Swim Team and Council Rock Swimming & Diving Club Team.

Richard P. Aulenbach, P.E.  
Candidate for Vice President  
Southeast Region

Richard P. Aulenbach received his BS in Mechanical Engineering from the University of Pittsburgh and his MBA in Administrative Management from St. Joseph’s University. Rick continued his education earning a Bachelor of Science in Mechanical Engineering from the University of Pittsburgh, an MBA Administrative Management from St. Joseph’s University, Leadership in Professional Service from Harvard Business School and New “Candidates” continued p. 18
“Candidates” continued from p. 17

Developments in Manufacturing Process Technology from Massachusetts Institute of Technology.

Rick began his career with Aluminum Company of America (ALCOA) in Pittsburgh, PA as a mechanical engineer. He joined Gilbert Commonwealth (which became Parsons Power) as a mechanical engineer and progressed to the position of Project Manager for major power and industrial projects.

Rick founded RPA Associates Inc. in 1989 which is headquartered in Wyomissing PA and has a staff of more than 80 people located in offices in Pennsylvania, New Jersey, Tennessee and Florida. RPA Associates Inc. is a professional engineering consulting firm that offers comprehensive mechanical, electrical and process engineering, machine design, and structural analysis services to pharmaceutical, educational, industrial, institutional, and utility clients. RPA serves local, regional, national and international clients such as GlaxoSmithKline, Carpenter Technologies and Kutztown University.

In addition to serving his profession, Rick has served on the Board of Directors for the American Red Cross, Penn State Berks-Lehigh Valley Industrial Advisory Council, Alvernia College, Presidents Advisory Council and Northampton Community College, Advisory Group. Rick is an Adjunct Instructor of Mechanical Engineering Technology and Fluids Mechanics Program at Penn State University.

Michel J. Sadaka, P.E.
Candidate for Southwest Region Vice President

Michel J. Sadaka is founder and president of Sadaka Corporation, a project management and engineering consulting firm. With more than 22 years experience in the Construction Management and Engineering fields, he is recognized as an expert in the construction claims field and has testified on many occasions in court and arbitration hearings in that capacity.

Michel received an M.S.C.E. in Construction Management from the University of Pittsburgh, and a B.S.C.E. with an emphasis on structural engineering at the University of Massachusetts at Dartmouth.

Michel has been actively involved with PSPE since 1993. He has served the Pittsburgh Chapter as Construction Legislative Council delegate, President, and a board member for the past five years. He currently serves as chapterwebmaster, chair of the regional MATHCOUNTS program, and Alternate State Director. In the past, Michel has chaired the Pittsburgh Chapter task force to review the Pennsylvania Registration Act, the Engineer’s week banquet committee, and the awards committee.

At the state level, Michel currently serves as PSPE Southwest Region Vice President and he chairs the recently formed PSPE Professional Development Task Force. He is also the Professional Engineers in Private Practice (PEPP) Southwest Region Vice Chair.

In addition to being active with PSPE, Michel is also a member of the American Arbitration Association National Panel of Commercial Arbitrators (Construction Industry) and an associate member of the Constructors Association of Western Pennsylvania and serves on the Professional Services Council for the CAWP.

Reported as amended from Senate Urban Affairs and Housing Committee, read first time, 9/27/2005

New Bills Introduced


Resolution directing the Legislative Budget and Finance Committee to investigate and report on the advantages and disadvantages of allowing small businesses to buy coverage for employees through the adult basic coverage insurance program.

Referred to House Commerce Committee, 9/26/2005

House & Senate Fall Session Days Schedule

2005 House Fall Session Schedule

<table>
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<th>Month</th>
<th>Days</th>
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<tbody>
<tr>
<td>December</td>
<td>5, 6, 7, 12, 13, 14, 19 (non-voting)</td>
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2005 Senate Fall Session Schedule

<table>
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<tr>
<th>Month</th>
<th>Days</th>
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<tr>
<td>October</td>
<td>17, 18, 19, 24, 25, 26, 31</td>
</tr>
<tr>
<td>November</td>
<td>1, 2, 14, 15, 16</td>
</tr>
<tr>
<td>December</td>
<td>5, 6, 7, 12, 13, 14</td>
</tr>
</tbody>
</table>

Copies of all bills of interest are available from the PSPE office, or they can be accessed via the Internet at www.legis.state.pa.us/WU01/LI/BI/billroom.htm.
Political Action Committee

2005 Sponsor Recognition

Many thanks to the following individuals who contribute to the PSPE Political Action Committee fund. The PAC fund allows PSPE lobbyists to influence bills on behalf of PSPE members. PSPE is very active at the Pennsylvania state capitol. Each session we monitor legislation that could impact PSPE members in their profession. Your contributions are critical as PSPE affects bills such as those found in the article “On Capitol Hill.”

To receive monthly legislative updates from the PSPE listserv, simply send an e-mail message to jennifer@wannerassoc.com with the subject: “add me to the monthly update.” To support to Political Action Committee, send a PERSONAL check to PSPE/PAC, 908 N. Second Street, Harrisburg, PA 17102.

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Civil Engineer – Harrisburg, PA
Bachelor’s degree required as well as two to six (2-6) years of relevant experience. Experience in storm water, land development or other related fields of expertise preferred. Work may entail design, planning, feasibility studies, permitting, project management and/or construction oversight. Qualities shall include a self-starting individual requiring minimal supervision.

Civil/Environmental Engineer – Hunt Valley, MD
Bachelor’s degree required as well as four to six (4-6) years of relevant experience in sanitary sewer, pump station, and wastewater treatment plant design and construction oversight preferred. Work may entail planning, feasibility studies, design, permitting, project management and construction monitoring. Qualities shall include a self-starting individual requiring minimal supervision. PE registration preferred.

Senior Electrical Engineer - Harrisburg, Lehigh Valley & Philadelphia, PA
Bachelor’s degree, ten (10) years relevant experience in Consulting Engineering. PE registration required.

Electrical Engineer - Harrisburg, Lehigh Valley & Philadelphia, PA
Bachelor’s degree required as well as four to six (4-6) years relevant experience. PE registration preferred. Experience with AutoCAD also preferred.

Fire Protection Engineer – Philadelphia, PA
Bachelor’s degree required with a minimum of two to five (2-5) years applicable fire protection engineering experience. EIT registration required.

Senior Mechanical Engineer – Harrisburg & Philadelphia, PA
Bachelor’s degree required as well as a minimum of five (5) years institutional and commercial experience with a consulting engineering firm. PE registration preferred.

Mechanical Engineer – Philadelphia, PA
Bachelor’s degree required as well as one to three (1-3) years experience with a consulting engineering firm. EIT registration preferred.

Mechanical Engineer – Washington, DC
Bachelor’s degree required with a minimum of two to five (2-5) years HVAC systems design and commissioning experience. Experience with AutoCAD Building Systems 2005 software helpful but not required. EIT registration preferred.

Plumbing Engineer – Philadelphia, PA
Bachelor’s degree required as well as four to six (4-6) years relevant experience. PE registration preferred. Experience with AutoCAD also preferred.

Senior Structural Engineer – Philadelphia, PA
Bachelor’s degree, ten (10) years relevant experience in building design and a PE are required. An MS is preferred.

For additional information on our firm please visit our website at www.brinjac.com. We offer a competitive salary, benefits package and employer-matched 401(k) program. Qualified applicants should submit resume and salary requirements in confidence to:
Brinjac Engineering, Inc.; Attn: Human Resources; Post Office Box 1290; Harrisburg, PA 17108-1290. Fax (717) 260-1103; E-mail hresources@brinjac.com. EOE. M/F/V/D.

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H.F. Lenz Company is seeking a project engineer for our Johnstown, PA headquarters. We are a nationally recognized, multi-disciplined leader of professional engineering design services in the areas of health care facilities, educational facilities, national, state, and municipal government buildings, high rise office buildings, financial institution projects, and historic renovation projects. We offer career opportunities in a highly dynamic, continuous learning, team focused environment.
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Located in the Laurel Highlands of South Central PA, an area with an outstanding quality of life, we offer a comprehensive and competitive total compensation package for the selected individual. Submit a letter of interest and resume in confidence to:

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Human Resources, H.F. Lenz Company, 1407 Scalp Avenue, Johnstown, PA 15904. FAX (814) 269-9400; E-Mail: rmciver@hflenz.com. NO PHONE CALLS PLEASE! AN EQUAL OPPORTUNITY/ AFFIRMATIVE ACTION EMPLOYER

Electrical Project Engineer

H.F. Lenz Company is seeking an engineering professional for our Johnstown, PA headquarters. H.F. Lenz Company, a 200 employee firm, offers a career opportunity in a highly dynamic, continuous learning, team focused environment. As part of a team that focuses in the design of mission-critical data centers, we offer a comprehensive and competitive total compensation package for the selected individual.

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Interested candidates should submit a letter of interest and resume in confidence to: Human Resources Director, H.F. Lenz Company; 1407 Scalp Avenue; Johnstown, PA 15904. E-Mail: rmciver@hflenz.com. FAX: 814-269-9400. NO PHONE CALLS PLEASE. AN EQUAL OPPORTUNITY/ AFFIRMATIVE ACTION EMPLOYER.

HVAC/Mechanical Engineer/Project Manager

RAM-TECH Engineers, located in Philadelphia, Pennsylvania and Syracuse and Buffalo, New York is a consulting engineering firm specializing in Mechanical, Electrical, Plumbing, Fire Protection and Special Systems Engineering and Design Services. The Firm provides quality-engineering services with close personal attention given to meeting our clients’ design and operational criteria. Included in our clientele are Architects, Federal, State and Local Governmental Agencies, Institutional & Commercial Facilities, Health Care Facilities, Hospitals, Schools & Colleges, Electric Power Systems and Industry. RAM-TECH Engineers is seeking a mid to senior level HVAC/Mechanical engineer, with 10 to 15 years experience, for its Philadelphia Office. Candidates will have a high level of responsibility and will be expected to manage all aspects of a project from conception through completion. When acting as Project Manager, candidate will be required to take the lead in providing direction and information for all trades to ensure successful project completion. Candidates must have excellent verbal and written communication skills, leadership skills, knowledge of mechanical codes, and software skills (AutoCAD 2002, Word, Excel, etc.). Pennsylvania PE license required, PE in other states and fire protection experience a plus. RAM-TECH Engineers offers a full range of employee benefits and compensation will be based on experience. For immediate and confidential consideration, send your resume to RAM-TECH Engineers, 2 International Plaza, Suite 243, Philadelphia, PA 19113 or email: msilks@ramtechengineers.com (Candidates only). No phone calls or unscheduled appointments will be entertained. Visit our web site at www.ramtechengineers.com.
Cooperation is key to success for highly accelerated design-build project.

In 2004, Pennsylvania Department of Transportation (PennDOT) Engineering District 5-0 undertook one of their first design-build projects, which involved the interchange of Interstates 80 and 380 interchange in Monroe County.

Advertised as Project No. 70303 on the Department’s ECMS website, James D. Morrissey, Inc., an established contractor based in Philadelphia, became the successful bidder and had selected Pickering, Corts & Summerson, Inc., of Newtown, PA, as their engineering design consultant. These three major participants developed a partnership that was essential to successfully completing a very challenging project.

Due to the harsh Pocono region winters and heavy truck traffic, the Interstate I-80 and I-380 interchange became a maintenance problem for PennDOT Engineering District 5-0. This section of Interstate was originally constructed in 1964 and reconstructed in 1983 using various pavement designs for the existing conditions. In recent years, the District’s Maintenance Unit had been spending more and more resources repairing and patching the eastbound lanes due to progressive deterioration. Repairs were taking up to 6 weeks to complete but only providing 3 months of service life. The rate of deterioration had become such that the repairs were not lasting through the winter. The conditions were creating safety concerns and traffic congestion during each repair cycle, making reconstruction high on the District’s priority list.

When funding became available in March 2004, the District seized the opportunity to advance the I-80 Eastbound/I-380 Southbound Interchange project, which became S.R. 0080 Section 09S. Faced with having to deal with another winter of repairs and congestion, the District chose to accelerate the project with the goal of completing construction before the next winter season. This set the stage for an ambitious schedule that would showcase the resourcefulness and determination of all those involved. Their efforts are an excellent example of the partnering and teamwork needed to complete a project in an unprecedented time frame of less than 9 months from design concept to substantial construction completion.

The District responded to the challenging schedule by condensing the initial administrative process into two short months. This effort included evaluating the project; determining the design parameters, including the analysis for full depth pavement reconstruction; identifying needed geometric and drainage improvements; evaluating and processing design exceptions; obtaining necessary environmental clearances; developing the contract and proposal for bidding; and then advertising the project. The District’s staff worked diligently to move the project forward and consulted with outside agencies to evaluate regulatory requirements and ensure that the project would advance in a timely manner.

Due to the District’s committed effort, the project was advertised on May 7, with a let date of June 18 and an Anticipated Notice to Proceed (NTP) date of August 16, 2004. Their dedication did not stop once the project was advertised. Knowing the challenging construction schedule, the District ushered the project through the award process and issued NTP in just two weeks, a process that could take as much as 2 months. This gave a needed early start for the contractor’s design firm.

Knowing the hectic schedule that would ensue, Pickering, Corts & Summerson, Inc. (PC&S) began developing the engineering design as soon as the design-build team was formed in late-May, three weeks before the let date. PC&S identified traffic control as the critical component that had to be resolved prior to the bid. Within the pre-bid period, they developed the highway geometry, coordinated with the contractor, and designed a functional traffic control scheme that gave the contractor the green light to continue pursuing the project. Also within this period, PC&S identified other key project components, including coordination with project stakeholders, and developed a design schedule that would allow the contractor to start construction in just six weeks from NTP. Needing to condense the design effort, the schedule established a critical path which promoted only those design components that were absolutely necessary for construction to begin and demoted all other components that could be completed during the initial construction stage. The Traffic Control Plan (TCP) is an example of this approach. After coordinating with the District’s Work Zone Unit, PC&S divided the TCP to focus on the development of only those stages needed to start construction. This greatly reduced the time required for design and review of the initial TCP submission and spread the remaining TCP development over a more manageable time period.

The key to success during design development was forming a true partnership between the District, the designer, and the contractor. Any delay could have pushed construction into the winter season and closed down the project. PC&S maintained continual contact with the project stakeholders to ensure that there were no surprises that might compromise the schedule. PC&S contacted both the contractor and the District’s reviewers prior to and during development of each project element to discuss concepts and assure quick approval. The design schedule could not have succeeded without the District’s commitment to one-week review periods for all submissions. Another key to
success was the cooperation from the Monroe County Conservation District, who gave their full support to advancing the project.

All of this effort would have been for naught, without the resourcefulness of the contractor, James D. Morrissey, Inc. (JDM). With a construction schedule of just over fifteen weeks, JDM implemented a 6-day workweek that included 10 to 12 hour workdays. They developed a process that broke construction into three logical phases: excavation, subbase preparation, and concrete paving. JDM organized their construction crew to include three excavation gangs to keep abreast of the other less time consuming construction sequences. The experience of the JDM construction crew in constructing concrete pavements was instrumental to the project’s success. Their skill allowed them to maintain a high level of quality during the fast paced construction that was needed to maintain the sequencing of the Traffic Control Plan.

Partnering and teamwork extended into the construction phase. JDM, the District’s Construction Unit, and the Monroe County Conservation District all worked together to meet the established completion date. There was a cooperative effort to resolve on-site issues and concerns quickly, and without delay. In this manner, JDM was able to open the Interstate to traffic on October 11, 2004, six weeks ahead of schedule.

Given the success of the “Eastbound Section,” the District planned the “Westbound Section:” S.R. 0080, Section 105, which was awarded in August of 2005. James D. Morrissey, Inc. was again the successful bidder, and maintained their teaming with Pickering, Corts & Summerson, Inc. Construction is scheduled to begin in March of 2006, with substantial completion slated for October. The schedule is not as intense as the “Eastbound Section,” but it does avoid construction and traffic restrictions during five holidays and Pocono Raceway events, all of which make for another challenging construction project requiring the same resourcefulness and determination from all those involved.

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Railroad were obsolete within twenty years, the Pennsylvania Railroad as enabled by the Horseshoe Curve was king for more than a century. Sadly it followed the life cycle of a king – vigor, upstarts, forming alliances for strength, fatigue, and decay. Fortunately, mechanical systems are subject to renewal and the Horseshoe Curve remains important both as a path and as a destination. As with every previous stage in Pennsylvania development, without the engineers as empire builders, the country’s growth and development would have been a risky business.

The “Risky Business” column offers articles covering liability from both the legal and engineering perspective. Mrs. Bowman’s articles share general information and should not be relied upon as professional legal advice of either a general or specific nature. Rebecca Bowman is a civil engineer-attorney in solo private practice in McMurray, Pennsylvania for more than 25 years. Her practice is a certified woman-owned business. Her B.S. in Civil Engineering is from the University of North Dakota.

Bibliography


Thank You

PSPE would like to extend a sincere thank you to the PSPE Life Members who have served our society for many years. The following PSPE Life Members continued to support the work of our society in 2005 by making voluntary monetary contributions. Their support helps to provide core membership services, including publication of the PE Reporter magazine, management of Pennsylvania MATHCOUNTS, and influencing legislation to protect the integrity of the Engineer’s license.

On behalf of all PSPE members and staff, we thank you for your support. May you enjoy a happy and healthy 2006.

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