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The Sidney Robin Memorial Newsletter of the Philadelphia Section ASCE

Vol. 78-3

## Our 93rd Year

November 2005

### NOVEMBER DINNER MEETING

Philadelphia Chapter, Pennsylvania Society of Professional Engineers and  
Philadelphia Section, American Society of Civil Engineers

### THURSDAY, NOVEMBER 17, 2005

Union League • 140 South Broad Street (at Sansom Street) • Center City Philadelphia  
Cocktails 5:30 PM • Dinner 6:30 PM • Meeting Presentation 7:30 PM

**SUBJECT: Philadelphia Combined Sewer System and Natural Drainage Methods**

**SPEAKER: Howard Neukrug**, Director, Office of Watersheds, Philadelphia Water Department  
(PWD)

RESERVATIONS MUST BE SUBMITTED BY **FRIDAY, NOVEMBER 11, 2005**. Please send your check for the number of attendees at \$30 per member or guest, \$15 per ASCE Student Member. Checks should be made payable to "Philadelphia Section ASCE" and sent to ASCE, PO Box 58186, Philadelphia, PA 19102-8186. Reservations can also be made on the Electronic Message Center, 800-461-4190, or via e-mail at [info@asce-philly.org](mailto:info@asce-philly.org). Walk-ins will be subject to acceptance on a space-available basis. THERE IS NO GUARANTEE THAT SPACE WILL BE AVAILABLE IF YOU DO NOT RESERVE A SPACE.

**SPECIAL FEATURE: VILLANOVA UNIVERSITY NIGHT.** The ASCE Student Chapter, Faculty and Alumni of Villanova will be honored at this meeting. All Students, Faculty and Alumni are cordially invited to participate.

*Continued on Page 2*

### DECEMBER DINNER MEETING

Philadelphia Post, Society of American Military Engineers and  
Philadelphia Section, American Society of Civil Engineers

### WEDNESDAY, DECEMBER 14, 2005

Philadelphia Airport Hilton, 4500 Island Avenue (south of Penrose Avenue), Philadelphia  
Cocktails 5:30 PM • Dinner 6:30 PM • Meeting Presentation 7:30 PM

**SUBJECT: The Army Corps of Engineers Coastal Shore Protection Program in New Jersey and Delaware**

**SPEAKER: Jeffrey A. Gebert**, Chief, Coastal Planning Section, Philadelphia District, US Army Corps of Engineers

RESERVATIONS MUST BE SUBMITTED BY **FRIDAY, DECEMBER 9, 2005**. ALL RESERVATIONS SHOULD BE MADE THROUGH THE SAME PHILADELPHIA POST WEBSITE, [www.samephiladelphiapost.org](http://www.samephiladelphiapost.org). No reservations will be accepted through the ASCE, Philadelphia's Hotline, Website or Post Office Box. The cost of the meeting and dinner is \$28 per person (\$30 if reservation is made after December 9, 2005). Walk-ins will be subject to acceptance on a space-available basis. THERE IS NO GUARANTEE THAT SPACE WILL BE AVAILABLE IF YOU DO NOT RESERVE A SPACE.

*Continued on Page 7*

### TECHNICAL GROUP ACTIVITIES

Structural Technical Group

*Joint Meeting*

**DATE: Tuesday, November 22, 2005, 12 Noon**  
Lunch/Snacks from 12:00 Noon to 12:30 PM  
Presentation 12:30 PM to 1:15 PM

**LOCATION: 16th Floor, Room E, Municipal Services Building, (1401 Kennedy Blvd.), Philadelphia, PA**

**SUBJECT: Bridge Security and Blast Resistance Design**

**SPEAKER: Professor Anil Agrawal**, Ph.D., P.E., City University of New York

Dr. Agrawal has carried out extensive research in the all important subject of blast resistance capacity of structures and has successfully applied it to the security of bridge structures. His recommendations need to be incorporated in the future design codes.

**RESERVATIONS MUST BE MADE BY FRIDAY, NOVEMBER 18, 2005.**

Please send your check for the number of attendees @ \$12.00 per member or guest, \$6.00 per ASCE student member, payable to: The Philadelphia Section ASCE, (11/22 Mtg.) P.O. Box 58186, Philadelphia PA 19102-8186 or call the Electronic Message Center: 1-800-461-4190 (Open 24 hours/day) and phone confirmation (609) 530-9618 or e-mail [Khana@stvinc.com](mailto:Khana@stvinc.com).

Environmental and Water Resources  
Technical Group

**DATE: November 30, 2005; 12 noon**

**SPEAKER: Lori Reynolds**, EPA

**SUBJECT: Schuylkill Action Network (SAN)**

**LOCATION: Municipal Services Building, 16th Floor, Conference Room D; 1401 Kennedy Blvd.; Philadelphia, PA**

**COST: \$10**

The purpose of the SAN is: "To improve the water resources of the Schuylkill River watershed by working in partnership with state agencies, local watershed organizations, water suppliers, local governments, and the Federal govern-

*Continued on Page 3*



## PRESIDENT'S MESSAGE

Wow! The October Dinner meeting turnout of nearly 150 was amazing. So many people worked so hard to pull it off. The dinner was a great success. I hope that all of our remaining dinners follow suit. I can't believe how fast the year is flying by. Now I see how the early months of planning have taken hold. I am very fortunate to work with such a great team — my Board. I look forward to all that lies ahead for us. We truly are on the move! I would like to use my space here to mention a few things that come to mind.

First, for those of you who have taken interest in House Bill 120 concerning taxation on professional services, please note that the correct bill number is 1920. Special thanks goes to **Darin Gatti** for his efforts in bringing this to my attention. You can now find the right information and respond appropriately.

Second, it is membership drive time. Please make an effort to recruit at least one new ASCE member. **Tom Brady** has lots of membership information in hand and is ready to assist you. Please do not hesitate to contact him or any of the other Board members concerning membership.

Third, our ASCE, Phila. Section has pledged to assist District 4 in the formulation of the first-ever, Pennsylvania Infrastructure Report Card. The target time to deliver it to our legislators is May 2006. I am looking for a few interested members and non-members alike that would like to help in this effort. The commitment would be for about six months. I am looking for specialists or groups that are knowledgeable and/or have access to data for infrastructure in our area. We will attempt to cover all gradable areas except energy, parks, and security. Please contact me, if interested. District 4 would like to release a statewide report card, as well as four regional ones. We have the support of ASCE National. *Let's do it!*

Fourth, I can tell you that as your representative for Region 2, the transition process has been very challenging. Together with the Board, we will ensure that our members get the best value in this new re-organization. I am very impressed by the interest of some of our past Board members and Past Presidents — they really want to make sure that our Section is poised to continue to be successful in the future. At this time, the final draft governing documents and budget are being thoroughly scrutinized. A vote by all seven member Sections (former Districts 4 and 5) will take place at the end of October. Then, more meetings and negotiations will continue. Region 2 will become a reality starting in 2006. I'll keep you all posted on future developments.

Lastly, I thank you all for all of your wishes during my term. So many people have come forward to tell me that I am doing a good job. I appreciate that and that spurs me forward to try and do more good things for our Section. One member said to me, "I remember you as a kid working for me. It was like yesterday. I can't believe that you are speaking before me now." Well, it is I!

Sincerely,  
Christopher J. Menna, P.E.  
President — Philadelphia Section, ASCE

## NOVEMBER DINNER MEETING

*Continued from Page 1*

Mr. Neukrug will discuss the efforts PWD is undertaking to better manage stormwater and alleviate flooding and property damage. PWD, in conjunction with other City departments, is developing innovative programs and strategies in this effort.

Mr. Neukrug has over 25 years experience in utility management and operations, strategic planning and research, water quality and treatment optimization, capital programming, infrastructure re-investment, environmental policy and "visioning". He is currently responsible for the drinking water supply for the City of Philadelphia, the City's "Clean Waters, Green Cities" sustainable re-development programs and the City's wet-weather permit compliance programs for stormwater.

Mr. Neukrug is an Honorary Member of the American Water Works Association (AWWA) and a trustee for the AWWA Research Foundation. He has served as an executive member to the AWWA Board of Directors, chaired its Water Utility Council and Technical Advisory Groups. He currently chairs the AWWA Utility

Quality Programs Committee, responsible for oversight of the industry's accreditation, QUALSERVE, and Partnership for Safe Water Programs. He has served on the industry's Research Advisory Council, the WEF Watershed Management Committee, the Federal Advisory Committee on Urban Wet Weather Flow, and the National Drinking Water Advisory Council for Source Water Protection.

Closer to home, Mr. Neukrug is the Vice Chair of the Partnership for the Delaware Estuary, Founding Board Member of the American Water Resources Association (Philadelphia Regional Chapter), and serves as an advisor on Water Resource and Quality issues to the State of Pennsylvania, the Delaware River Basin Commission and the EPA's Delaware Estuary Program.

Mr. Neukrug is a Professional Engineer and a graduate of the Civil and Urban Engineering program of the University of Pennsylvania. He has made hundreds of presentations, including numerous testimonies before Congress and the USEPA, on various environmental, financial and utility management issues.

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1401 Kennedy Blvd., Room 830  
Philadelphia, PA 19102  
(215) 686-5183  
Email: christopher.menna@phila.gov

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Flow Science, Inc.  
1500 Kennedy Blvd.  
2 Penn Center, Suite 200  
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**COPY DEADLINE FOR  
DECEMBER '05 / JANUARY '06 ISSUE  
DECEMBER 16, 2005**

**YOUNGER MEMBER FORUM NEWS**

By James Markham, Forum Editor

**Jeremy Colello, Forum President 2005-06**

Pennington Associates, Inc.  
3001 Market Street  
Philadelphia, PA 19104  
(215) 222-3000  
jcolello@pennington.com

**Message from the President**

I would like to take this opportunity to thank all of those members who attended the Hurricane Katrina fundraiser on September 29, 2005. The event raised over \$100, which was sent directly to Louisiana, Alabama and Mississippi.

I also want to personally invite all Younger Members to attend the November 17, 2005 ASCE, Phila. Section Meeting. This event is sponsored by the YMF and will be a great opportunity for Younger Members to network and meet colleagues from across the region.

Jeremy Colello, YMF President

**New Website!**

The YMF website has moved! Our new website is: [www.ymfphilly.org](http://www.ymfphilly.org)! Please update your bookmark and visit regularly to keep track of our upcoming events. Special thanks to **Vincent Chin**, McCormick Taylor, for his efforts on this move.

**Younger Member Awards**

ASCE's Committee on Younger Members (M) is seeking nominees for several national awards. Please visit [www.ymfphilly.org](http://www.ymfphilly.org) or [http://www.asce.org/pressroom/honors/cym\\_awrds.cfm](http://www.asce.org/pressroom/honors/cym_awrds.cfm) for more information.

**Upcoming Events**

The YMF, in conjunction with MASITE, will conduct a Tour of the District 6-0 Traffic Control Center on **November 3, 2005** at 4pm. A happy hour at Kildare's Irish Pub in King of Prussia will follow. Please contact **Dave Petrucci** ([dpetrucci@pennington.com](mailto:dpetrucci@pennington.com)) or visit [www.ymfphilly.org](http://www.ymfphilly.org) for more information.

ASHE will be hosting a free seminar on "Navigating PennDOT's ECMS System" for Younger Members on **November 9, 2005**. This event will be held prior to the ASHE Section Dinner at the Radisson Valley Forge. Please RSVP via fax to **Jeff Obrecht** at **610-722-9010** or visit [www.ymfphilly.org](http://www.ymfphilly.org) for more information.

**Member Spotlight**

**Steve Gault** is Transportation Planning Specialist for Traffic Planning and Design, Inc. (TPD) in Pottstown. Steve joined TPD in 2004 and currently works on their Regional Studies/Municipal Services Team. A graduate of Rensselaer Polytechnic Institute in Troy, NY with a B.S. in Civil Engineering in 2004, he also worked at TPD since 2001 while earning his degree. At TPD, Steve has worked on many different projects. He has worked on a variety of Traffic Engineering studies for the Pennsylvania Turnpike Commission, including raising the speed limit in the Philadelphia area to 65 mph and

**ENGINEERS WEEK COUNCIL  
— VOLUNTEERS WANTED!**

National Engineers Week, dedicated to increasing public awareness and appreciation of engineering, is held in February each year. Engineers Week activities in the Philadelphia area are coordinated by the Delaware Valley Engineers Week Council (DVEWC), which is comprised of Engineers from many of the area's technical and professional societies.

Currently, the DVEWC is looking for volunteers to assist in many of the activities surrounding Engineers Week. Whether you have an hour, a day, a weekend, or more, DVEWC has a need for your talents and skills. Consider becoming involved in one of the following ways: newsletter, website coordination, Hall of Fame, Proclamation Luncheon, Annual Banquet, PR, fund development, or general assistance as needed.

If you are interested in volunteering with DVEWC, or have any questions on the Council or any of the volunteer opportunities, please contact **Susan Best, P.E.**, Senior Vice Chair of the Council, at [sbest@urbanengineers.com](mailto:sbest@urbanengineers.com) or **215-922-8081, 1810**.

capacity studies for widening portions of the Turnpike throughout the state. Additionally, Steve is involved with several point of access studies and traffic impact fee studies at TPD. Steve also works on a variety of traffic impact studies in southeastern PA, including the redevelopment of Valley Forge Golf Course.

Steve has been an active member of ASCE since college and currently serves as an Assistant Secretary on the Board of the Younger Member Forum of the ASCE. He resides in Manayunk. In his free time, Steve can be spotted running on the trails of Fairmount Park.

History will be kind to me  
for I intend to write it.

— Winston Churchill

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**Environmental and Water Resources  
Technical Group**

Continued from Page 1

ment to transcend regulatory and jurisdictional boundaries in the implementation of protection measures." Please RSVP to **Jeremy Colello** ([jcolello@pennington.com](mailto:jcolello@pennington.com), (215) 222-3000 x3514) by November 23, 2005.

**Environmental and Water Resources  
Technical Group**

**DATE:** December 13, 2005; 12 noon

**SPEAKER:** Lorna Rosenberg, EPA

**SUBJECT:** Delaware Valley Green Building Council (DVGBC)

**LOCATION:** Municipal Services Building, 16th Floor, Conference Room C; 1401 Kennedy Blvd.; Philadelphia, PA

**COST:** \$10

**Lorna Rosenberg** is the Executive Director of the DVGBC. The DVGBC is the primary point of contact for users, agencies, and companies that are interested in sustainable communities and is a leader in fostering cooperation and collaboration among organizations dedicated to environmental responsibility and green planning, design and construction. The objective of implementing green building design and construction practices is to improve site planning; to safeguard water and ensure its efficient use; to maximize energy efficiency, conserve materials and resources and insure indoor environmental quality. The goal is to significantly reduce or eliminate the negative impact of buildings on their occupants and on our environment. Please RSVP to **Jeremy Colello** ([jcolello@pennington.com](mailto:jcolello@pennington.com), (215) 222-3000 x3514) by December 9, 2005.

**Delaware Valley Geo-Institute Meeting**

**DATE:** November 15, 2005; 5:30 PM, social hour; 6:30 PM, dinner; 7:15 PM, presentation

**SPEAKER:** Brian Dorwart, Haley & Aldrich, Inc., Boston, MA

**SUBJECT:** Horizontal Directional Drilling

**LOCATION:** Wyndham Valley Forge, 888 Chesterbrook Blvd., Wayne, PA

**Delaware Valley Geo-Institute Meeting**

**DATE:** Tuesday, February 21, 2006

The DVGI February Dinner Meeting will be "Student Night" and will be hosted by the University of Pennsylvania, sponsored by Penn's Department of Earth and Environmental Science. This will be held on **Tuesday, February 21, 2006**. Four speakers (one each from Drexel, Villanova, Penn, and Delaware) are currently scheduled. **Mr. Bob Wright** (Penn Grad and Editor of THE NEWS) will give the keynote address.

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## WHY "SOFT SKILLS" REALLY MATTER TO ENGINEERS

Boost your leadership potential by improving people skills

by Marilyn Nyman

This article appeared in the September edition of *CE News* and is reprinted here with *CE News'* permission. We at THE NEWS thought you might enjoy this.

Staying abreast of Engineering advances is a given in today's competitive marketplace, but it's not the only business imperative. Leadership skills equally are crucial, and Engineers who master them increase their value and put themselves on the succession-planning track.

If leadership ability corresponded to IQ levels, every Engineer would be a contender for the coveted corner office. But, a different kind of intelligence — leadership intelligence — can't be measured. It's difficult to define precisely what makes a great leader, but successful leaders share key traits.

According to **Larry Moy**, retired Philadelphia Streets Commissioner [*and Past President of the Philadelphia Section — Ed.*], good leaders place a high value on communicative "soft skills," and enforce their value across the organization. Leaders build morale, foster pride, and heighten employee ownership when they consistently communicate the organization's vision and mission, and the value employees bring to each. Yet, mastering such people skills can be a struggle for some Engineers, said Moy. In part, he attributes the scant emphasis Engineering schools historically have placed on the soft skills, and the Engineering natural selection process.

"Engineering students are drawn to a system that not only places a premium on precision and accuracy, but in the past, rewarded personal problem solving over collaboration," said Moy. "This same system too frequently de-emphasized the value of leadership skills."

### Soft Skill Essentials

Build your leadership potential by focusing on the following key people skills:

**Ambiguity** — How comfortable are you with imprecision? Leaders lead human beings, not machines, and human beings are not perfect. They miss deadlines, they make mistakes, and they have egos and emotions. Leaders must be able to make decisions using incomplete and imperfect information, balancing competitive priorities, market realities, and resource allocation with finesse.

**Relationship Building** — Leading is less about technical prowess and more about building relationships. Leaders focus on building the relationships that can advance their business agendas, and they don't use Engineering data to cement these crucial bonds. Can you reach out to and connect with customers, board members, investors, the media, and colleagues and associates across the entire organization?

**Decision Making** — What's your decision-making style? There's a word for leaders who

lead by command: dictator. Nobody wants a dictator to succeed, and good leaders learn quickly to avoid the consequences that too often follow "leading by command." Successful leaders earn respect by practicing a more persuasive, consultative decision-making style.

**Executive Presence** — Executive presence is the ability to relay messages to board members, investors, and other stakeholders with conviction, confidence, and credibility. Great leaders are great storytellers, who can present even highly technical information to non-technical audiences in an authentic and passionate manner. Persuading audiences is an essential leadership skill.

**Humor** — Everyone appreciates someone who has a sense of humor and can keep things in perspective. Successful leaders use humor to reveal their humanity. Used judiciously, humor is an essential touchstone that connects leaders with their constituents. [*Who'd have thought? — Ed.*]

How good are your people skills? It's impossible to be objective when evaluating your own performance. An objective outside professional can accurately assess strengths and weaknesses, and serve as a true sounding board. Trained to think in absolutes, Engineers may struggle to incorporate the people skills so essential to their leadership growth. It's a struggle worth undertaking, said Moy, who brought in an outside consultant to conduct leadership analysis and development, and to help forge understandings and connections between diverse departments.

Despite what you may have heard, natural leaders are born as frequently as unicorns. Successful leaders work hard to get to the top. Like any other skill, learning to lead requires commitment, awareness, and practice.

**Marilyn Nyman** is president and founder of The Nyman Group, a consulting firm headquartered in Fort Washington, Pa., that provides executive coaching, corporate consulting, and custom training. She also is a guest lecturer at Harvard Graduate School of Education, Principal's Center. For more information, visit [www.nymangroup.com](http://www.nymangroup.com).

Be thankful we're not getting all the government we're paying for.

— Will Rogers



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## HISTORICAL PERSPECTIVE — THE FAMOUS KINZUA VIADUCT

Life Member **Bill Polk** assembled the following article on a nearby historic structure. Thanks to Bill for an interesting piece on a fascinating effort.

Civil Engineers who haven't yet seen it will be impressed by the famous Kinzua Viaduct near Mt. Jewett in north central Pennsylvania. Originally built in 1882, the structure, 2053 feet in length, was at that time the highest railroad bridge in the world. Rebuilt in 1900, it was in regular service until 1959. In 1963, Governor Scranton authorized the establishment of Kinzua State Park on an adjacent tract of land, thus preserving this national landmark.

In 1977, Kinzua Bridge was placed on the National Register of Historic Places, and in 1982 — on its 100th "birthday" — the structure was designated as a National Historic Civil Engineering Landmark by ASCE. A plaque marking the event is mounted on the bridge's southern abutment.

Today, the Kinzua Viaduct can be easily visited by motorists who can take a short side trip off US Route 6 into the State Park just east of the town of Mt. Jewett. The bridge was used by the Knox, Kane and Kinzua Railroad, which operated a steam locomotive-drawn excursion passenger train over it in summer and fall months until the deterioration of the facility forced an end to this service in summer 2002.

The following history of the Bridge is contained in an interesting photo exhibit on the grounds of the State Park:

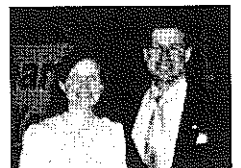
"In the 1800's the abundant natural resources of north central Pennsylvania attracted many men seeking challenge and fortune. The region's vast forests fell rapidly to the axe and the two-man crosscut saw, as railroads carried millions of board feet of timber to waiting sawmills. Chemical plants and tanneries consumed countless railroad carloads of hemlock bark and cord wood.

"The State's rich deposits of fossil fuels — oil, natural gas, and, especially, coal — were important to the nation's growing economy. Railroads carried the coal that fueled the fires of industry, heated homes, and powered the trains themselves. Rapid industrial growth around the

*Continued on Page 7*

## MEMBERS IN THE NEWS

Mr. Markham  
Takes A Wife...



**James Markham**, the ASCE, Phila. Section Vice President, said goodbye to his single guy carefree lifestyle on Saturday, October 8, 2005 as he took **Ann Louise Schanze** as his wife in a ceremony conducted at St. Philip Neri Church, Queen Village. We wish the new couple well in their married life. After a two-week honeymoon in Hawaii, Jim is scheduled to return to work — we'll confirm this once he actually does return!

## OCTOBER DINNER MEETING

Tuesday, October 18, 2005

Union League, Philadelphia PA

### "The Center City Commuter Rail Connection — 20+ Years of Operation"

by Bob Wright, Editor

The first dinner meeting of the 2005-06 season got things started with a proverbial "bang" as a crowd of over 150 came out to hear a panel of distinguished Engineers (who, we are pleased to note, are all members of the ASCE, Phila. Section) give their perspectives on the challenges presented by the **Center City Commuter Rail Connection**. (For brevity's sake, we'll call this "the Tunnel" in the remainder of this article.)

ASCE, Phila. Section President **Christopher Menna** opened the evening with an introduction of several ASCE National visitors in attendance, including District Director **Peter Terry**, and the new Section Officers and Board members. He thanked the sponsors of the meeting — **Hill International**, **STV** and **Urban Engineers**, and turned the podium over to the representatives of the evening's featured college, **Drexel University**.

**Dr. Joseph Martin**, ASCE Student Chapter advisor, took the podium to welcome students from both the Civil and Architectural Engineering department as well as the newly-formed Construction Management discipline. He introduced **Drew Sirianni**, Student Chapter President, who highlighted several activities happening within the Chapter.

**Jeremy Colello**, Younger Member Forum (MF) President, had a few remarks about upcoming YMF events.

**Michael Griffin**, President of the Philadelphia Chapter of the Construction Management Association of America (CMAA), and one of the evening's speakers, made several announcements on CMAA's activities and proudly noted that over 40 CMAA members were in attendance at this joint meeting.

**Ruben David**, Past ASCE, Phila. Section President, opened the formal presentation and introduced the evening's speakers. First up was **Bernard Goldentyer**, the City of Philadelphia's Project Manager for the Tunnel.

Mr. Goldentyer outlined the history of the Tunnel and its original challenges. The first thoughts on the project were developed in 1909 and subsequent ideas were explored in the 1930's and 1950's. The project was viewed as both a means to create a truly regional commuter rail network as well as a massive redevelopment effort. Funding was, unfortunately, not to be found to make it happen.

In the early 1960's, especially after the creation of the federal Urban Mass Transit

Administration (UMTA) in 1964, the project was reconsidered. UMTA would be a means to get federal dollars for this undertaking, which was estimated to cost \$200 million at the time. After a couple of attempts, funding was eventually secured and the project was begun. Some of the main stumbling blocks to funding were the view by UMTA that the project was more urban redevelopment than transit. The funding was authorized by the Secretary of Transportation in the final days of the Ford Administration in 1977.

Mr. Goldentyer noted that the major problem was not distance between the two terminals to be connected, Suburban Station and Reading Terminal, but elevation. At Suburban Station, the tracks were two stories below grade, while the Reading Terminal tracks were two stories above grade. This forced the "L"-shaped configuration that evolved as the ultimate solution.

The Tunnel was not well received by all. Mr. Goldentyer recalled that Philadelphia Magazine described it as the "Black Hole of Calcutta." Even THE NEWS called it controversial in an announcement of a Section meeting on the topic in 1977.

**James Toth**, one of the principal designers of the Tunnel, walked through the various design challenges that the project faced in one of the busiest and most crowded areas of Center City. He noted that the Reading Terminal was originally slated to be demolished and the Tunnel run beneath the site. During design, the Terminal was declared historic, which forced a change in plans and required an extensive underpinning of the structure to snake the Tunnel under it. This was further complicated by the location of the 11th Street Station (later changed to Market East), the only new station to be built, directly under the Terminal.

Several buildings had to be significantly and carefully underpinned (and, unfortunately, two of these buildings would be demolished only a few years after completion of the Tunnel). The Tunnel crossed above the Broad Street Subway in a space built into the Subway when it was constructed in the 1920's, but the nearby SEPTA subway-surface trolley tube had to be moved several feet southward to allow the Tunnel to get through. Mr. Toth showed several slides of this detailed work.

Changes at Suburban Station's platforms, including the addition of escalators, presented

more headaches. Mr. Toth explained that designers had to literally crawl through areas beneath platforms and tracks to locate and chart utility lines that would need to be moved for this purpose.

**Michael Griffin** presented details on construction from 16th Street to the Reading Terminal from his role at the time as one of the City's construction managers. In addition to the major underpinnings of buildings and utility relocations, the major streets in the project's path had to be kept open to "normal" traffic at all times. This forced the use of timber decking on many roadways, causing many to remark that Philadelphia finally had a boardwalk which snaked through Center City.

Mr. Griffin noted that an innovative tieback method was employed to keep the Masonic Temple intact during construction. Drexel Professor, world-renowned expert, and Past Section President **Bob Koerner** was retained for his expertise in this area and his suggested methods, including the unique secant pile proposal at the Temple, proved to be efficient and excellent solutions.

In the Center City environment, many underground utility lines had to be supported and, in some cases, relocated, and a large number of these were critical facilities. Among them was a major Northeast Corridor trunk line of Bell Atlantic which could not be interrupted at any time.

The consultant team's construction manager, for the segment from Reading Terminal to the north portal near Brown Street, **Joseph McAtee**, outlined several problems faced in that area. The Ridge Avenue Subway had to be rebuilt, with a new Chinatown Station, to allow the Tunnel alignment to pass. Just to the north of this, the Tunnel passed beneath the future Vine Street Expressway, which would be partly below grade at this crossing, and several large pumps were required to keep the low point properly drained.

Mr. McAtee added that, in addition to structural considerations such as underpinning the Gallery shopping mall and several parking garages, and the support of the myriad utility lines and major streets, other unexpected items cropped up. One of these was the discovery of a long-forgotten burial ground near Vine Street.

Much of the soil in the area was mica schist, which is difficult to handle and crumbles easily, and this was generally expected based on geotechnical exploration of the area done during design. The contractors unexpectedly encountered a silty fill area in excavations around Vine Street, and soon began to find what workers thought were vases but turned out to be skulls. Work was stopped and some historical research was undertaken, which led to information on an illegal burial area behind a private house. The bodies were interred in the 1850's; to the best of available data, and had to be exhumed, identified and reinterred before work could resume. Mr. McAtee added a few puns on this, much to the chagrin of the audience.

In his wrap-up, Mr. McAtee gave a few facts and figures for the project — there were 18 con-

Continued on Page 6

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## MEMBERS IN THE NEWS

### Welcome New Members

The ASCE, Phila. Section gained 32 new members in September and 99 in October. Here are our new counterparts:

### September New Members

Randy Aiken, Joseph Arentz, Robert Chimchirian, Nicole Ciuffreda, Shawn Cox, Rocco Duva, Thomas Fountain, Stephanie Gilpin, Ernest Giovannitti, Andrew Hale, Daniel Harpstead, Bryan Healy, Priya Heerwani, John Henson, Nicholas Jaboni, John Lehane, Jessica May, Mike Mayhew, Bob Muir, Corinne Murphy, Mohan Nayak, Christopher O'Keefe, Keith Pfaff, Brad Pickering, Mark Reinmiller, Justin Sauers, Saitsh Suri, Monica Sweeney, Robert Titerence, Kristopher Weidner, Yvette Young, Steven Zeng.

### October New Members

Madeline Abrams, Francisco Aguirre, John Alleva, Claire Apaliski, Christopher Bakey, Chris Barry, Charles Bassett, Andrew Baxter, James Beideman, Matt Berdahl, Scott Birney, Theodore Boris, William Bradfield, Ali Brohi, James Brooks, William Brown, Bill Browne, Chris Cambria, Nick Caputo, David Casper, James Chiusa, Paul Cianci, Jon Collins, Robert Cunnane, Fernando DeLeon, Alana Dedrick, Marguerite Dehaven, Michael Denichilo, Bruce Douglas, Steven Dziuban, Charles Echelmeier, Brandon Femia, Xue Feng, Farley Fry, Christopher Garro, Justin Geonnotti, Brian Gibson, Caitlin Glenn, William Grandi, Ryan Hanlon, Jonathan Harris, Zachary Harris, Michael Hartman, Katie Heam, Timothy Hill, Duy-Thao Ho, Megan Holloway, Michael Hornberger, Erin Johnson, Charles Kim, Kyle King, Jeffrey Knuettel, James Koger, Julia Lacy, Sean Levensgood, Gary Lucas, Matthew Maddalo, Kevin Magerr, Michael Mastaglio, Rory McCormick, Mallory McDonnell, Pradip Mitra, Carlos Molina Hutt, Jamie Mucha, Jeffrey Muir, David Myers, Ivanley Moissette, Michael Noonan, Andrew Pace, Steven Patak, Nirav Patel, Kevin Perazzelli, Ira Pierce, William Reardon, Bond Reinhardt, Margaret Riestler, Brooke Rogers, Paul Rudwick, Angela Russo, Robert Ryland, Elizabeth Scheibe, David Scovill, Laura Seitz, Pat Sejkora, Blair Smith, Ryan Smoke, James Sweeney, Robert Swoyer, Allison Trinkle, Patrick Veale, John Walton, Timothy Weicker, Stephanie Wolfe, Jeffrey Wright, Kevin Wright, Elizabeth Yanosey, Jason Yeager, Sang-Sik Yeo, Stephen Zacharski.

## OCTOBER DINNER MEETING

Continued from Page 5

tract packages for construction which involved 35 prime contractors, and the project required 1 million cubic yards of excavation and 300,000 cubic yards of concrete. It was perhaps the first project in the area that had to address the curing of mass concrete and the handling of heat resulting from this curing, and several innovative methods were used to do this. The final project cost was \$330 million.

After a short question/answer session, Past President David and President Menna presented tokens of the Section's appreciation to the speakers for a fascinating presentation.

## CITY HALL NATIONAL HISTORIC CIVIL ENGINEERING LANDMARK CELEBRATION — HOLD THE DATE!

One of our nation's most revered historic treasures resides right here in Philadelphia — City Hall. Next year, ASCE National will be formally citing City Hall as a National Historic Civil Engineering Landmark. The ASCE, Phila. Section will sponsor a dedication ceremony and reception honoring this great historic building and this great City.

City Hall is literally in the heart of Philadelphia, in Center Square — William Penn's exact geographical center of his Plan of Philadelphia. This building, designed by Philadelphia architect **John McArthur**, is the largest municipal building in the United States and the largest masonry building in the world. The 510-foot structure, topped by a 37-foot statue of William Penn, took 30 years to build. It is undergoing a major renovation which includes its first exterior cleaning.

Our dedication ceremony is being planned to be held at the City Hall Courtyard at 12:00 noon on **Monday, May 22, 2006**. A reception will follow in Conversation Hall.

More information on this ceremony will be included in upcoming issues of THE NEWS.

Seen on a bumper sticker —

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## FUTURE CITY GEARS UP FOR 2005-2006

The Philadelphia Regional Future City Competition, an education outreach program of the Delaware Valley Engineers Week Council, is actively seeking volunteers for this year's program. Although the Regional Competition will not be held until January, the Future City Steering Committee has been registering schools since May.

In August, even before the school year began, there were 12 schools registered and since the beginning of the school year, more schools have been starting the program. The program offers 7th and 8th grade students the opportunity to work with their teacher and a practicing Engineer mentor to:

- Design a city of the Future using SimCity 3000
- Write a researched Engineering essay of 500-700 words and a 100-300 word abstract describing their city development
- Build a 30" x 60" model of a portion of their city
- Prepare a 7 minute presentation

The schools will come together at the regional competition at Villanova on **January 28, 2006** to present their cities to teams of judges. The winning team will represent the Philadelphia region at the national competition in February. In addition, there are over 40 other prizes awarded at the regional competition. The ASCE, Phila. Section has actively participated in this program and has sponsored a Special Award for one of the teams.

In order to run the program, Future City needs almost 200 volunteers to be:

- Mentors — needed **NOW!**
- City Design Judges — needed in December
- Essay Judges — needed in late December—early January.
- Preliminary Judges, Special Award Evaluators and competition workers — needed in late January

Why not volunteer for this exciting program? It will give you an opportunity to share your Engineering expertise with middle school students and you will have a lot of fun. Sign up on-line at [www.futurecityphilly.org](http://www.futurecityphilly.org), or e-mail Jennifer Wetzel, the Volunteer Coordinator, or phone (215) 573-3935 or [volunteer@futurecityphilly.org](mailto:volunteer@futurecityphilly.org).

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## DECEMBER DINNER MEETING

Continued from Page 1

Since 1990, New Jersey has led the nation in terms of the number of new projects and Federal dollars invested in shore protection. This is a consequence of two principal factors, the first being demographic — one out of eight Americans lives within 100 miles of the NJ shore, which extends from Sandy Hook south 125 miles to Cape May. The second factor is the existence of a non-Federal sponsor — the New Jersey Department of Environmental Protection (NJDEP) — with a program of dedicated funding for shore protection that has amounted to \$25 million per year. More recently, the Corps of Engineers and the State of Delaware have begun implementing shore protection projects along that state's 25 miles of coast. The concentration of cost-shared Federal shore protection projects in New Jersey and Delaware reflects growing awareness of the importance of protecting the coastal residential and tourism economy by both state and Federal governments.

The December SAME presentation will cover:

- Problems of erosion and storm damage along the New Jersey and Delaware coasts
- Political and legislative developments that have affected growth of the shore protection program
- Shore protection and coastal navigation projects over the past fifteen years, plus those that are under construction and planned for the next decade.

Mr. Gebert has worked on shore protection navigation projects for the Army Corps of Engineers since 1978, and has been part of the Philadelphia District since 1981. He was selected as Coastal Planning Chief in July 2002. In the interim, the District has performed initial construction for several shore protection projects in New Jersey and Delaware, as well as construction of the Lower Cape Meadows — Cape May Point ecosystem restoration/shore protection project. As of October 2005, one shore protection project is under construction in Delaware (Fenwick Island), two seawalls are under construction at inlets in New Jersey, and two additional shore protection projects are scheduled to begin in the last quarter of 2005.

Prior to 2002, Mr. Gebert held the position of Oceanographer in Hydraulics Branch, where he contributed to design investigations for construction of the new south jetty at Barnegat Inlet (1988–1991), the sand bypassing system at Indian River Inlet, DE (1990), and several shore protection projects, including Cape May, Ocean City, Seven Mile Island, and Absecon Island, NJ (1990–2004).

During the mid-1990s, Mr. Gebert was involved primarily in deep-draft navigation projects for the proposed deepening of the Delaware River Main Channel and the Chesapeake & Delaware Canal navigation projects, addressing issues related to circulation, salinity, and sedimentation/dredging. His first four years with the Corps of Engineers were in the Wilmington District, where he worked on the Wrightsville

Beach and Carolina Beach (North Carolina) shore protection projects. He has a Bachelor of Science in Geology and Geophysics from Yale University in 1974. Except for four years in Wilmington, North Carolina, he is a lifelong resident of New Jersey.

## HISTORICAL PERSPECTIVE

Continued from Page 4

Buffalo, New York area produced a high demand for coal. The city's location on the Great Lakes also made it a center for shipping of coal to other industrial areas in mid-America.

"But between Pennsylvania's coal deposits and the awaiting industry to the north and west lay an obstacle — the Kinzua Valley. The New York, Lake Erie and Western Railroad and Coal Company recognized the profits to be gained by transporting coal across the Kinzua Valley to waiting markets in Buffalo. Company president General Thomas Kane, of Civil War fame, and brilliant Civil Engineer Octave Chanute together faced the challenge of the Kinzua Valley. Building a bridge directly across the Valley was considered the best option.

"Chanute awarded the bid to the Phoenix Bridge Works, and erection of the ironwork began on April 10, 1882. In 94 working days, the 40-man crew had completed the highest and longest railroad bridge ever built — 301.5 feet high and 2053 feet long. The tubular wrought iron columns resembled logs and led initially to the mistaken belief that the bridge was constructed of wood. Concerns were somewhat relieved when the structure passed safety inspections and then survived an 1889 train crash. High winds sweeping up the Valley caused the flexible bridge to sway and sometimes blew loads of hemlock bark off railroad cars. Train speeds were limited to 5 mph while crossing the Valley.

"By 1900 many changes had occurred in the railroad industry. Bigger and more powerful locomotives pulled larger railroad cars with heavier loads. After 18 years of use, the original bridge needed to be replaced. Reconstruction began on May 24, 1900, again under the direction of Octave Chanute. Crews started removing and replacing towers at each end and worked toward the middle. In four months workers had replaced the ironwork with 3357 tons of steel from the Elmira Bridge Company.

"The location and overall size of the new bridge was the same, but its design included many new features. The most obvious change was the replacement of the tubular columns with much larger and sturdier rectangular ones. While the rebuilt bridge was only the fourth highest one at that time, popular excursion trains continued to bring festive sightseers from as far away as Cleveland and Rochester. Today, the bridge still holds an almost mystical attraction for visitors to Kinzua Bridge State Park."

In 2001, the Pennsylvania Department of Transportation designated its State Route 3011 access road to the viaduct as Pennsylvania's First Scenic Byway, the Kinzua Bridge Scenic Byway. In June 2002, however, the viaduct's condition forced the State to close it to train traffic, and

shortly thereafter, it became listed as one of top ten Most Endangered Historic Properties in the Commonwealth.

The following August saw the bridge closed to pedestrians. Engineers were concerned that the bridge would become unstable under certain wind conditions. The understructure exhibited rusting and deterioration of the steel and the steel girder connections.

Repairs to the structure were undertaken in spring 2003. However, on July 21, 2003, a tornado struck, resulting in the loss of 11 of the 20 towers that supported the Viaduct.

Check the bridge's website — [www.kinzuabridgeonline.com](http://www.kinzuabridgeonline.com) — for more information.

## SECTION WEB SITE!

Check us out at [www.asce-philly.org](http://www.asce-philly.org). Make sure you bookmark this site to check on our latest meetings and events, links and much more! Comments and/or suggestions? Please contact us either via our Electronic Message Hotline at 1-800-461-4190 (24 hours a day) or e-mail at [info@asce-philly.org](mailto:info@asce-philly.org).

I never drink water because of all the unhealthy things fish do in it.

— W.C. Fields

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**TECHNICAL GROUPS/CHAIRS**

Information on the Section's Technical Groups is given below. Vice President **James Markham** will coordinate activities of the Groups. If you have any topics that you think would be of interest to the Groups, please feel free to pass this information along to the Group Chair. As usual, an informative and interesting program is in the works and events will be reported in upcoming issues of THE NEWS.

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**SECTION MEETINGS 2005-06****MARK YOUR CALENDARS AND HOLD THESE DATES!**

The ASCE, Philadelphia Section Meeting program for the 2005-06 season is still being finalized. Several topics have been tentatively set but some remain to be finalized. Please place the following dates in your calendar. Section Meetings are scheduled for these times and locations. We have also included some information as we know it at presstime. Watch this space in future issues of THE NEWS and the Section website for more information.

All Dinner meetings feature a cocktail hour starting at 5:30 PM, dinner at 6:30, and the meeting presentation following at 7:30, unless otherwise noted. You are welcome to attend the presentation portion without paying for dinner if you prefer.

Wednesday, January 25, 2006	"The Pennsylvania Turnpike, I-95 Interchange" Joint meeting with American Society of Highway Engineers, Delaware Valley Section • Cocktails 6:00 PM, Dinner 7:00, Presentation 8:00 • Radisson Hotel, Valley Forge
Thursday, February 23, 2006	"The Cherokee Development" • Joint meeting with ASCE South Jersey Branch • Wyndham Hotel, Mount Laurel • Rowan University Night
Thursday, March 16, 2006	"Philadelphia's Capital Budget for Transportation" • Joint meeting with Women's Transportation Seminar, Philadelphia Chapter • Union League
Thursday, April 20, 2006	Joint meeting with American Concrete Institute, Delaware Valley Chapter • Union League
Friday, May 5, 2006	Annual Spring Social and Dinner Dance • Villanova Conference Center

**2006 ELECTRICAL TRANSMISSION CONFERENCE**

All eyes will be on the Wynfrey Hotel in Birmingham, Alabama for the 2006 Electrical Transmission Conference — "*Structural Reliability in a Changing World*," to be conducted **October 15-19, 2006**.

The 2006 Conference is an exciting forum for transmission and substation engineers to exchange technical knowledge, via workshops, paper presentations, exhibits and tours. Some of the topics that will be covered include structural analysis, design, foundations, asset management and project case studies.

For additional information visit [www.asce.org/conferences/sei06](http://www.asce.org/conferences/sei06) or contact **Debbie Smith** at [dsmith@asce.org](mailto:dsmith@asce.org) or (703) 295-6095.

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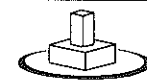
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