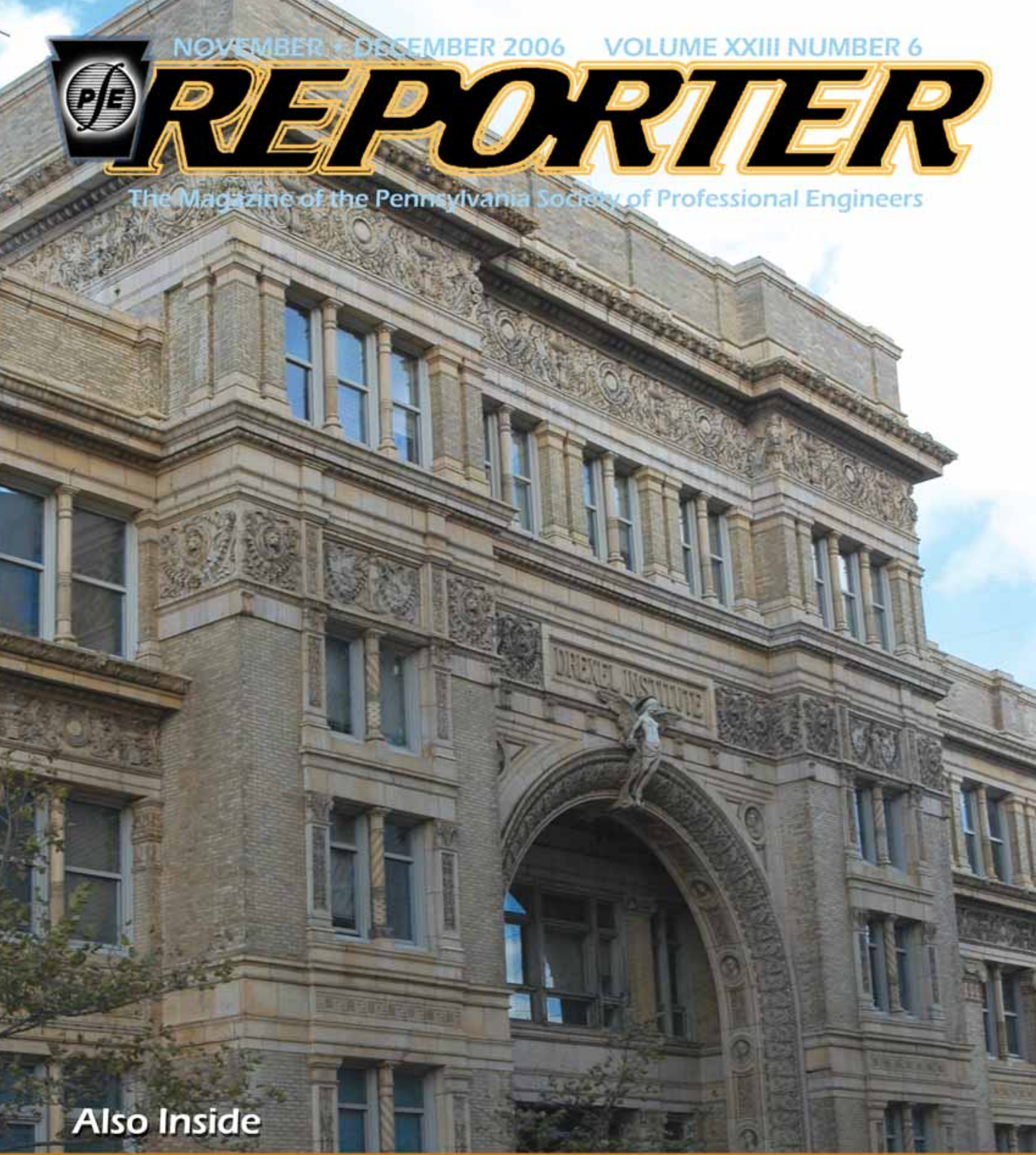
NOVEMBER • DECEMBER 2006 VOLUME XXIII NUMBER 6

# REPORTER

The Magazine of the Pennsylvania Society of Professional Engineers

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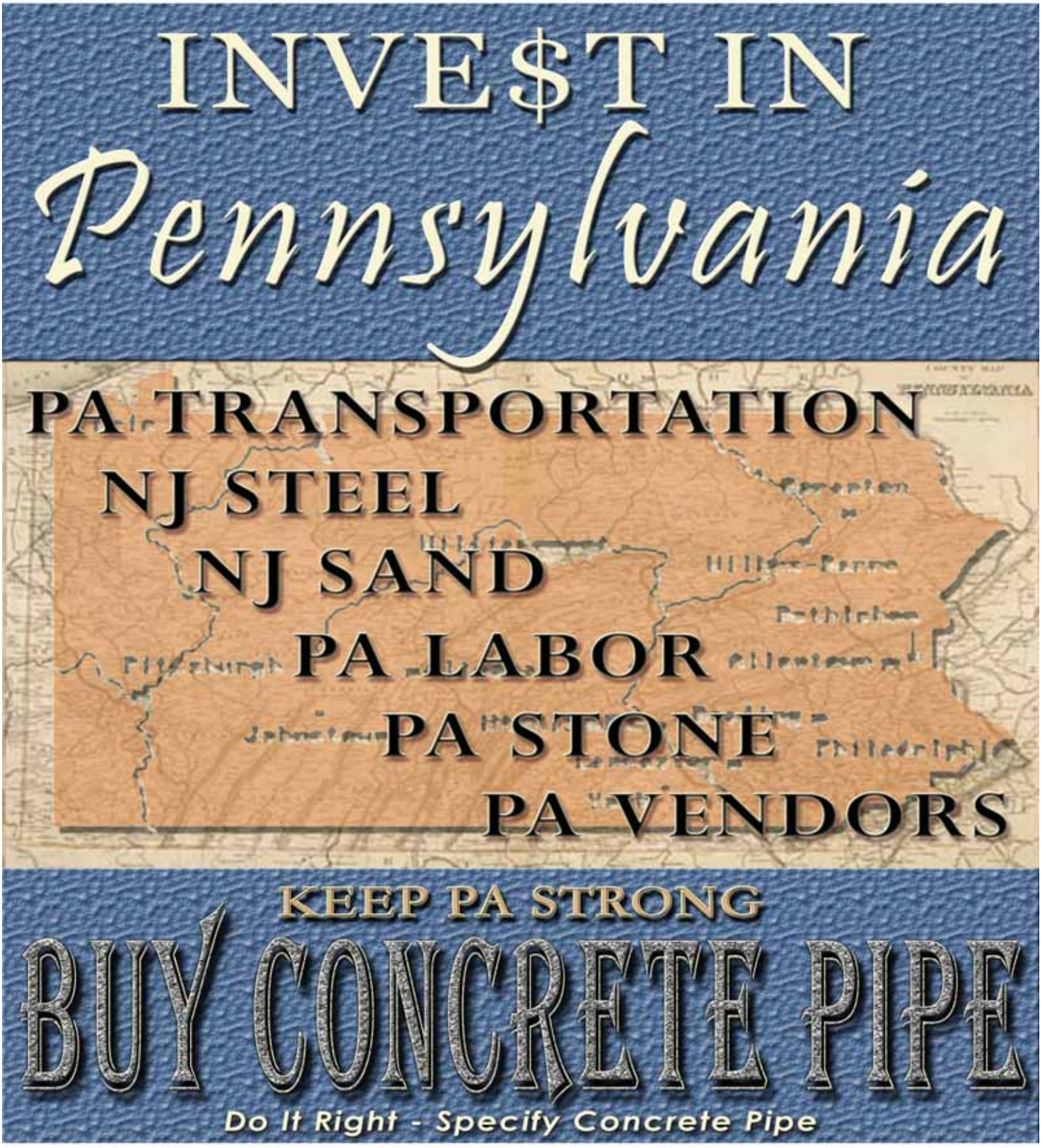


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The *PE Reporter* is published six times annually by the Pennsylvania Society of Professional Engineers (PSPE) located at 908 N. Second Street, Harrisburg, PA 17102. Phone: (717)441-6051 • www.pspe.org. Opinions expressed by authors herein do not necessarily reflect the opinion of PSPE.

## NSPE Code of Ethics for Engineers

### Engineers' Creed

As a Professional Engineer, I dedicate my professional knowledge and skill to the advancement and betterment of human welfare. I pledge:

To give the utmost of performance;

To participate in none but honest enterprise;

To live and work according to the laws of man and the highest standards of professional conduct;

To place service before profit, the honor and standing of the profession before personal advantage, and the public welfare above all other considerations.
In humility and with need for Divine Guidance, I make this pledge.

***Adopted by National Society of Professional Engineers, June 1954***

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## Columns



## Features



### Advertisers



### Cover Photo

*Dumack Engineering, P.C. performed structural engineering services for Drexel University, consisting of renovation work to their historic Main Building. The building, over 150 years old, is a landmark on campus and the original facility used by the university.*

# PSPE Strategic Plan 2006-08

### Vision

PSPE is the recognized voice and advocate of all Professional Engineers who are licensed in Pennsylvania.

### Mission

Promote and defend the interests of Pennsylvania's Professional Engineers

### Values

Live and work in concert with The Engineer's Creed and The Professional Engineer's Code of Ethics

## Objectives

I Increase the stature of the Professional Engineer's license as it is viewed by the general public, owners and operators of businesses, educators, and non-licensed engineers.

II Demonstrate and continually improve the value of membership in PSPE.

III Protect the Professional Engineer's license and title through careful monitoring of legislation and proactive efforts.

IV Sustain or improve membership level through each year of PSPE operations.

## Strategies

I Value of the Professional Engineer's License and Engineering Services: Increase the understanding of what Professional Engineers do and work to ensure that compensation received by Professional Engineers is truly commensurate to the services delivered.

II Value of PSPE Membership: Deliver value in services to members that elevate their competence and abilities to practice as Professional Engineers.

III Protect the Professional Engineer's License: Routinely scan all upcoming legislation for potential infringement and devaluation of the PE license and proactively work to eliminate existing or pending infringements.

IV Membership: Increase membership base to better serve and represent the interests of Professional Engineers in Pennsylvania.

## Priorities

I Establish a Public Relations Committee within one (1) month of approval of the September Board of Directors Meeting. Actively publicize PSPE's involvement in Mathcounts beginning no later than October 31, 2006.

II Build membership committees in each PSPE Chapter by December 31, 2006.

III Re-organize the Title Pursuit Task Force by October 31, 2006.

IV Re-organize the Legislative Committee by October 31, 2006 to address all issues regarding legislation related to licensure and to proactively push for qualifications based selection (QBS) for private, municipal and state engineering contracts.

V Meet with owners and managers of engineering firms, industries and government to determine what types of programs within PSPE can specifically aid in their employees' development. Complete six (6) such meetings by November 30, 2006.

VI Resume awards programs in all practice divisions and maximize the number of PSPE members nominated for Fellow status in NSPE. Develop awards criteria for all new 2006-07 awards by November 30, 2006.

# President's Message

*Harvey D. Hnatiuk, P.E., F.NSPE*

## Ready, Set, GO!

Football teams across the country have heard the words "Ready…Set…Go" for months now. The college bowl season and NFL playoffs loom ahead. Games played each week are more and more critical to teams with hopes for titles, high rankings and prestige.

Ready!
"The best way to predict your future is to create it."
~ Steven Covey

Such laurels and accolades almost all the time go to the teams that take the words "Ready, Set, Go" seriously from day one of training camp until the clock on the field of the last game of the year reads "0:00" for the last time.

Our PSPE year, for it to be successful, needs to include some of these same elements. The good news is that we are off to a great start and moving forward. Early on, the importance of words that begin with the letters "E" and "I" were put forth as focal points for our year. In my first President's Message, "engagement" and "initiative" were identified as two keywords for our year.

We prepared well, taking the initiative to create a new strategic plan. The development of the plan gives us the opportunity to focus all efforts along the same strategic paths. As such, our collective energies will contnue to move the ball forward.

The process began in June in Carlisle at a strategic planning retreat and leadership conference. We learned about strategic planning in general and then worked as a team to identify issues critical to Professional Engineers and to our PSPE.

Work continued through the summer with a survey of PSPE members to learn what matters most. About 20 percent of the members for whom we have accurate e-mail addresses participated in the survey. From what I am told, that is an excellent survey. The survey asked for comments and over 100 members took the time to provide additional thoughts on what needs to be done. To say that our members were engaged in this process is an understatement.

Set!
"The voyage of discovery is not in seeing new landscapes but in having new eyes."
~ Marcel Proust

The strategic plan could not have been done without PSPE members being involved. Thank you to all members who took part in its development.

Using results from the survey and discussions within the executive committee the plan was written. Several strategic plans – including NSPE's new strategic plan and plans from other organizations – were reviewed.

PSPE's new strategic plan (p. 2) was presented to and given a "thumbs up" by our Board of Directors in late September. And now we come to the critical part of our year.

The most important phase of our year is upon us. Another "E" word presents itself: Execution…as in "execution of our new strategic plan." To paraphrase management guru, Peter Drucker: "In the end, all good strategic plans morph into hard work." Without "working the plan," the words in that plan - no matter how much wisdom and foresight they contain and how well those words are composed - remain just words.

Two more keywords that begin with "E" and "I" come to mind: Energy and Involvement. Several committees have re-organized and are ramping up their activities for the 2006-07 PSPE-year. It is exciting to see how many members of PSPE have stepped forward to be engaged in this great organization.

Other committees remain on the launch pad in need of volunteers to lead and work toward the objectives of our new strategic plan…to make sure that the words in that plan jump off the page repeatedly in the form of actions that satisfy our mission and move us toward our vision.

GO!
"There are two ways to face the future. One way is with apprehension, the other is with anticipation."
~ Jim Rohn

Your energy and your involvement in PSPE have never been more critical to the future of this organization than they are now. If ever there were opportunities for members to provide leadership, insight, and most importantly action, that time is now. We are on the road to making PSPE an organization more vibrant, more active, and more attractive to prospective members.

Thank you for all you do for PSPE. ■

Harve Hnatiuk, P.E., F.NSPE
E – harvehnat@aol.com

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# On Capitol Hill

*John D. Wanner, CAE*

**Continuing Education Bill - stripped down - moves toward passage**

Senate Bill 655 was reported out of the House Professional Licensure committee on October 17th, after it was essentially gutted. As the Legislature winds down to a precious few days, the committee legal staff was unwilling to sign off on all provisions in the bill. As a compromise, the committee Chairman offered to move a bare bones form of the bill so it could pass before the end of session. That called for removing all title protection language, detailed wording on the continuing education section as well as provisions included in the bill regarding geologist licensing procedures.

The amended bill simply gives the Registration Board the mandate to develop criteria for licenses to obtain 24 hours of continuing education every two years. It also lists the circumstances under which a licensee can have the education requirements waived. The Board will have no more than 18 months to adopt the regulations. After discussions with the Board, PSPE anticipates that regulations will most likely be very close to the NCEES model regulations on which the Society relied to draft the continuing education section of Senate Bill 655. A final vote on the bill in the House is expected to occur before the end of session. It will then need to go back to the Senate for agreement on the House amendments.

Coincidentally, a bill was introduced this month in the House to require 24 credit hours of continuing education for architects. House Bill 3034 does not have time to pass this session, but will be reintroduced next year with the AIA's support.

## Legislative Activity

**HB 2134 RE: Social Security Number Privacy Act (By Rep. Russ Fairchild, et al)**

Provides that forms for a professional license or certification, occupational license or certification, or recreational license required by a Commonwealth agency or municipality that requires individuals to provide their Social Security numbers (SSN) must provide individuals the option to use a driver's license number or a non-driver's identification number issued by the department as an alternative. When an individual uses the alternative identification number, the individual must submit a consent declaration authorizing the Department of Transportation to release the individual's SSN to the Commonwealth agency or municipality. This would not apply to forms required by the department for the purpose of driver licensing and non-driver identification. The bill states that no health insurer may place an SSN upon any health insurance identification card.

*Passed House, 11/1/2005 (197-0)*
*Passed Senate, amended, 10/18/2006 (48-0)*
*House concurred in Senate amends to House amendments, with further amendments, 10/23/2006 (189-0)*
*Rereferred Senate Rules and Executive Nominations, 10/23/2006*

**HB 2213 RE: Training Of Inspectors (by Rep. Rod Wilt, et al)**

Amends the Pennsylvania Construction Code Act further providing for training of inspectors by stating that by October 1, 2006, current code administrators must meet the training and certification requirements of this act in order to be certified. The bill states that the department would establish a process for citizens to register complaints about the technical competency of code administrators. If the department determines that there is reasonable cause to believe a code administrator is not technically competent, the department may require the code administrator to appear before a technical competency board to determine the individual's technical competency. The bill states the department is empowered to decertify a code administrator for a reason other than technical competency if it determines there is just cause. Lastly, the code administrator has the right to receive a hearing before the department on decertification.

*Rereferred to House Labor Relations Committee, 9/27/2006*

**HB 2696 RE: Uniform Construction Code Advisory Council (by Rep. Dave Steil, et al)**

Amends the Pennsylvania Construction Code Act providing for the Uniform Construction Code Advisory Council. The Council would gather information from the general public, including municipal officers, building code officials, construction code officials, licensed design professionals, builders and property owners, concerning issues with the Uniform Construction Code raised by council members, the general public, or changes proposed by the General Assembly. The Council would evaluate the information and make recommendations. The bill also provides for the composition of the Council.

*Amended on House floor and Passed House, 10/23/2006 (189-0)*

*"Capitol" continued p. 21*

# Risky Business

*Rebecca Bowman, PE, Esq.*

## Your Dream Book

I saw commercials this weekend for The Toy Book (to help you build your Christmas list) and Ameriprise's Dream Book (to help you plan for fulfillment of your future financial dreams). Well, here's my commercial: www.eweek.org will help you plan for your retirement. That's right; go take a look. You'll find that this is the site to prepare and equip you for Engineers' Week.

*...www.eweek.org will help you plan for your retirement. That's right; go take a look.*

First you say, "But Engineers' Week isn't until February. Why are you writing about it for the November/December issue?" There are two reasons. First, it's too late for me to write about the importance of voting. I do certainly hope that you exercised your precious franchise on November 7th and, if you really could not, that you planned ahead sufficiently to file an absentee ballot. Second, you'll need some advance time to do what I'm going to ask you to do.

Next you say, "What does Engineers' Week have to do with my retirement?" Well, interesting that you should ask. In the past week alone, three different engineers, an architect, and two surveyors have moaned to me about their fervent wish to retire. They can't, though, because the work for which they have contracted will take them out several years and they can't find competent people to replace them. One friend is struggling mightily to semi-retire by working only in the afternoons, but his firm's work production schedule is suffering.

I believe that the solution to this widespread challenge is to excite students about engineering and involve them in engineering activities. And that's where Engineers' Week gives you an easy starting point. At the website, you'll find interesting activities for all age groups. You'll also be able to order videos and worksheets, brochures and bookmarks for you to use in schools. That's actually the easy part, though.

The next step will require some initiative. You and/or your chapter will have to decide that this is important. Get into the schools. If you have children or grandchildren, their teachers can be good entry points. Call the science department, the principal, the gifted coordinator and/or the guidance office. Keep calling. Show up and wait until someone will talk to you. If you absolutely cannot get into the school program, talk to the PTA/PTO. In fact, you may want to enlist the PTA's support in seeking entrance. The school may want to move you to Career Day. That's only a last resort. It's sometimes frustrating and you may feel that no one is showing appropriate appreciation of what you're offering. Get over it. This is really important, both to you and to our future world.

Next you say, "What is it that I want the school to let me do?" You (and other engineers in your chapter) want to visit as many classes as possible. Ideally, you would meet with all the classes in a given grade level. (I'll say a little more about that in a few minutes.) It may take a couple of days for you (and your colleagues) to meet with every section. The science class is a good fit, but math class works, too. Even social studies can work if you focus on the social impacts of engineering. Pick a brief, age-appropriate video to kick things off, followed by a brief age-appropriate activity or demonstration. Your goal is two-fold: to show how exciting and fulfilling engineering is and to show how pervasive and important engineering is. Talk with the teacher ahead of time to get a feel for the interests of the students. You may learn that a focus on environmental impacts will generate the most interest. During an Olympic year, I focused on the design of the snowboard event. One year, I got sent to what was called "home economics" when I was in school. (It has another name these days, but I forget what it was.) I spent my time showing how the list of ingredients in a recipe is just a bill of materials and a sewing pattern is just a set of machine drawings. Adapt. That's what we do best.

My preference is to visit kindergarten, third grade, and eighth grade. Here's my rationale. We have the good fortune that Engineers' Week generally falls a week or so before the eighth graders pick their freshman classes. In my district, if you don't push yourself in math and science in ninth grade, it's very difficult to step up in later years. Each year I have been permitted to make a presentation, at least one student has accepted the challenge and changed his/her selections to the more challenging. That's one more student positioned to explore engineering in college.

*If I can do anything to reduce math and science anxiety, I want to.*

Why third grade? I have read several studies that show that third and fourth grades are those in which students somehow pick up the math-is-hard vibe. I like to go in and grab their attention and show them how they are using math and science every day, how it's accessible and not scary, and how it's important to their futures. My favorite activity for this group is to pretend to be a robot taking their directions to make a peanut butter and jelly sandwich. I try to make sure that I work with the teacher or the PTA/PTO to put together a take-home packet about local programs and classes to help students get excited about math and science. Ladies, it's especially important that you get out there for this. Third and fourth grades are when girls are shutting down on math. They need to see that women can be fully-functioning humans and still have career fun with math and science.

Why kindergarten? Because it's fun. In kindergarten classes, I challenge the children to find something in the classroom that hasn't been engineered. No matter what they name (and they have fun getting silly), I can explain how it has been engineered. The insulated windows, their fluoridated teeth, the conditioned air. . . They haven't been able to stump me yet.

Assemblies can be done. That's sometimes the offer I get for the lower grades. We can make it work. Usually there is such a huge curriculum to cover in the upper grades, that I can't get a whole period. If I only get fifteen minutes, I give a homework assignment to get the students thinking.

I prefer not to speak only to gifted classes. First of all, I'm much more likely to be preaching to the choir. Second, there are plenty of "average" future engineers out there. Third, even with the population that isn't college-bound, the shortage of qualified machinists and drafters is nearly as severe as the shortage of engineers. If I can do anything to reduce math and science anxiety, I want to.

When I'm talking to the teachers and/or counselors, I take advantage of the opportunity to tell them about things below the curriculum radar. The TV show, "Numbers," sponsored by Texas Instruments, offers supportive curriculum components to help teachers integrate the episode's concepts into the classroom. Competitions like Toshiba's Exploravision give students the chance to earn rewards and prizes for taking creative engineering thinking to the next level.

Gee, I guess that you can tell I feel pretty passionate about this. I do. Each of these opportunities represents a way for you to prevent your retirement from being a risky business. ■

*My favorite activity for [3rd grade students] is to pretend to be a robot taking their directions to make a peanut butter and jelly sandwich.*

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# The Evolution of Fire Alarm Systems

*Rajeev K. Arora, P.E. – Arora Engineers, Inc.*

Fire alarm systems have been an integral part of society since the late 1800's. The objective of fire alarm systems has remained consistent: reduce the loss of life from fire and limit property losses from fire. The fire alarm industry has evolved tremendously over time to ensure that these objectives are met. Research and development has occurred in system technology, design practices, emergency response methods, and system interface applications.

International events over the last five years have caused the industry to re-evaluate the approach to fire alarm system planning, design, installation, testing and maintenance. Fire alarm systems in the modern age must consider events caused by fire, weather, nature, terrorist attack, biological and hazardous chemical release. Such systems are on the forefront of the fire alarm industry and will change the way systems are designed, configured, manufactured, installed, tested, and maintained.

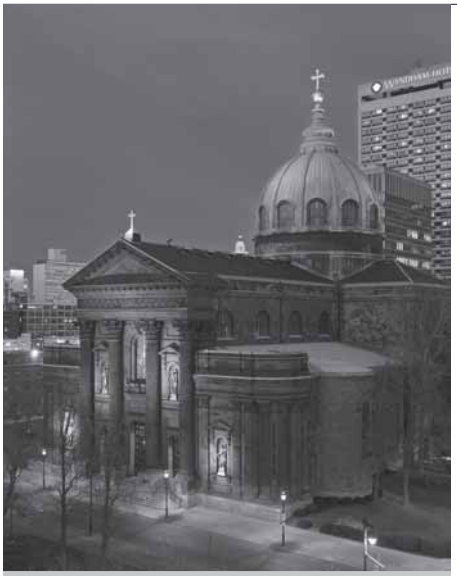
## Present Day Fire Alarm Systems

Before looking at potential future trends, the existing landscape must be presented. Fire alarm system requirements are dictated by the building code that governs the particular jurisdiction in which the building resides. Once the determination has been made that a system is required, then the fire protection engineer would refer to the National Fire Protection Association (NFPA), Volume 72 – The National Fire Alarm Code. This volume of the world's largest governing body of codes and standards would dictate how the system is to be designed, implemented, tested and maintained.

Although there are a number of fire alarm system manufacturers today, the majority of systems are quite similar in type and operation, due to limitations on creativity imposed by NFPA and product listing agencies. The two major types of products offered are conventional and addressable fire alarm systems. *Conventional systems* are simple systems in which initiating devices are not point addressed and are grouped by zone, a method that was commonplace until about 20 years ago. These systems are typically used in smaller applications, in which a designer or owner would deem that an addressable system would be too costly because of the minimal labor required for system installation, i.e. a fire alarm system used solely to monitor the status of a sprinkler system or a system used solely for elevator recall.

*Addressable systems*, introduced in the late 1980's have tremendous benefits including system cost of installation and maintenance, the ease of compliance testing, and the ability to quickly diagnose and resolve any problems. These benefits exist because addressable systems are software driven unlike

*"Evolution" continued p. 18*



# The Benjamin Franklin Parkway and the Age of Enlightenment

*Leo Leonetti, P.E. and James Bilella, L.C.*

Even Ben Franklin would be electrified with results of the Lighting Improvement Project on the Parkway that bears his name in Center City Philadelphia.

Urban Engineers, Inc., in conjunction with Cope Linder Architects, Grenald-Waldron Associates and The Lighting Practice, designed enhancements to illuminate the Benjamin Franklin Parkway and the surrounding area. Project goals focused on improving traffic issues at Logan Circle and upgrading the area's special event infrastructure.

The Parkway is known as Philadelphia's grand boulevard and serves as the ceremonial entrance to Center City. It is home to seven world-renowned cultural and educational institutions that employ more than 2,200 individuals and attracts approximately 2.6 million visitors each year. The Parkway is also the setting for many of the region's most important special events, including the Thanksgiving Parade, Unity Day and the Welcome America! Festival.

Due to economic and political constraints, numerous civic buildings envisioned for the Parkway never materialized. Over the years, repeated concessions were made to vehicular traffic, resulting in a Parkway that resembled a highway, with public spaces devoid of pedestrians and activities. In the end, utilization of the Parkway, as planned early in the 20th century, was not being achieved. However, after a comprehensive examination of how to enable the Parkway to reach its full potential, the Center City District (CCD) identified improved lighting for both pedestrians and vehicles as a critical need.

## Shedding Light on the Situation

The Parkway was void of any pedestrian-scale lights except at Logan Circle and Eakins Oval. After the CCD negotiated with the City of Philadelphia and the Fairmount Park Commission to maintain the proposed lights, 226 pedestrian lights were added, including precise reproductions of historic lights for Logan Circle. In addition, 132 roadway-scale lights with specialty brackets to display the flags and names of the countries of the world were installed. These new fixtures are aesthetically consistent with the spirit of the original Parkway design and meet modern performance criteria for lighting of pedestrian areas and roadways.

The pedestrian lights include two cluster lights to denote the beginning of the Parkway, signify the entranceway to Philadelphia's Museum District and promote a view to the

world-famous "Rocky" steps leading to the Philadelphia Museum of Art at the other end. Pedestrian light fixtures at Logan Circle were historically modeled Cret fixtures that enhanced the Circle's appearance.

The project design included new lighting for 12 sculptures that line the Parkway, illuminating an astounding collection of art spanning the full range of 20th century styles, which many long-time drivers of the Parkway were unaware existed. This lighting plan had to be properly placed to illuminate the statues and be in position to receive power without being intrusive to the area or statue. Design field testing, which included positioning lights at various heights to evaluate illumination factors, resulted in an effective lighting scheme.

## Calming Things Down

A critical aspect of improving the Parkway involved traffic calming measures at Logan Circle, including the installation of new signalized crosswalks that allow pedestrians to cross safely to the Circle, its Swann Fountain and gardens. Accomplished via Parkway diagonals, the crossing design focused on timing traffic signals for pedestrian safety and to prevent vehicular traffic congestion.

The geometry of Logan Circle was adjusted to make it safer and easier for vehicles and pedestrians to navigate. This goal was attained by shifting and reconstructing the outer curb, which narrowed the pavement width for westbound traffic as it passes through the Circle. Another street entrance was shifted and new lawn areas were created, while new traffic signals were added to several islands and approach cross streets.

Construction work hours were staggered to impact the fewest motorists, yet still allowing the contractor to obtain a full day's work. Traffic signals installed at the Circle required creation of a simulated model to depict traffic movements and illustrate that vehicular traffic would not be restricted by the new signals. This simulated model was critical in obtaining approval for the new signals as it demonstrated to stakeholders that pedestrian signals could be added without a detrimental impact to vehicular traffic.

## Special Upgrades, Special Circumstances

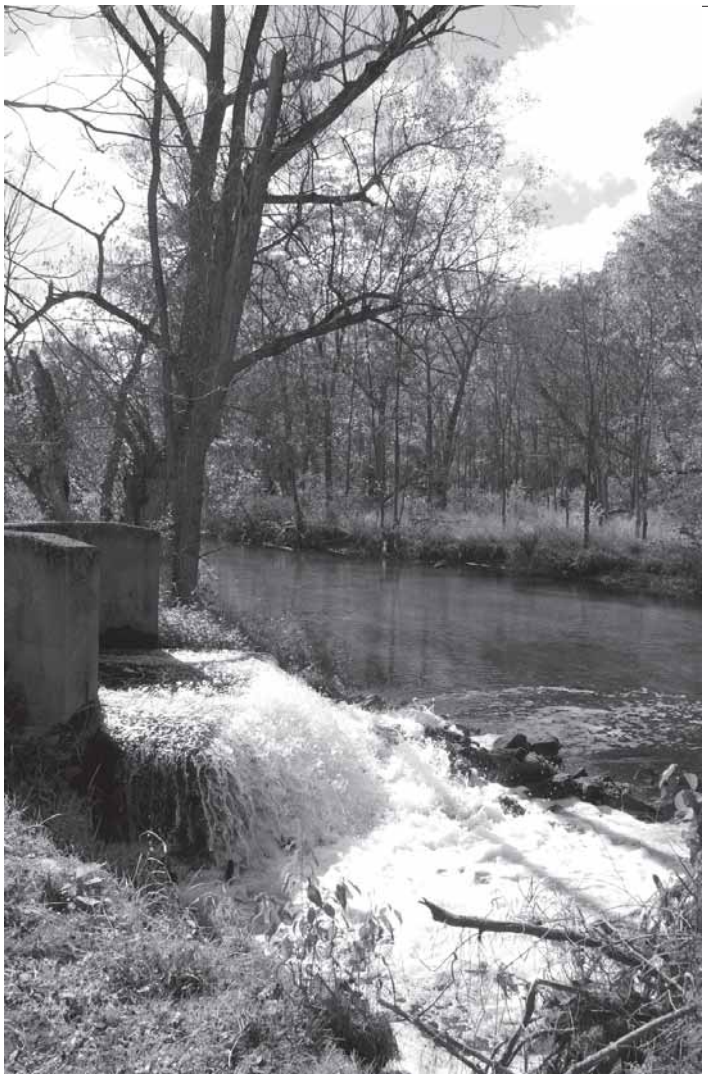
Despite the Parkway hosting a number of special events, infrastructure to accommodate the events was lacking and upgrades were necessary. This work corrected the haphazard hanging of wires and placement of poles and power sources for special events and included upgrading power sources, underground conduit, and speaker poles. The myriad of underground utilities necessitated the design and construction of several special light pole foundations. The presence of underground utilities resulted in shifting the underground conduit and the need for innovative methods to secure power to each block and the various statues. The Parkway's aged electrical service infrastructure required re-routing during design of the conduits to meet the power sources. Numerous coordination meetings were required because power sources were not fully known due to the age of the system and various changes over the years.

In addition to lighting, traffic calming measures and infrastructure upgrades, additional improvements included new curb cut ramps, sidewalk and drainage; narrowing the roadway; and plantings. Planter walls were designed and constructed to maintain the character and appearance of the Circle. Curb cut ramps in the inner circle were lined with Belgian block to complement existing architectural treatment of the surrounding walkways. Among the challenges overcome were extensive permitting, time constraints due to previously planned events, avoiding traffic restrictions and multi-agency and stakeholder communication.

Improvements to the Parkway have been a catalyst for several developments, including the Barnes Museum relocation and the Philadelphia Free Library expansion. Existing museums have experienced strong attendance since the illumination was finished and the statues have become known to the public due

to nightly illumination. This project successfully reintroduced pedestrian-scale lighting to the Parkway, a feature of the original design that was removed decades ago, and improved pedestrian safety and accessibility especially at Logan Circle. These improvements have showcased creative approaches to enhancing roadway and park areas. Lessons learned and treatments utilized along the Benjamin Franklin Parkway can be applied to other important roadways and park areas. ■

*Mr. Leonetti is Vice President and a Director of Urban Engineers' Construction Management Group. Mr. Bilella is Urban Engineers' Streetscape Design Practice Leader.*



# Water Reuse

*Brian Book, P.E and Jason Wert, P.E., DEE*

*Sustainability*

*Green engineering*

*Environmental stewardship*

*Engineers have seen these words growing in frequency over the past several years. Engineers have always worked to strike a balance between meeting the client's needs in the most cost-effective manner and protecting the natural environment as much as possible.*

This is the heart of the challenge Herbert, Rowland & Grubic, Inc. (HRG) faced on the design of the Spring Creek Pollution Control Facility in the Centre Region of Pennsylvania. The community consists of six local governments surrounding the Borough of State College, for which sanitary sewer collection and treatment is provided by the University Area Joint Authority (UAJA).

## Growing Population Demands Greater Groundwater Withdrawal, Reducing Flow in Treasured Creek and Exacerbating the Impacts of Wastewater Discharge

The Spring Creek Pollution Control Facility is a 10.6 million gallon per day (MGD) advanced wastewater treatment plant that discharges to Spring Creek, a world-renowned brown trout fishery. Recent studies estimate that recreation associated with Spring Creek results in over $1 million in tourism to Centre County annually. Thus, there is great incentive – environmental and economic – to protect and preserve the quality of Spring Creek for future use.

Additionally, the creek is the only perennial water source large enough to provide an adequate discharge point for the majority of treated effluent produced in the Centre Region. With an average flow of approximately 45 MGD, Spring Creek can be significantly affected by the region's discharge, which currently accounts for an average of 12% of its flow and approximately 40% of total flow during low baseflow conditions.

This presented a major problem. As the population of the region grew, larger quantities of groundwater would be required to provide sufficient drinking water; however, greater groundwater withdrawal would reduce flow within Spring Creek and exacerbate the impacts of wastewater discharge. Therefore, the community decided to explore a wastewater reuse project for predicted increase in wastewater flow. If additional wastewater generated could be reused within the community, reliance upon groundwater supplies and increasing discharge to the environment could be mitigated or possibly reversed.

## Water Reuse Plan Is Developed To Meet the Nation's Most Stringent Water Quality Standards and Be Constructed in Stages, Allowing Region to Invest In Improvements As Needed

The Beneficial Reuse Project at UAJA was envisioned in three phases, lasting the predicted 20 years of accelerated growth within the region. Thanks to the incremental nature of membrane technologies, the region would be able to invest in its reuse project as growth occurred, deferring a portion of the capital cost to later years.

The first phase consisted of modification of the existing UAJA treatment facility and construction of the advanced water treatment facilities necessary for production of a potable grade product. It also included construction of a small distribution system at an adjacent industrial park. During this phase, UAJA would have the capability to produce approximately 1.0 MGD of reuse water for industrial and commercial reuse.

The second and third phases of the project involved further development of the distribution system and creation of additional reuse capacity at the treatment facility. Since availability of reuse water would be greatly expanded during these phases, UAJA planned to restore several local waterways at this time, including construction of several wetlands to act as discharge points for additional baseflow in the smaller tributaries of Spring Creek that had been impacted by groundwater pumping.

However, detailed hydrogeologic study revealed that these wetlands would release the water into active groundwater withdrawal wells, and the reuse water would potentially comprise as much as 20% of the potable supply for the region. With the high possibility of indirect potable reuse, the project was envisioned to produce a product that met the nation's most stringent water reuse regulations.

## New Facilities Use a Multiple Barrier Approach, Microfiltration and Reverse Osmosis Technologies to Provide Water Quality Meeting Stringent Drinking Water Standards

To produce the reuse water, HRG and UAJA developed a multiple barrier approach to produce an exceptional quality product while ensuring adequate safeguards to reduce the potential of a non-potable product. Using secondary clarified wastewater as a raw product, the advanced water treatment process provided prescreening with a 500-micron wedge wire strainer. (Straining was intended to protect the expensive membrane units from particulate and algae damage and produce a consistent product for treatment.)

Following straining, primary treatment was accomplished through microfiltration. Significant field trials revealed that microfiltration provided the highest quality water with the least operating and maintenance costs, and UAJA wanted to ensure the highest quality feedwater to enhance performance and reduce operating costs of the reverse osmosis system (which served as the ultimate barrier for the advanced water treatment train). The fully automated microfiltration system incorporated backwash treatment to recover 99% of the product water for feed to the reverse osmosis system.

Because of the potential for indirect potable reuse, UAJA set a goal of less than 1.0 mg/l of Total Organic Carbon and a product water that met all current state and federal limits for drinking water. After reviewing numerous processes for tertiary treatment of the wastewater effluent, HRG and UAJA determined that reverse osmosis was the only process that could meet these goals economically and reliably.

The reverse osmosis system at UAJA was designed to utilize ultra-low pressure, thin film, composite membranes to produce a continuous supply of reuse water. Following reverse osmosis, a two-step disinfection process was used for the final barrier. This process utilized medium pressure ultraviolet light disinfection followed by sodium hypochlorite disinfection and chemical stabilization for corrosion control. After disinfection, water was stored for resale within UAJA's newly constructed distribution system.

## Water Reuse Successfully Protects Spring Creek While Providing UAJA With Revenue from Sale of Treated Wastewater

With a second phase of construction underway, the distribution system is being extended to a total of 11 miles of pipeline to serve the businesses and industries of the region. Numerous industries are preparing to receive the reuse water, including a commercial laundry, a concrete batch plant, and a local country club gold course that intends to irrigate 0.4 to 0.6 MGD of reuse water daily.

With a total capacity of 10.6 MGD in hydraulic treatment and an ultimate reuse capacity of 3.0 MGD, UAJA and the Centre Region are poised to meet their growth, while limiting their impacts to communigty groundwater and surface water resources. As the second phase of construction nears completion, the region will have its largest customer to-date in operation, approximately 50% of the total pipeline installed for the envisioned distribution system, and commitment for purchase of approximately one-third of the total reuse water it produces. Actively marketing their high quality resource, the Centre Region is hoping to attract additional users and industries that desire an exceptional quality source for a wide variety of end uses. ■

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# Cover Photo

*Heath A. Dumack, P.E. & P.L.S., Principal, Dumack Engineering*


Dumack Engineering, P.C., was given the unique opportunity to perform structural engineering services for Drexel University, consisting of renovation work to their historic Main Building. The building, over 150 years old, is a landmark on campus and the original facility used by the university.

Their first phase was to convert a set of stairs near one end of their most trafficked entrance of the building into a concrete ramp for the purposes of making the building more accessible for disabled individuals. The stairs were previously made of formed concrete supported by steel beams. The steel needed to be realigned, and in some cases replaced, to shape the new ramp. The ramp itself was created from cast in place concrete.

The second phase involved converting the building's only elevator into a passenger elevator for handicapped accessibility purposes. The elevator shaft consisted of eight-inch solid brick walls, which were evaluated for their capacity to support the proposed equipment. Larger door openings needed to be installed at each of the five floors to accommodate the new elevator. New lintels were designed to carry the brick walls at the new, larger openings. A sequence of construction was developed so the expansion of the openings and installation of the new lintels could be performed without compromising the structural integrity of the existing elevator shaft. The final piece of the project involved developing a new roof system for the elevator shaft.

Drexel University has been an institution in the field of structural and civil engineering, and it was an honor for Dumack Engineering to be given the opportunity to be of service.

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# mem · ber · ship (mĕm′ bər–shĭp′)*

*Timothy S. Ormiston, P.E., PSPE Membership Chair*

I would like to introduce myself as the new Chairman of the PSPE Membership Committee. I agreed to take on this challenging assignment in August 2006 and it has been a busy schedule since then conducting conference calls with members of the PSPE Executive Committee and the Membership Committee. The membership committee is currently creating a plan to address the critical issues of membership that fit into the PSPE strategic plan. More on the details in future issues of *PE Reporter*. Below are basic definitions of "membership" and some thoughts to go with them…

### n1. the state of being a member, as of a society or club.

More than likely, if you are reading this article you are a member of PSPE or considering joining. What is your "state of being a member"? Are you active in Chapter or State activities, in a leadership position, or simply enjoy being a member by reading the printed or electronic communications from State and National? Hopefully you completed the recent membership survey offered by the State Society and shared your ideas on what issues are important to the society. PSPE leadership is using the results to help formulate the strategic plan.

### n2. the status of a member.

This definition touches us in two ways: our individual status in the society and the status we gain by being members. In the past year many members have experienced difficulties with renewals and other changes to their membership status as handled by NSPE. I can assure you that Jennifer Summers, Deputy Executive Director, has been working diligently with the staff at NSPE to first understand what the problems are and then to correct them. NSPE converted to a new membership control system earlier this year which was fraught with many problems causing delay in renewals, renewals incorrectly credited, and incorrect revisions to member requests.

Our status as Professional Engineers is elevated by membership in the society. PSPE/NSPE is active in protecting the title of "Engineer" and protecting the domain in which we work. The voice of the society gets larger with increasing membership. Please be proactive in discussing the benefits of society membership with your associates.

### n3. the total number of members belonging to an organization, society, etc.

The current PSPE membership totals approximately 2300+ people. Unfortunately, this number declines by 100 people a year. My charge, as Membership Chairman, is to stop that decline and put membership on the rise. I am always interested in new ideas from members, ways to increase membership, and ways to add value to membership. If you have an idea that fits with our goals, please contact me via e-mail at: tsormiston@zoominternet.net.

**Dictionary.com Unabridged (v 1.0.1); Based on the Random House Unabridged Dictionary, © Random House, Inc. 2006*

## Member Question of the Month...

**Q** What activity or program do you enjoy most about your PSPE chapter?

**A** Send your reply to pspeinfo@pspe.org with the subject: Member Answer of the Month.

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*"Evolution" continued from p. 9*

conventional systems of the past. Addressable systems are able to monitor the status and sensitivity of all circuits and devices. The system can also be programmed to activate alarm zones independent of initiating and notification circuit configuration and can control specific building systems without the need for excessive relay wiring.

A typical building fire alarm system would employ an addressable Fire Alarm Control Panel (FACP) which could be networked to multiple panels depending on building size and configuration. Initiating devices, used to "initiate" a condition could include a variety of smoke detectors, duct smoke detectors, heat detectors, flame detectors, manual pull stations, etc. Initiating devices would be wired to reside on a Signaling Line Circuit (SLC) which could handle between 100-350 initiating points depending on the selection of fire alarm system manufacturer. In situations where the system would require more devices than the allotted SLC, then a system would simply be chosen that would allow for multiple SLC cards. In the event that a point was needed to be added to the system after the system is installed, the SLC could be modified to accept the new point and a new device address would need to be assigned.

Another integral element of the fire alarm system is the notification system. This will be defined by the building code and accomplished through audible and visual means and are labeled Notification Appliance Circuits (NAC). Audible notification generally will be via pre-recorded voice messaging or standard temporal code 3 horns. Visual notification will be accomplished via strobe appliances with a variety of light intensity ratings, candela, based on room/corridor geometry and configuration. Circuiting would be accomplished in two manners:

1. Strobe only and horn/strobes would be circuited from a power source either banked at the panel or distributed throughout the facility. Addressable NACs are offered by certain manufacturers and can be very instrumental in retrofit design.

2. Speaker appliances would be circuited from an amplifier either banked at the panel or distributed throughout the facility.

The next element is system interfacing. This element is most positively affected by transition from conventional systems to addressable systems and is accomplished through system contact monitor modules and control relay modules. Although various system manufacturers try and differentiate themselves, all products offer monitor and control modules which are both part of the SLC mentioned above.

Monitor modules are used as a blank point ID to monitor the status of conventional fire alarm or non-fire alarm point. These typically include sprinkler systems, fire pump controllers, special hazard suppression points, status points for fire doors, conventional fire alarm points such as project beam smoke detectors, etc. Modules reside on the SLD and can be wired into a normally closed or open contact, as required by the interface. Programming of the point is dictated by requirements of the building or fire alarm code.

Control modules are an addressable point used to simply control a building interface in an alarm, supervisory or trouble situation. These typically include HVAC unit shutdown, elevator control, door control, etc. These modules also reside on the SLC and require an additional 24 Volt power circuit in most cases and perhaps an interposing relay. Control modules can be programmed to perform when one initiating device changes state or a group of devices or zone is alarmed.

The last element that needs addressing is emergency response signaling and communications. Fire alarm systems typically report to a 24 hour monitored station either located on the premise or located remotely. Communications to these monitoring stations can occur in many different fashions, however most typically through phone lines used to dial out in the event of a condition. Addressable systems provide point condition information to the station which allows for more detailed descriptions to be given during dispatch of emergency personnel.

## Fire Alarm Systems: Moving Forward

The modern day has brought a new landscape of risks and hazards forcing the fire alarm and fire protection engineering industry to take a different look at how we accomplish our two main objectives: reduce the loss of life from fire and limit property losses from fire. The theories lean toward creating systems that will perform in a various types of emergencies including fire, weather, nature, terrorist attack, biological and hazardous chemical release. Systems need to provide clear direction in emergency situations through different building system vehicles that will increase our emergency management effectiveness. These systems are "Mass Notification Systems."

## Mass Notification System

"Mass Notification System" refers to a system that manages people's actions during and after an emergency. These systems are designed to provide information and instructions to people in a building, facility, campus or larger geographic area using intelligible voice communications, visible signaling, and textual and graphical information. Events that utilize these systems include any event requiring control of movement of a large group of people. Mass notification systems were proposed by the Department of Defense (U.S.) as one facet of their multi-printed force protection strategy. As this focus began to change to include all types of civilian and government facilities, life safety professionals saw the need to develop installation standards for these systems.

The first attempt at standards was undertaken by the National Fire Protection Association (NFPA) as part of revisions to NFPA 72. It is expected that this revision (NFPA 72-2007) will be voted on and published by late 2006. As proposed, Annex E of NFPA 72-2007 will contain recommended standards for Mass Notification Systems. These new standards will change the way safety, security, and building systems are integrated to save lives.

### So how do we take our present day addressable fire alarm system and evolve into mass notification?

The answer relies primarily on how to segregate certain traditional fire alarm functions and allow other building systems to perform the intended functions. One example is voice messaging in a system that requires voice evacuation audible notification. As we all know, there is a fundamental issue in society with human response as it relates to building fire alarm systems. How many times have you been in a hotel when the fire alarm system has been activated and you are the only one who exits? The reason for this may be because of the technology that exists today for fire alarm speaker appliances. Because of stringent requirements for agency listing, the quality of today's speaker appliance is below average. If you mix this with the latest design trends by today's architects, you could possibly end up with two scenarios: (1) A building with one speaker every 5 square feet or (2) a system that due to echo and reverberation cannot deliver a clear and intelligible message to building occupants. For this reason mass notification systems may look to utilizing the voice messaging component through an existing public address system that can ensure an increase in response time from building occupants.

Another key element that needs consideration is visual signaling of non-fire emergencies. Many system manufacturers are creating amber-lensed strobes in anticipation that non-fire emergencies may require an alternate color. Although no standard has dictated such a requirement, most building owners, designers, and authorities having jurisdiction may prefer to distinguish visible signaling for non-fire emergencies. In a case of a building retrofit project in which the voice evacuation component was being shifted to a public address system, existing speaker cabling could be used to accomplish amber strobe signaling. One other item to consider is interfacing to visual paging systems for textual information, if the system is in place at the particular building, campus, or geographical area that is in consideration.

Similar to all new concepts and technologies the following must be considered when considering mass notification:

* What systems should be integrated to form the complete mass notification system?

* Who will manage and operate the facility's mass notification system: police, fire, building operations, others?

* How do we assign the priority levels of potential events both emergency and no-emergency?

* How do we reduce or eliminate false activations and the inconvenience caused building personnel in a 24 hour facility such as an airport?

* What paging capabilities will the building operators and tenants have during the different types of events?

* Are fire code variances required in order to interface the fire and other non-fire systems?

### Conclusion

The continuing evolution of the fire alarm industry is very evident by the recent changes to NFPA 72. With these changes, engineers, designers, contractors, manufacturers, authorities, and owners will be very instrumental in shaping how mass notification systems take shape as we head into a future of that presents risks of different proportions. On the horizon, mass notification systems will help us manage emergency situations more effectively hence maintaining our two main objectives. Technological advances will occur which will allow the industry to answer some the questions and challenges that have arisen about this new concept. While implementing a mass notification system presents challenges, these challenges can be cost-effectively overcome through a design and implementation process that combines the existing infrastructure with the controls and interfaces necessary to create one integrated system. ■

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# Political Action Committee Report

## 2006 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."

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***Enclosed is my personal contribution to PSPE's Political Action Committee.***

Name: _____
Address: _____
City, State, Zip: _____
Occupation: _____
Name of Employer: _____
Employer's Address: _____

**Amount Enclosed:**

❑ $500
❑ $100
❑ $ 50
❑ Other:_____

Make your personal checks payable to: PSPE PAC (CORPORATE CHECKS CANNOT BE USED BY PAC.)

Send check to: PSPE/PAC, 908 N. Second Street, Harrisburg, PA 17102.

*"Capitol" continued from p. 5*

**SB 1104 RE: One-Call System (by Sen. Tommy Tomlinson, et al)**

Amends the Underground Utility Line Protection Law further providing for the title of the act, for definitions, for duties of facility owners and for the duties of the One Call System; providing for liability, fees and governance of the One Call System; further providing for applicability; providing for the duties of project owners and for rights of the Auditor General; further providing for the governing board of the One Call System, for fines and penalties and for applicability to certain pipeline systems and facilities; providing for a voluntary payment dispute resolution process, for best efforts, for removal or tampering with a marking, for determination of position and type of lines and for impairment of rights and immunities; further providing for expiration; repealing provisions of the Propane and Liquefied Petroleum Gas Act, concerning the prohibition of certain liquefied petroleum gas facilities or distributors from being subject to the Underground Utility Line Protection Law; and making an editorial change.
*Passed Senate, 6/26/2006 (50-0)*
*Passed House, amended, 10/24/2006 (195-0)*

**SB 1158 RE: Residential Visitability Design Tax Credit Act (by Sen. Jim Rhoades, et al)**

Provides for a tax credit to encourage property owners to include visitability design features on their properties. The bill states that the governing body of a local taxing authority which levies a tax on residential property may provide a residential visitability design tax credit against a real property tax levied on such property. The credit may be offered to residential owners if the uniform design standards are provided within the eligible residential units. The tax credit would be limited to any new or renovated dwelling that contains visitability design features which will enhance the usability of the dwelling for persons with significant mobility impairment. The amount of the tax credit would be determined by the governing body and would not exceed $2,500, or the total amount of the increased amount of property taxes owed during the first five years from the time the tax credit is approved, whichever is less. The bill adds that architectural design of a visitable home must comply with certain requirements. "Visitability design" is defined as the presence of architectural design features which enhance access and usability for visitors and residents who have significant mobility impairment and which minimize the cost of full accessibility modifications, if necessary, at a later time.
*Passed Senate, 6/27/2006 (50-0)*
*Passed House, 10/18/2006 (194-0)*
*Signed in the Senate, 101/8/2006 Signed in the House, 10/23/2006*
*In the hands of the Governor 10/23/2006. Last day for Governor's action, 11/2/2006*

## New Bills Introduced

**HB 2936 RE: School Construction Costs (by Rep. Bev Mackereth, et al)**

Amends the Public School Code further providing reimbursement for costs related to school district construction or renovations by adding the cost of employing a construction manager to oversee new school construction and improvements related to school safety to the reimbursement equation.
*Referred to House Education Committee, 9/25/2006*

**HB 3018 RE: Storm Water Best Management Practices and Improvement Tax Credit Program (by Rep. Tom Gannon, et al)**

Established to encourage private investment in the implementation of best management practices on land development activities that change the surface characteristics of the land and alter its storm water runoff characteristics. Eligible applicants would receive a tax credit of up to $150,000 under this program. The legislation outlines what projects qualify for a tax credit, the amount of credit that would be received and standards for those projects. The State Conservation Commission, in consultation with the Departments of Revenue and Environmental Protection, would annually report to the General Assembly on the Storm Water Best Management Practices and Improvement Tax Credit Program and would conduct a review and evaluation of the effectiveness of the program in reducing pollution and creating habitat.
*Referred to House Environmental Resources and Energy Committee, 10/17/2006*

**HB 3020 RE: State Public School Building Authority Act (by Rep. Tom Caltagirone, et al)**

Amends the State Public School Building Authority Act further providing for purposes and powers of the Authority by stating that all contracts between the Authority and school districts would be conditioned upon the preparation of general plans for centralized design of physical plants, for the orderly development of improved attendance areas and administrative units, and for the improved housing of the public schools of PA.
*Referred to House Education Committee, 10/17/2006*

**HB 3034 RE: CE for Architects (by Rep. Steve Barrar, et al)**

Amends the Architect's Licensure Law adding a definition of "public protection subjects" and requiring the board establish and enforce continuing education rules to be satisfied by all individuals holding a certificate to engage in the practice of architecture as a condition of certificate renewal. The bill states as a condition for biennial renewal of an individual's certificate by the board, an individual architect must, in the two years preceding renewal, complete at least 24 contact hours of continuing education in public protection subjects. The continuing education requirement would not apply to an architectural firm.
*Referred to House Professional Licensure Committee, 10/17/2006*

**HB 3035 RE: Restitution for Licensees (by Rep. Steve Barrar, et al)**

Amends the act entitled, "An act empowering the General Counsel or his designee to issue subpoenas for certain licensing board activities; providing for hearing examiners in the Bureau of Professional and Occupational Affairs; providing additional powers to the Commissioner of Professional and Occupational Affairs; and further providing for civil penalties and license suspension," by adding that boards and commissions have the power to impose mandatory restitution and mandatory repayment of the cost of investigation and prosecution in a disciplinary matter. The bill outlines the procedure for mandatory

*"Capitol" continued p. 22*

*"Capitol" continued from p. 21*

restitution and mandatory repayment of cost of prosecution and states that in all disciplinary matters before a licensing board or commission where the board or commission imposes discipline, the licensing board or commission would order the individual to make restitution to the victim and repay the cost of investigation and prosecution by the Department of State.

*Referred to House Professional Licensure Committee, 10/17/2006*

**HB 3047 RE: High-Performance, State-Funded Buildings Standards Act (by Rep. Carole Rubley, et al)**

Requires facilities leased or owned by the state to comply with certain energy and environmental standards outlined in the Act.

*Referred to House Environmental Resources and Energy Committee, 10/18/2006*

**HB 3048 RE: High-Performance Buildings Tax Credit (by Rep. Carole Rubley, et al)**

Amends the Tax Reform Code establishing a High-Performance Buildings Tax Credit to a taxpayer, whether owner or tenant, for either the construction of a high-performance building or the rehabilitation of a building which is not a high-performance building into a high-performance building. The legislation provides for the amount of the tax credit and eligibility standards.

*Referred to House Finance Committee, 10/18/2006*

**SB 1345 RE: Elevator Regulation Law (by Sen. Bob Regola, et al)**

Reenacting and amending the Elevator Regulation Law restoring the act to the state in which it existed prior to repeal by the Pennsylvania Construction Code Act and providing for duties of the Secretary of Labor and Industry.

*Referred to Senate Labor and Industry Committee, 10/11/2006*

**SB 1346 RE: Fire and Panic Act (by Sen. Bob Regola, et al)**

Amends the Fire and Panic Act providing for classes of buildings, for special requirements, for automatic fire-detection devices, for standards for family child day-care homes, for egress, for fire extinguishers, for legislative review, for places of public assembly, for motion picture permits, for licensing of projectionists, for approval of plans, for use and occupancy permits, for discontinuance of use, for noncompliance and for violations.

*Referred to Senate Labor and Industry Committee, 10/11/2006*

**SB 1347 RE: Reenacting Previous Construction Acts (by Sen. Bob Regola, et al)**

Reenacts the act entitled "An act requiring that certain buildings and facilities adhere to certain principles, standards and specifications to make the same accessible to and usable by persons with physical handicaps, and providing for enforcement," restoring the act to the state in which it existed prior to repeal by the Pennsylvania Construction Code Act and providing for duties of the Secretary of Labor and Industry.

*Referred to Senate Labor and Industry Committee, 10/11/2006*

**SB 1349 RE: Building Energy Conservation (by Sen. Bob Regola, et al)**

Reenacts and amends the act entitled "An Act providing for the regulation for energy conservation purposes of the construction of buildings, the establishment of a Building Energy Conservation Committee and a Board on Variances, appeals and for penalties," restoring the act to the state in which it existed prior to repeal by the Pennsylvania Construction Code Act and providing for duties of the Secretary of Labor and Industry.

*Referred to Senate Environmental Resources and Energy Committee, 10/11/2006*

**SB 1351 RE: Restroom Facilities (by Sen. Bob Regola, et al)**

Reenacts the act entitled "An act providing for restrooms in facilities where the public congregates; and requiring that restroom facilities be provided for women on an equitable basis," restoring the act to the state in which it existed prior to repeal by the Pennsylvania Construction Code Act and providing for duties of the Secretary of Labor and Industry.

*Referred to Senate Labor and Industry Committee, 10/11/2006*

**SB 1352 RE: Solar Energy System Incentives Program Act (by Sen. Ted Erickson, et al)**

Establishes a Solar Energy System Incentives Account in the General Fund for the creation and administration of the Act. The program's purpose is to provide for creation, development, administration, management and implementation of a program to provide financial incentives for purchase and installation of solar energy systems. Under the Act, an individual could receive a rebate on his or her purchase of a solar energy system if it is 1.0 kilowatts or larger for a solar photovoltaic system, or provides at least 30% of a building's hot water consumption for a solar thermal system from July 1, 2006, through June 30, 2015. Further requirements are listed for installation and type of system and total rebates possible through its use.

*Referred to Senate Environmental Resources and Energy Committee, 10/12/2006*

**SB 1364 RE: Home Inspectors (by Sen. Stewart Greenleaf, et al)**

Amends Title 8 (Real & Personal Property) further providing for home inspections; establishing the Pennsylvania Board of Home Inspectors and providing for its duties and powers; and providing for licensure of home inspectors and for disciplinary proceedings by the Pennsylvania Board of Home Inspectors.

*Referred to Senate Consumer Protection and Licensure Committee, 10/13/2006*

**Session Ends on November 30**

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

# Report of the 2007-2008 Nominating Committee

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

| | |
|---|---|
| Art Hall, P.E. | (Midwestern Chapter, Northwest Region) |
| Robert Reisinger, P.E. | (Lincoln Chapter, Central Region) |
| Johann Szautner, 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 2007-2008:

| | |
|---|---|
| President Elect: | John Bradshaw, P.E. |
| Secretary: | Joseph Boward, P.E. |
| Treasurer: | John Nawn, 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. |
| Vice President Southwest Region: | Michel Sadaka, P.E. |
| Vice President Central Region: | Susan Sprague, P.E. |

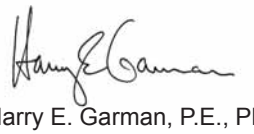
In accordance with the PSPE bylaws, this report and a brief biography of each nominee will be printed in the November/December *PE Reporter*. In accordance with PSPE bylaws, members who wish to run for state office may do so by petition. Nominations signed by at least 25 PSPE members in good standing, along with a picture and biography of the candidate, must be received by the PSPE Secretary by January 19, 2007. 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 February 23, 2007.

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,



Harry E. Garman, P.E., PLS
Chair, Nominating Committee

**Nominating Committee Chair**

Harry E. Garman, P.E.
5081 Hanover Dr
Allentown PA 18106-9450
Phone: (610)481-9289
hegarman@aol.com

**PSPE Secretary**

Joseph F. Boward, P.E.
411 Poplar Ct
Moon Township PA 15108-9028
Phone: (724)457-0708
jboward@garvinbowardengineering.com

# 2007-2008 PSPE State Officer Candidates

## John F. Bradshaw, PE, PLS
***President Elect***

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

John received his Bachelor of Science degree in Construction Technology from LeTourneau University (1965.) Some of John's more significant projects include the New River Gorge Bridge in West Virginia, still the longest steel arch bridge in the world; Alaskan Pipeline support system; Moundsville and the Huntington Sixth Street Bridges across the Ohio River in West Virginia; raising and expansion of Beaver Stadium at the main campus of the Pennsylvania State University in State College, PA; redecking 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. John recently took on a new enterprise managing the design and construction oversight for the Pennsylvania Turnpike's service plaza development project.

Besides being active with professional and technical societies, John has been involved with his local church, Bible Baptist Church of Shiremanstown, PA. John has served as 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.

## Joseph F. Boward, P.E.
***Secretary***

Joe graduated from Purdue University with a BS degree in Civil Engineering (1984.). He majored in Soil Mechanics and minored in Environmental and Structural Engineering. Joe is licensed Professional Engineer in Pennsylvania, West Virginia, Ohio, and Maryland. He successfully completed educational requirements for Radium and Radon in the Environment at the University of Wisconsin, and the Environmental Site Assessment course conducted by the National Water Well Association (1989.) He earned his MS degree in Civil Engineering from the University of Pittsburgh, where he concentrated in Soil Mechanics and minored in hydraulics/hydrology (1990.) In 1996, he completed the Environmental Site Assessments course given by the American Society for Testing and Materials (ASTM).

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 applies civil engineering technology to aspects of the earth, including the interaction of engineering works with soils and bedrock. 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.

Mr. Boward has collaborated on a number of publications: J. F. Boward and L.E. Vallejo, "Clay Liner Crack Propagation", Engineered Contaminated Soils and Interaction of Soil Geomembranes, Proceedings of ASCE National Convention in Washington, DC, November 10-14, 1996, Geotechnical Special Publication No. 59, American Society of Civil Engineers, New York, 1996.

R. G. Garvin and J. F. Boward, "Using Slurry Walls to Protect an Historic Building: A Case Study", Slurry Walls: Design, Construction, and Quality Control, ASTM STP 1129, American Society for Testing and Materials, Philadelphia, PA, 1992.

## John A. Nawn, P.E., PTOE
***Treasurer***

John is a Vice President with GAI Consultants and Managing Officer of their regional office in King of Prussia, PA. Mr. Nawn manages over 20 professionals providing transportation, land development, municipal and traffic engineering and construction management services for a diverse range of public and private clients. 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. He designed and managed the installation of the first application of Back In Angle Parking in the Commonwealth of Pennsylvania, previously featured in the PSPE PE Reporter.

John holds a Bachelor of Science degree from Drexel University in Civil Engineering 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.

John is an Eagle Scout, very active in the Boy Scout program and a member of the Cradle of Liberty Council Property Committee. John is a Director with the Sharon Hill Historical Society. He was instrumental in helping the group obtain a $342,000 federal Transportation Enhancement grant. Currently, John is the Treasurer of the Malvern Prep Fathers Club. John is a railroad aficionado and was Convention Chairman for the 2006 National Model Railroad Association Convention.

John resides in Newtown Square, PA with Barbara, his wife of 18 years and their two children. Son John is a junior at Malvern Preparatory School and daughter Julie is a freshman at Villa Maria Academy. Barbara is the Physical Education teacher at Our Lady of Fatima School in Secane, PA. John's father and youngest brother are also engineers, electrical and mechanical respectively, with his youngest brother also a licensed professional engineer in Pennsylvania and a PSPE member.

## Walter J. Poplawski, P.E.
***Vice President Northeast Region***

Walter graduated from Penn State with a B. S. in Civil Engineering (1973). In 1988, he joined former colleagues in establishing the Architecture + Engineering Group, Inc., a multi-discipline consulting firm in Wilkes-Barre. He is currently the A + E Group's Senior Associate in charge of Civil Engineering and Site Development. In the last 18 years he has been involved with scores of projects, serving a variety of public and private clients such as Ecumenical Enterprises, Inc., TFP Limited, the Greater Pittston Chamber of Commerce, the U.S. Postal Service, the Luzerne County Housing Authority, Back Mountain Recreation, Inc., the Pittston Area School District, Biscontini Distribution Centers, TJ Maxx, Energy Unlimited, Inc., the Wyoming Valley West School District, PA American Water Co., and the Luzerne County Community College, to name a few.

Walter's activity is not limited to his engineering profession. He has been a member of the Kingston Shade Tree Commission, serving as Chairman for the last 17 years. He was also involved with youth sports in the Kingston community, having coached dozens of baseball, football, basketball, and soccer teams. He was president of the Kingston Little League for four years. He is a lector at St. Ignatius church and is a member and past president of the parish's Holy Name Society. He is also a member of the Knights of Columbus.

He and his wife Pearleen have been happily married for thirty-three years. They are the proud parents of two sons, Kevin, a Doctor of Physical Therapy, and Scott, an Accounting graduate of King's College, and one daughter, Mrs. Amy L. Daiute, P.E. Amy is also an active PSPE member, serving as the Luzerne Chapter's Secretary and Alternate State Director. Walter and Pearleen are blessed with two beautiful grandchildren, Antonio, 2 ½, and Milana, who was born July 27, 2006.

## David McCullough, P.E.
***Vice President Northwest Region***

Dave McCullough is a Civil Engineer employed by PBS&J in Canonsburg, Pennsylvania as a Senior Transportation Engineer. He is currently a Manager on the Design Management team for the Pennsylvania Turnpike Commission's Mon/Fayette Expressway SR 51 to I-376 project. This project currently ranks in the top five largest transportation projects in the United States.

He was part of the project team serving the Pennsylvania Turnpike Commission as the General Engineering Consultant. 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. Dave was 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 graduated from the University of Pittsburgh in Pittsburgh, Pennsylvania with a Bachelor of Science degree in Civil Engineering (1983). He received a Master of Science degree in Civil Engineering from the University of Pittsburgh where he studied Traffic and Transportation Planning (1986). He is a registered professional engineer in Pennsylvania.

Dave 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.
***Vice President Southeast Region***

Frank graduated from Villanova University with a Bachelors Degree in Mechanical Engineering (1981). Frank's experience is diverse and includes thermal and mechanical designs for Plate and Frame (PHE) heat exchangers, custom Spiral Plate heat exchangers (SHE) for the chemical, food, power, sewerage and industrial markets per ASME Pressure Vessel Codes; designing field erected cooling towers; structural analysis, failure investigations, field

engineering, and management responsibilities; multi-disciplined projects requiring coordination with internal and external professional engineers to complete capital projects that increase quality and production, without adversely effecting refinery operations; systems involving structural, electrical, instrumentation, program controls, equipment, and system designs; improving cost estimating systems with computerized estimating software and integrated construction scheduling software for more precise capital cost budgets; devised quick estimate methods with the software systems to screen competing capital projects; supervising engineering staff, performing feasibility studies, cost estimates, and design-build activities in the industrial, commercial and pharmaceutical market place.

In 2001, Frank and Ann Marie, his wife of twenty one years (also a graduate of Villanova's mechanical engineering program) organized The ENC Group, LLC a DBE providing project support services to industrial, commercial and governmental markets. ENC is frequently contracted to provide detailed design and construction support services covering structural, process mechanical systems, project planning and project management. ENC has completed retrofit projects at the largest nitrogen plant in the world located in Mexico, where ENC provided cost estimating, scheduling, detailed design, field engineering and construction supervision services.

Frank and Ann Marie have three sons, Francis, Matthew and Jonathan. The Matthew and Jonathan are competitive swimmers on Council Rock High School South's Swim & Diving Team, and Tri-Hampton YMCA Swim Team. Francis is a freshman studying Mechanical Engineering at the University of Rhode Island and swimming for the URI's Division 1 swim team.

### Michel J. Sadaka, P.E.
***Vice President Southwest Region***

Michel 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 chapter webmaster, 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.

### Susan K. Sprague, P.E.
***Vice President Central Region***

Susan is a project manager and municipal engineer with Johnson, Mirmiran and Thompson in York and has over 20 years experience with civil and municipal engineering projects in Pennsylvania. Currently she is responsible for the design, bidding and construction management of municipal public works projects.

Susan received a B.S. in Civil Engineering from Lehigh University in 1986 and served on the Lehigh Alumni Association Board of Directors from 1999-2001.

Susan has been actively involved with PSPE since 1987. She served the Lincoln Chapter as a board member from 1992 through 2000 and as President in 1996-1997. She currently serves as chapter coordinator of the MATHCOUNTS program and treasurer of the York County Science and Engineering Fair which was founded by Lincoln Chapter. At the state level, Susan served as the Pennsylvania State MATHCOUNTS Coordinator from 2003-2005.

In addition to being active with PSPE, Susan is a member of the American Society of Civil Engineers, the Construction Specifications Institute, American Public Works Association, Pennsylvania Municipal Authorities Association and ASTM and serves on the Leadership York Curriculum Planning Committee.

# Classified

### Civil Engineer

Well established real estate developer is seeking a Civil Engineer. BS in Civil Engineering required along with 5+ years site development experience. Candidate will be responsible for all aspects of civil engineering scope for site development projects including grading, drainage, utilities & municipal/state permits. Candidate must be able to interact & coordinate with in-house/outside consulting architects, engineers, surveyors. AutoCAD proficiency required, roadway & infrastructure design experience & P.E. preferred.

Outstanding compensation plan, extensive benefits & upward mobility are available to qualified candidate with strong technical background & problem-solving skills. Please apply with resume & cover letter to hr@mericle.com or **Mericle Construction, Inc.** 100 Baltimore Dr., W-B PA 18702.

### Mechanical (HVAC) Project Engineer

Johnstown

**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, mission-critical facilities, and historic renovation projects. We offer career opportunities in a highly dynamic, continuous learning, team focused environment.

We seek an experienced mechanical engineering professional with a minimum 5 years HVAC/Mechanical consulting engineering experience, preferably in Hospital and Educational applications. Reporting to a Principal-in-Charge, will be responsible for primary client interface and coordinating engineering design production to meet desired service quality and effectiveness. A Professional Engineering (PE) license is required along with proven project management and leadership success in an engineering consulting capacity.

Located in the Laurel Highlands of South Central PA, an area with an outstanding quality of life, we're 185+ employees and growing, and offer a comprehensive and competitive total compensation package for the selected individual. Submit a letter of interest and resume in confidence to: Human Resource Director; 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.

### Land Development Design Professional

Lancaster, PA

**C.S. Davidson, Inc.** is seeking a qualified Land Development Project Manager to work at the firm's newest office in downtown Lancaster, PA. This is a unique opportunity to partner with both design and construction phase professionals in a company that has been selected as one of the Best Places to Work in PA for six consecutive years. Professional licensure is highly recommended for this position as well as solid project management skills.

Ability to mentor younger staff in a branch setting is a plus.

Responsibilities include the following:

- Project management will require applicant to monitor all aspects of budget, scope, and schedule of work in progress, as well as coordination of multiple clients and consultants.
- Ability to complete residential and commercial site layout design, including grading, stormwater, erosion and sedimentation control plans, and utility design.
- Understanding of the municipal review and approval process.
- Understanding of the ordinances and permitting requirements for both residential and commercial projects.
- Understanding of contract and bid documents and drawings.
- Strong communication skills to present plans on behalf of clients to approval boards.
- Proposal preparation and cost estimates in response to requests. Ability to work cooperatively with marketing staff.

This position is salaried and classified as exempt from overtime. Salary is negotiable based upon experience.

### Civil/Municipal Professional Engineer/ Project Manager

Gettysburg, PA

**C.S. Davidson, Inc.** has need for a Civil Engineer with P.E. registration with a minimum of five years experience in municipal client representation, expertise in sanitary sewer retention and collection systems, familiarity with CDBG project administration, municipal plan reviews, public improvement design, and all aspects of general civil engineering. Seeking an experienced project manager with skills in fostering and maintenance of client relationships, proposal preparation, project budget management, and public presentation. Position is within the Civil/Municipal Department located at the firm's Gettysburg office.

Position is salaried and classified as exempt from overtime.

### Professional Bridge/ Transportation Engineer

York, PA

**C.S. Davidson, Inc.** is seeking a dynamic licensed professional engineer with expertise in highway/bridge design and project management to joining out growing structural team. The successful applicant should have a minimum of five years of experience in all aspects of design, project management, and construction documentation preparation for all types of transportation projects in accordance with AASHTO and PENNDOT requirements. This position has great growth potential based upon the skills exhibited by the successful candidate. Excellent oral and written communication skills, B.S. in Engineering or Engineering Technology, P.E. Registration in PA or ability to obtain this status, and the ability to mentor entry level E.I.T.s are also required. This position is with the Bridges/Structural Department office located at 53 North Duke Street, York, PA.

Position is salaried and classified as exempt from overtime

**C.S. Davidson, Inc.** is one of nine companies in Pennsylvania that is honored to be selected all six consecutive years by the Central Penn Business Journal's "Best Places to Work in PA" from an anonymous survey completed by our employee owners.

**C.S. Davidson, Inc.** offers an excellent benefits package, including Life and Disability Insurance, Profit Sharing Plan and Employee Stock Ownership, as well as 401K plan participation after one year of employment.

**C.S. Davidson, Inc.** is an equal opportunity employer.

Please forward resume and references to: C. S. DAVIDSON, INC.; 38 North Duke Street; York, PA 17401; Attention: Gregory L. Myers, Human Resources Manager. Phone (717) 846-4805; Fax (717) 846-5811; glm@csdavidson.com

# PSPE 2006-2007 Awards Program

*David K. Williams, P.E.*

I am excited to be the new PSPE Awards Committee Chair . PSPE State President, Harve Hnatiuk and Secretary Joe Boward (immeidate past Awards Committee Chair) have provided me with clear direction and support for the coming year.

PSPE and NSPE annually recognize performance and accomplishments of chapters, individuals, projects, and other professional organizations whose efforts enhance the integrity of our professional engineering society or the stature of our engineering profession. The various annual awards that are administered by our state and national society are:

### Engineer of the Year and Young Engineer of the Year Award

These official PSPE awards recognize exceptional engineers. These individuals, through their efforts, are the epitome of the Professional Engineer. The PSPE Engineer of the Year Award recognizes an outstanding, distinguished engineer not necessarily for their work forPSPE, but for their overall activities and achievements. Occupational and professional achievements, civic, political, and engineering affairs, and education represent the primary selection criteria for the Engineer of the Year award.

The Young Engineer of the Year award recognizes an outstanding engineer no older than 35 as of Jan. 1, 2008. Evaluation criteria include collegiate achievements, professional and technical society activities, engineering experience, publications/patents, major engineering project achievements, and additional activities, such as civic, fraternal, or humanitarian endeavors.

State winners may be nominated for the national NSPE Awards.

### Membership Growth Award

The Membership Growth award may be to the Chapter having the largest percent increase in membership for a given year. The measure of growth will be based upon the percentage of increase in membership for the period of one year, from March 31 of the previous year to March 31 of the current year.

### Outstanding Program Award

Presented to the Chapter whose overall programs during the year judged to be the most informative and which achieve in content the professional and timely objectives of the Society. Attention is given to special programs which promote significant membership participation together with those programs which attain a high degree of publicity for the Society. By March 3, 2007, each chapter may forward to the PSPE Awards Chair a listing of programs presented during the current year.

### Communications Award

This is a new award and selection criteria are still being developed. I will provide additional details and requirements to the Chapter Presidents in the near future.

### Special Projects Award

Presented to the chapter which, on its own initiative, has given special attention to a specific project or accomplishment in the interest of promoting the engineering profession, for example: special forum on educating the public on pollution, special high level Engineers Week program, or special professional seminars or panel discussions. Any chapter can submit a resume of the special project undertaken to be considered for this award by March 3, 2007.

### PSPE Practice Division Awards:

Construction Professional Development Award
Education Professional Development Award
Government Professional Development Award
Industry Professional Development Award
Private Practice Professional Development Award

These awards may be given by any of the Practice Divisions. A Practice Division wishing to give an award is responsible for administering the award, selecting the recipient and informing the Awards Chair no later than March 3, 2007. Award criteria for each of the Practice Divisions are already established by the NSPE. Practice Divisions may use the respective nominating forms produced by the National Society each year.

All awards described above (except the Practice Division Awards) may be nominated through each PSPE chapter awards committee or President. Chapter awards nomination forms, included in the State Awards Program Handbook available through PSPE, are due to the PSPE Awards Committee by March 3, 2007. Nomination forms should be submitted to PSPE Headquarters, 908 N. Second Street, Harrisburg, PA 17102.

Award recipients will be recognized at the PSPE Annual Conference Banquet on Saturday, June 2, 2007, at The Inn in Reading, PA. I encourage all PSPE chapters to submit a nominee for each of the above awards. Any Award questions can be directed to me, David K. Williams, P.E., PSPE Awards Committee Chair, at (412) 269-2087, cell phone (412) 855-4540, or via e-mail at dkwilliams@mbakercorp.com.■

# PSPE Members Are Encouraged to Apply!

2007 NSPE Fellow Member nominations are due to **PSPE by January 7, 2007**. The PSPE Fellow Member committee will review the applications prior to the PSPE Board of Directors meeting on January 20, 2007.

PSPE members should send applications to:

Pa Society of Professional Engineers
908 N. Second Street
Harrisburg, PA 17102
717.441.6051
jennifer@wannerassoc.com

PSPE has many members deserving of Fellow recognition. Download your application at www.nspe.org/aboutnspe/ab1-fellow.asp. Procedures and requirements are outlined on the application form.

Please feel free to call or email Laura Burns, Program Coordinator, with any questions. Phone: (703) 684-2804 or lburns@nspe.org

Thank you in advance for your participation. We look forward to receiving your nominations.

Laura Burns
Program Coordinator
State and Chapter Relations and Meetings
National Society of Professional Engineers
1420 King Street
Alexandria, VA 22314
Phone: (703) 684-2804 Fax: (703)836-4875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