Collectively, Pennsylvania Society of Professional Engineers members stand for:

- Protecting the License
- Standards for Professional Conduct
- Philanthropy
- Education

Stand With Us at the PSPE 2015 Conference.

81st Annual Conference
Pennsylvania Society of Professional Engineers
September 23 - 26, 2015
DoubleTree by Hilton Pittsburgh-Cranberry
PSPE 2015 Conference

Stand With Us
at the PSPE 2015 Conference.

2015 Conference Planning Committee

Steve Wilson, PE, Chair
David Briskey, PE | Hill International
Amy Daiute, PE | Traffic Planning & Design
Jim DiLouie, PE | Pennsylvania Turnpike Authority
Joe Gaus, PE | CJL Engineering
John Hayward, PE, PhD
John Nawn, PE, F.NSPE | Fleisher Forensics
Kathleen Ormiston | Astec Systems, Inc.
Timothy Ormiston, PE | PPG Industries
Francis Stanton, PE, F.NSPE | The ENC Group
Tom Tronzo, PE
David Williams, PE | Michael Baker International

PSPE 2015 Conference Itinerary
DoubleTree by Hilton Pittsburgh-Cranberry

Wednesday, September 23
3:00 pm – 6:00 pm PSPE Executive Committee Meeting
7:00 pm Dinner at Atria’s (Wexford, PA)

Thursday, September 24
7:30 am – 5:30 pm Registration, Exhibits, Coffee Break
8:30 am – 11:45 am Concurrent Sessions | up to 6 PDH
9:00 am – 3:00 pm Tour departs for Wendell August Forge
12:00 pm – 1:30 pm Lunch and Order of the Engineer Ceremony
1:45 pm – 5:15 pm Concurrent Sessions
6:00 pm – 9:00 pm Buffet dinner, cash bar and trivia
With music by Leap of Faith

Friday, September 25
7:30 am – 5:00 pm Registration, Exhibits, Coffee Break
8:30 am – 12:00 am Concurrent Sessions | up to 6 PDH
9:00 am – 3:00 pm Tour departs for Hartwood Acres
12:00 pm – 1:15 pm Lunch and Guest Speaker: Tim Austin, P.E., F.NSPE; NSPE 2015-16 President
1:15 pm – 4:45 pm Concurrent Sessions
5:30 pm – 6:15 pm President’s Reception
6:15 pm – 9:15 pm Installation of Officers, Awards Banquet; PEF Fundraiser – Around the World in 80 Days

Saturday, September 26
8:00 am – 9:00 am Past Presidents’ Breakfast (invitation only)
9:00 am – 12:00 pm PSPE Board of Directors Meeting
12:00 pm – 1:00 pm Lunch
Register online at www.pspe.org. Pay by check or credit card.

**Full Registration** includes lunch, dinner, meetings, sessions, coffee/exhibit area, and certificates of attendance for Thursday and Friday.

**Daily Registration** includes meetings, sessions, lunch, coffee/exhibit area, and certificates of attendance on specified day. Dinners require additional tickets.

**Spouse/Guest Registration** There is no general registration fee, unless you are attending sessions. Spouses attending sessions will need to register as an Engineer.

**Tours** require additional tickets.

**Meal tickets** can be purchased ala carte. Select spouse/guest registration to access this option.

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### Stand With Us at the PSPE 2015 Conference.

![Image of people standing together]

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### Primary Registration Fees

<table>
<thead>
<tr>
<th></th>
<th>NSPE Member</th>
<th>Non-member</th>
<th>Student</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full conference</td>
<td>$385</td>
<td>$585</td>
<td>$80</td>
</tr>
<tr>
<td>Thursday sessions</td>
<td>$200</td>
<td>$300</td>
<td>$40</td>
</tr>
<tr>
<td>Friday sessions</td>
<td>$200</td>
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<td>$40</td>
</tr>
</tbody>
</table>

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### Tickets Ala Carte

<table>
<thead>
<tr>
<th>Event</th>
<th>Fee per person</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thursday lunch</td>
<td>$30</td>
</tr>
<tr>
<td>Order of the Engineer Ring</td>
<td>$10</td>
</tr>
<tr>
<td>Thursday dinner</td>
<td>$35</td>
</tr>
<tr>
<td>Friday lunch</td>
<td>$30</td>
</tr>
<tr>
<td>Installation and Awards Banquet</td>
<td>$55</td>
</tr>
<tr>
<td>Saturday lunch</td>
<td>$20</td>
</tr>
</tbody>
</table>

Register online at www.pspe.org. Pay by check or credit card.

Questions?
717.441.6051 | contactpspe@pspe.org
Thursday, September 24, 2015

Hotel Accomodations

DoubleTree by Hilton Pittsburgh-Cranberry
PSPE rate: $125
(10% tax will be added)
Call 724-776-6900 before September 1.
Group code: Society of Professional Engineers (SPE).

Arriving Early?

If you arrive on Wednesday evening in time for dinner, join us at Atria’s Restaurant in Wexford. We will be ordering off the menu and paying by individual check. Transportation will be provided from the hotel by carpool and hotel shuttle.

Engineers, spouses and families are welcome!

What to Wear

Business casual attire is acceptable for all daytime sessions and for Thursday evening. Wear layers to be comfortable in the hotel.

Friday evening reception and banquet dress code is semi-formal to formal.

Not Attending Thursday Classes?

Wendell August Forge is America’s oldest and largest forge, producing hand-wrought ornamental metalware and elegant giftware in aluminum and other metals since 1923. The company was founded in Brockway, Pennsylvania by Wendell McMinn August.

The heritage art of Wendell August Forge is preserved by the company’s artisans and craftsmen, who use the original eight-step process to produce every heirloom piece in metal.

Join us for a tour of the WAF history center and workshop. PSPE tour guests will meet in the DoubleTree lobby at 9:00 am. There is no fee for the tour and no conference fee for this event, but please register in advance so adequate transportation can be arranged. Lunch will be ordered from the menu at a local restaurant before returning to the hotel mid-afternoon.

Order of the Engineer Induction Ceremony

As an engineer you take deep pride in your profession. Stand with peers as you are inducted into the Order during this solemn and respectful ceremony at the PSPE 2015 Conference.

The Order of the Engineer is the contingent of engineers in the United States who have accepted the Obligation of an Engineer. The Order of the Engineer fosters a unity of purpose and honors lifelong dedication to the profession.

Members of the Order voluntarily pledge to uphold the standards and dignity of the engineering profession and to serve humanity by making the best use of Earth’s precious wealth. The symbol of the Order is a stainless steel ring worn on the fifth finger of the working hand. (A P.E. is not required.)

Trivia Competition Chapter Challenge

Join PSPE for a fun evening of music and trivia. A buffet dinner will be served during which “Leap of Faith” will provide live music for your enjoyment. After dinner stick around for a trivia competition that will test your knowledge of fun facts and earn points for your chapter in a “Chapter Challenge”. The winning chapter will receive $500 for their local MATHCOUNTS competition!

After the trivia competition, “Leap of Faith” will return to finish out the evening. Guests of conference attendees are welcome to participate in the competition.

Stand With Us at the PSPE 2015 Conference.
Not Attending Friday Classes?

Hartwood Acres is an Allegheny County Park consisting of 629 acres. Preserved within the park is one of the largest and most spectacular country estates in the region. Hartwood consists of a stately Tudor Mansion (erected in 1929) cottage, stable complex and gate lodge (erected in 1927). Designed by Alfred Hopkins for John and Mary Flinn Lawrence, the mansion houses an excellent collection of original English and American antiques. Its 16th century architectural design affords both young and old opportunity to glimpse into a part of Pittsburgh’s past.

Join PSPE for a tour of the Hartwood Mansion, stable, and gardens. PSPE Hartwood Acre tour guests will meet in the DoubleTree lobby at 9:00 am. Cost for the tour is $6 for adults and $4 for senior citizens payable at the mansion. There is no conference fee for this event, but please register in advance so the tour reservation can be made and so we can arrange transportation. Lunch will be ordered from the menu at a local restaurant before returning to the hotel mid-afternoon.

PSPE Installation and Awards Banquet

The Pennsylvania Society of Professional Engineers is proud to honor the accomplishments and performance of PSPE chapter activities, individual Professional Engineers of the PSPE membership, and individuals whose efforts have enhanced the integrity of the engineering profession. Join us Friday evening as we recognize those deserving recognition:

2015 Engineer of the Year
2015 Young Engineer of the Year
2015 President’s Dedicated Service Award
Chapter Communications Award
Chapter Special Project Award

Stand With Us at the PSPE 2015 Conference.

Pennsylvania Engineering Foundation 2015 Fund Raiser

Around the World in 80 Days!

Race around the world and back home again to raise funds for the Pennsylvania Engineering Foundation! Every year PEF sponsors scholarships and the Mathcounts program for students all across Pennsylvania. Support PEF and race to the finish line!

*Continuing Education Notes

New York: All sessions will be reviewed for acceptability toward the engineer’s license in NY. As sessions are approved an * will be placed next to the title.

New Jersey: PSPE is an approved provider of continuing education towards the NJ engineers license.

Pennsylvania: The Pennsylvania State Board for Professional Engineers, Land Surveyors and Geologists does not provide preapproval for any continuing professional competency activities, courses or providers. Rather, engineers are granted the ability to determine for themselves whether a particular session maintains, improves or expands skills and knowledge obtained prior to initial licensure, including law and ethics applicable to the profession, or develop new and relevant skills and knowledge.
### Thursday Sessions At a Glance (9/24)

<table>
<thead>
<tr>
<th>Time</th>
<th>Track I</th>
<th>Track II</th>
<th>Track III</th>
<th>Track IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30 am – 10:00 am</td>
<td>5 Palmetto SR 826/836 Interchange ¹</td>
<td>Delivery of a Program Through a Public Private Partnership ¹</td>
<td>Boundary Data Conflicts</td>
<td>High Roller Observation Wheel ¹</td>
</tr>
<tr>
<td>10:15 am – 11:45 am</td>
<td>S.R 0021-A10, Masontown Bridge Replacement</td>
<td>The State of the PA Uniform Construction Code ¹</td>
<td>Ethical Risk Management ¹</td>
<td>Phipps Conservatory Reconstruction</td>
</tr>
<tr>
<td>12:00 pm – 1:30 pm</td>
<td>Lunch and Order of the Engineer</td>
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<td>1:45 pm – 2:45 pm</td>
<td>Expert Witness/Engineering Ethics: The Landslide of Unethical Practice ¹</td>
<td>Building a Sustainable Campus ¹</td>
<td>Engineering Lessons to be Learned to Reduce Falls - The #1 Cause of Accidents in Buildings &amp; Sites</td>
<td>Hermitage’s Self Sustaining Wastewater Treatment ¹</td>
</tr>
<tr>
<td>3:00 pm – 4:00 pm</td>
<td>CSX Transportation J&amp;L Tunnel Modification Project ¹</td>
<td>Solar Generation – From Concept to Interconnect ¹</td>
<td>Lean Six Sigma; An Engineering Perspective</td>
<td>How to Easily Automate Your Job Site Monitoring Using Drones</td>
</tr>
<tr>
<td>4:15 pm – 5:15 pm</td>
<td>Veteran’s Memorial Bridge, Fallston, Beaver County ²</td>
<td>TechShop - Accessing the Tools of Innovation</td>
<td>Building Commissioning and RetroCommissioning ¹</td>
<td>Specifying LED Lighting – The Challenges ²</td>
</tr>
</tbody>
</table>

¹ Approved for continuing education credit towards New York Engineer’s license.
² Submitted and under review. NY approval anticipated.

### Friday Sessions At a Glance (9/25)

<table>
<thead>
<tr>
<th>Time</th>
<th>Track V</th>
<th>Track VI</th>
<th>Track VII</th>
<th>Track VIII</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30 am - 9:30 am</td>
<td>Pennsylvania Turnpike/I-95 Interchange Project – Update ¹</td>
<td>Minimizing Corrosion in Fire Protection Piping ¹</td>
<td>Forensic Project Management I ¹</td>
<td>Full-Scale Collision Load Test Builds Confidence in Deployable Flood Wall at World Trade Center</td>
</tr>
<tr>
<td>9:45 am - 10:45 am</td>
<td>PA Route 28, East Ohio Street Improvements – Project Completion ¹</td>
<td></td>
<td>Forensic Project Management II ¹</td>
<td>The Smart Grid – What Is It? ¹</td>
</tr>
<tr>
<td>11:00 am - 12:00 pm</td>
<td>Buckled Piling at I-43 Leo Frigo Memorial Bridge</td>
<td>Ethics Case Study: Johnstown’s Flood ¹</td>
<td>EXCELent Engineering Worksheets: Advanced Tips &amp; Tricks</td>
<td>3D Printing/Additive Manufacturing - Current and Future Applications ¹</td>
</tr>
<tr>
<td>12:00 pm - 1:15 pm</td>
<td>Lunch and Guest Speaker: Tim Austin, PE, F.NSPE, NSPE President 2015-16</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>1:15 pm - 2:15 pm</td>
<td>Diverging Diamond Interchange (I-70) ¹</td>
<td>Anchoring &amp; Restraint of Rooftop Equipment in High Wind Areas; Vibration Isolation of Mechanical Systems ¹</td>
<td>Economic Metrics for Engineering Projects</td>
<td>Planning for the Future: Understanding BIM and the Emerging Technologies for Collaboration and Efficiency ¹</td>
</tr>
<tr>
<td>2:30 pm - 3:30 pm</td>
<td>Maintenance and Protection of Traffic (Traffic Control During Construction) ²</td>
<td>Seismic Restraint ¹</td>
<td>Powering the Telephone I ¹</td>
<td>Rail Welds – Failure Analysis and Testing</td>
</tr>
<tr>
<td>3:45 pm - 4:45 pm</td>
<td>Design and Construction of Main Span Foundations for Kentucky Lake Bridge ¹</td>
<td>Tower Designs, Structural Upgrades and Maintenance using ANSI/TIA-222-G ¹</td>
<td>Powering the Telephone II ¹</td>
<td></td>
</tr>
</tbody>
</table>

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² Submitted and under review. NY approval anticipated.
Pennsylvania Rapid Bridge Replacement Project - Delivery of a Program Through a Public Private Partnership

Kenneth J. Wright, PE HDR Inc.

The Pennsylvania Department of Transportation (PennDOT) engaged Plenary Walsh Keystone Partners (PWKP) to replace 558 aging bridges in just three years, completing construction by the end of 2017. The bridges are primarily crossings on smaller state highways, many in rural areas, rather than interstate bridges or large river crossings.

This Public-Private Partnership (P3) is designed to bolster PennDOT’s ongoing effort to address the state’s nearly 4,200 Structurally Deficient (SD) bridges. With the P3 approach, PennDOT will replace bridges around the state more quickly; achieve significant savings for taxpayers; and minimize the impact on the traveling public when compared to the normal delivery process. The initiative was approved by the Public-Private Transportation Partnership Board in September 2013. In October 2014, PWKP was selected as PennDOT’s private partner.

PWKP and its team of Pennsylvania-based subcontractors and consultants will design and construct these bridges, as well as providing operation and maintenance for 25 years after construction is complete.

Boundary Data Conflicts

Rebecca A. Bowman, Esq., P.E.

This session will discuss resolving boundary data conflicts in construction. Participants will learn to 1) identify boundary data issues, 2) investigate for missing data, and 3) pursue solutions. This session is designed for all licensed civil and construction engineers.

Rebecca A. Bowman, Esq., P.E. is the principal of a woman-owned business, certified in civil engineering, dispute resolution, real estate, legal services, strategic development, and training by Allegheny County, PennDOT, PADGS, PAT, Massachusetts, New York State and New Jersey Transit. Working in construction for more than forty years, she is experienced in engineering design and forensic analysis, construction/project management, boundary law issues, dispute resolution, real estate, and small business start-up. She is a registered professional engineer and a certified arbitrator, mediator, and Christian conciliator. Mrs. Bowman writes a column for the PE Reporter, “Risky Business,” and has been an adjunct professor at the Community College of Allegheny County and at Penn State. She received her B.S. degree in civil engineering, from the University of North Dakota, her M.B.A. degree from Oklahoma University and her J.D. degree from Duquesne University.

High Roller Observation Wheel

Daniel A. Schwarz, P.E. American Bridge Co.

This presentation discusses construction of the Las Vegas High Roller observation wheel by American Bridge Co. for Caesars Entertainment in Las Vegas, NV. With a peak height of 500 ft. the High Roller is currently the largest observation wheel in the world as measured both by height and capacity. The wheel is able to carry 1120 passengers at a time in 28 climate controlled cabins. The presentation gives a detailed description of the Construction Engineering required to create and implement the erection procedure. The international procurement process of the fabricated and manufactured materials is also discussed. This presentation will benefit those interested in Complex Steel Erection, Steel Fabrication and Construction Engineering.

Dan Schwarz, PE is a 2001 graduate of Lehigh University with a degree in Civil Engineering. He started his career with American Bridge working on several steel bridge rehabilitation projects and the Woodrow Wilson Bridge in Oxon Hill, MD. He worked for Trumbull Corporation on the North Shore Connector in Pittsburgh. In 2011 he went back to work for American Bridge as the Project Engineer on the Las Vegas High Roller. He completed the High Roller job as the Project Manager in 2014.
Edward A. Terhune, P.E. and Glenn D. Stickel, P.E.
SAI Consulting Engineers

The Masontown Bridge is a seven-span, 1,700-foot-long, weathering steel, multi-girder bridge with a main span of 440 feet over the Monongahela River.

Attendees will learn about the process of selecting a bridge alignment; design issues resulting from half-width construction of long-span bridges; economical solutions to half-width pier construction in a river; and issues associated with a major river crossing including O-Cell testing and thermal control of mass concrete.

Glenn Stickel joined SAI Consulting Engineers, Inc. in 1982 and currently holds the position of Vice President. Mr. Stickel has managed such projects at SAI including the Masontown Bridge Replacement; Fort Pitt Boulevard/Interstate Connector; the Lane Bone Bridge Rehabilitation; and the 6th, 7th, and 9th Street Bridge rehabilitations.

Edward (Terry) Terhune has a Bachelors and Masters degree in Civil Engineering from the University of Pittsburgh. He is an Assistant Manager in the Structures Department. Mr. Terhune is a registered professional engineer in Pennsylvania and is a Certified Construction Specifier.

The PA UCC consists of a number of ICC Codes and has undergone a number of changes from the adoption of the 2009 ICC Codes to the recent adoption of a small portion of the 2015 ICC Codes. This presents a confusing bundle of codes for engineers to work with. This presentation will attempt to provide some guidance for working with the codes.

- Overview of the Pennsylvania Uniform Construction Code (UCC)
- Timeline for the changes to the UCC
- Initial Functions of the RAC
- Development of the adoption of the 2009 I Codes
- Subsequent legislative action creating Act 1 of 2011
- Changes to the codes by Act 1
- Proposals for the adoption of the 2012 I Codes
- Actions of the RAC on the proposals
- Proposals for the adoption of the 2015 I Codes
- Actions of the RAC on the proposals
- Code changes adopted by the RAC
- Possible action by L&I and ICC to publish a Pennsylvania Code
- Lawsuit to force adoption of the entire 2015 ICC codes

Rebecca A. Bowman, Esq., P.E.

This course will examine: What is meant by Substantial Completion? When is an occupancy permit not enough? When getting the occupancy permit isn’t in your scope. When the client uses a magnifying glass. How many punch lists does the client get? When the bank won’t release the final draw. Subs that don’t cut the mustard. Default under the contract. Default when there is just a written quote to a spec. Default when there is nothing in writing. How does this affect your bonding? How does this affect your sub’s bonding? How does this affect the client’s release of retention? How does this affect the client’s release of liens? Can you complete? The original engineer is out of the picture. Do you have access to the original analysis? Does your analysis match? How do you document? Getting paid.

Phipps Conservatory Reconstruction

Phipps Conservatory and Botanical Gardens has become a world leader in sustainability. This session will explore the newest projects undertaken by the conservatory in their continuing pursuit for excellence in sustainability. The presentation will concentrate on the Phipps Center for Sustainable Landscapes (CSL), a facility that houses groundbreaking research and K-12 science education programs.

The CSL is the first and only building to attain many of the world’s most ambitious green building certifications. The building has been certified to meet the world’s most demanding green building standard, the Living Building Challenge. The building is certified as LEED Platinum and is tied for the highest points awarded under version 2.2. The building is also the first and only building to meet the pilot requirements of both the WELL Building Platinum Level and the Four Stars Level of the Sustainable SITES Initiative for landscape projects.

The Center for Sustainable Landscapes draws its inspiration from the foliage displayed in the gardens as the building produces all of its own renewable energy and reuses all water captured on-site.
Sessions - Thursday

**1:45 pm – 2:45 pm | 1.0 PDH**

**Expert Witness/Engineering Ethics: The Landslide of Unethical Practice**

Joseph F. Boward, PE, F.NSPE  
Garvin Boward Beitko Engineering, Inc.

This session includes the review of a landslide at a private development that nearly interrupted Interstate Route 70 north of Wheeling, WV. It covers the practice of geotechnical engineering and the complexities resulting from individuals attempting to practice it without appropriate education, experience and knowledge, as well as the potential resulting consequences. Mr. Boward will discuss the forensic geotechnical engineering the case required, the part that the environment played, the part that the responsible engineering firm and owner played, and the resulting consequences. He will also discuss the extensive research required to unravel the case and touch on the arbitration hearings.

Joseph F. Boward, PE, F.NSPE, obtained a BS in Civil Engineering from Purdue University and a MSCE from the University of Pittsburgh. His specialty resides primarily with geotechnical engineering. Mr. Boward is the President, and one of the founders, of Garvin Boward Beitko Engineering, Inc. (GBBE), located in Pittsburgh, PA. GBBE provides geotechnical, forensic, environmental and materials science consulting engineering services.

**1:45 pm – 2:45 pm | 1.0 PDH**

**Building a Sustainable Campus**

Peter Walker, Dean  
Chatham University

What does it mean to be a sustainable campus? Yes it has geothermal heating, water recycling and photovoltaic energy, but it has to be much more than that. The agricultural systems have to be sustainable as does the woodland management. All of these systems have to be integrated into the educational agenda and work together. But the real challenge is to create an educational community that sees sustainability at the heart of its mission.

This workshop will be of interest to all engineers interested in going beyond “green bling” and thinking about how to integrate engineering with education and community development.

Dr. Walker holds a B.Sc. in Environmental Sciences and a Ph.D. in Soil Science from Sheffield University in the United Kingdom. He has over 25 years of field work in humanitarian crises and in addressing some of the most pressing sustainability and climate-change challenges around the world, including the Sudan, Ethiopia, Iran, Pakistan, Somalia and many other countries. An accomplished speaker, author and teacher, Dr. Walker joined Chatham from Tufts University in Massachusetts.

**1:45 pm – 2:45 pm | 1.0 PDH**

**Engineering Lessons to be Learned to Reduce Falls - The #1 Cause of Accidents in Buildings & Sites**

David H. Fleisher, PE  
Fleisher Forensics, Inc.

Falls of people will be the leading cause of premises accidents resulting in injuries and fatalities, if current trend continue, exceeding rates of injuries and fatalities automobile accidents in upcoming years. Presently, falls are the leading cause of accidental death and injury in buildings and on sites. This course will educate Engineers in the current standards and practices to reduce the risk of these types of accidents.

David H. Fleisher, P.E. has evaluated litigation and claim matters involving premises liability, since 1986. He has been qualified to testify as an expert in federal and state courts. David has held leadership roles in ASTM International Committee F13 on Pedestrian/Walkway Safety and Footwear for over 20 years. Presently, he is the Chair of the Walkway Surfaces Subcommittee

David’s professional memberships include the American Society of Civil Engineers, American Society of Safety Engineers, International Code Conference, American Concrete Institute, The Engineers Club of Philadelphia and National Society for Professional Engineers.

**1:45 pm – 2:45 pm | 1.0 PDH**

**Hermitage’s Self Sustaining Wastewater Treatment**

Thomas W. Darby  
Hermitage Municipal Authority

Municipal engineers, civil engineers in wastewater design, sustainability managers, wastewater plant managers, and people involved in the design and implementation of food waste to energy facilities will benefit from this session.

Attendees will take away a better understanding of the process of combining wastewater bio-solids with food wastes especially liquid and semi-viscous food products within the digestion process of a wastewater treatment plant. The end result being the increased methane production for use in a bio-gas generator used for generating power and sending it to the electrical grid.

Before becoming Manager of the Hermitage Municipal Authority in 1985 Tom Darby worked for a consulting engineering firm based in Northwest Pennsylvania for 7 years. In 1988 Tom also became the Superintendent of the Hermitage Water Pollution Control Dept. He is a licensed Class A wastewater plant operator.

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**1:45 pm – 2:45 pm | 1.0 PDH**

**Accidents in Buildings & Sites**

Falls of people will be the leading cause of premises accidents resulting in injuries and fatalities, if current trend continue, exceeding rates of injuries and fatalities automobile accidents in upcoming years. Presently, falls are the leading cause of accidental death and injury in buildings and on sites. This course will educate Engineers in the current standards and practices to reduce the risk of these types of accidents.

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CSX Transportation J&L Tunnel Modification Project
James H. Swadley, P.E.
Michael Baker International

The J&L Tunnel Modification Project presented an exceptional engineering challenge: How could a design-build team cost-effectively increase vertical clearance in a heavily used, 1880s-era railroad tunnel, located beneath a busy urban commercial, retail, and residential development, while maintaining rail operations and the structural stability of the tunnel’s dry-stacked, masonry stone gravity walls during construction?

In partnership with CSX Transportation Inc. (CSX), the Michael Baker Jr., Inc.-Mascaro Construction Company, LP (Baker-Mascaro) design-build team devised and implemented a unique, “out-of-the-box” solution that safely and efficiently resolved these complex issues.

Jim Swadley is a Senior Project Manager in the surface transportation group of Michael Baker International and is located in their Moon Township, PA office. Jim has held various positions of increasing responsibility over the past 35 years with Baker, including project management of large and complex design projects as well as construction management assignments. He holds a BS degree in Civil Engineering and is a registered professional engineer. Jim is a member of PSPE and AREMA.

Solar Generation – From Concept to Interconnect
Dean W. Musser, P.E.
Tangent Energy Solutions Inc.

Development of a solar project has many hurdles that are often not within the scope or purview of the engineer. The objective of the discussion will be to provide the owner representative, consulting engineer or facility engineer a developer’s perspective regarding implementation of a solar project. The presentation will address the development of a solar project from concept to interconnect. The Beaver, PA, 1.3MW project will be used as a case study.

Prior to founding Tangent, Dean was COO of Comverge C&I Group, a demand response, advanced metering and grid-management solutions company. He founded and was President and CEO of Enerwise Global Technologies which he transformed into the largest demand response provider in PJM before selling to Comverge, one of the country’s largest demand response companies.

Lean Six Sigma - An Engineering Perspective
Mark J. Marsico, P.E., PMP
Thermo Fisher Scientific

Mark is currently the Director of Quality Assurance for Thermo Fisher Scientific in Pittsburgh Pennsylvania. He is the United States quality leader for the Customer Channels Group, a global distributor of scientific equipment and medical devices with annual sales of more than $4 billion. He manages the QA team and all aspects of product quality, ensuring regulatory compliance, communicating with FDA and leading process improvement projects that increase productivity and improve the customer experience. Mark is responsible for key quality value streams including, customer complaints, recalls, CAPA, internal audit and supplier management.

How to Easily Automate Your Job Site Monitoring Using Drones
Dick Zhang
Identified Technologies

Today’s robotic revolution is changing the way we work, just as dramatically as the industrial revolution did. Automation technology is enabling innovative companies to work dramatically faster, smarter, safer and more efficiently. By 2020, operating a construction or energy job site without robotics will be as unthinkable as making a building without using power equipment. Learn the basics of drone operations and applications, and how they are ushering in a new era of efficiency on job sites for you and your business.

As Identified Technologies’ CEO Dick leads the rapidly growing company’s mission to deliver big insights for big jobs. Identified Technologies uses self-piloting drones to automatically, safely, and scalably provide continuous site monitoring to blue chip construction and energy companies around the world. Dick’s experience includes corporate strategy at Goldman Sachs and project management at Bristol-Myers Squibb. A technologist as well as entrepreneur, Dick is an alumnus of the University of Pennsylvania with training in Mechanical Engineering and several U.S. patents.
4:15 pm - 5:15 pm | 1.0 PDH
Veteran’s Memorial Bridge, Fallston, Beaver County
Aaron Pickering, P.E.
Michael Baker International

The Veterans Memorial Bridge spanning the Beaver River, midway between the Fallston and Bridgewater-Rochester bridges, is a new three-span, 600-foot-long bridge that connects S.R. 51 in Bridgewater, to S.R. 18/S.R. 65 in Rochester, at the intersection with Sharon Road.

The steel multi-girder bridge features three 12-foot-wide traffic lanes, eight-foot wide shoulders, and a 10-foot-wide sidewalk for bicycles and pedestrians.

This course will provide insight on the challenges in constructing the bridge, the various types of construction methods as well as coordination with Norfolk Southern Railroad.

Aaron Pickering is a Project Manager with Michael Baker International and works in the Construction Services - Pittsburgh Region. He has been with Baker for over 14 years, is a licensed professional engineer. He served as the Construction Engineer for the Veterans Memorial Bridge project and provides construction management services on many other complex projects within the region.

4:15 pm - 5:15 pm | 1.0 PDH
TechShop - Accessing the Tools of Innovation
Les Gies

TechShop is a playground for creativity where engineers can turn their ideas into reality by making a prototype that can be shared with fellow engineers and technicians. Part fabrication and prototyping studio, part hackerspace and part learning center, TechShop provides access to over $1 million worth of professional equipment and software.

Each facility includes laser cutters, plastics and electronics labs, a machine shop, a wood shop, a metal working shop, a textiles department, welding stations and a waterjet cutter. Sample projects will be discussed to give the engineer ideas on how to turn ideas into reality as a full time engineer or as a part time inventor!

Les Gies is the Senior Account Manager at TechShop Pittsburgh. A graduate of the University of Pittsburgh, Les holds a Bachelor’s Degree in Industrial Engineering from the Swanson School. In his management role, Les connects local businesses, institutions, and various groups to membership access to the tools, skilled training, and the vibrant community of TechShop. He proudly supports every aspect of the company’s mission to democratize the tools of innovation.

4:15 pm - 5:15 pm | 1.0 PDH
Building Commissioning and RetroCommissioning
John Dombrowski, P.E., CPMP, CCP, HFDP
Mazzetti, Inc.

This session will review why commissioning is needed and the proper process for commissioning new construction projects. Why the commissioning authority should be brought in early in the project as opposed to when the project is going out to bid and how to get the most advantage out of the process. For those who have existing buildings, the RetroCommissioning process will also be described along with examples of the benefits.

Who should attend?
• Building Owners
• Design Engineers
• Contractors

John is an Associate Principal with Mazzetti, Inc. Mazzetti is a National Engineering and Commissioning firm with 10 offices in 7 States and additional personnel in remote offices. John has over 32 years’ experience in designing and commissioning Healthcare, Higher Education and other facilities. He has served on the AIA/FGI Guidelines for the Design and Construction of Healthcare Facilities committee since 1993 including serving as Chair of the Commissioning Subcommittee and on the ASHRAE Standard 170 Ventilation for Healthcare Facilities Committee since 2008.

4:15 pm - 5:15 pm | 1.0 PDH
Specifying LED Lighting – The Challenges
James M. Yorgey, P.E., LC, CTS
Lutron Electronics Co., Inc.

This is a discussion of the rapid evolution of the use of LED’s for lighting. As with any new technology, there are challenges that require consideration to ensure proper implementation. We will review the various issues and how they are being addressed. An important focus is on the proper methods of dimming and controlling LED lighting. Also presented are recommendations for specifying LED lighting and controls to ensure compatibility and successful installations.

This presentation is intended for Electrical Engineers involved in the design of commercial and residential buildings. It is an informative session that would also be of general interest to anyone following the shift to LED lighting from incandescent and fluorescent lighting.

Jim Yorgey joined Lutron Electronics Co., Inc., in 1974 and has held numerous positions in quality control, engineering, marketing, and technical sales departments.

Jim’s current role as a System Sales Engineer, supports the sales groups in the mid-atlantic region and technical support for specifiers and consultants in the integration of lighting, lighting controls, and window treatments.
Pennsylvania Turnpike/I-95 Interchange Project – Update
Mark F. Raup, P.E., Pennsylvania Turnpike Commission

Two pieces of legislation established the need for a direct I-276/I-95 Interchange connection: The first was the 1982 Federal Surface Transportation Assistance Act (STAA), which specified that I-95 be rerouted onto I-276 across the Delaware River Turnpike Bridge, where it would join the New Jersey Turnpike Extension, and ultimately I-95/NJ Turnpike. The second was the 1985 Pennsylvania Act 61, which authorized the PTC to build an interchange between I-95 and I-276 and widen I-276 to six lanes between the Route 1 Interchange and the Delaware River.

Federal environmental studies were initiated for the project in the 1990's, and a Final EIS was completed in June 2003, while the Record of Decision was issued in December 2003. The elements of the selected alternative that permit the completion of Interstate 95 and it's re-designation in PA and NJ have moved forward into the design and construction phases.

Mark F. Raup is a Senior Engineer Project Manager within the Pennsylvania Turnpike Commission's Engineering Department. He has over 19 years of experience with the Commission and 25 years in the Engineering Design and Construction Management fields.

Minimizing Corrosion in Fire Protection Piping
John E. Kampmeyer, P.E., F.NSPE, FASHRAE

In recent years, there has been increased concern about corrosion in fire protection piping. Why is pipe which has been in service for upwards of 100 years showing little signs of corrosion while recently installed systems are failing due to corrosion?
• Historical corrosion concerns
• NFPA 25 treatment of corrosion prevention
• Observations in older sprinkler systems
• Observations in newer sprinkler systems
• Pipe materials used in sprinkler systems
• Issues on pipe materials
• Issues on wall thickness
• Issues on microbiological influenced corrosion
• Steps being taken to reduce corrosion problems in sprinkler systems.

Forensic Project Management I
Robert C. McCue, P.E., MDCSystems®

This course will explore the field of Forensic Project Management issues that arise on typical engineering and construction projects in today's complex world.

Case studies will be used as examples of the problems encountered on projects in both the United States and Internationally. Common causes of project failures and their symptoms will be illustrated using the case study examples.

Participant discussion and comment will be encouraged so that an interactive and lively discussion of current issues and concerns can be accommodated. Systems Thinking and Complexity concepts will be integrated into the presentation to enable participants to utilize new perspectives to recognize, evaluate and overcome the many challenges posed by the project execution and delivery approaches used today.

Bob McCue has been investigating and resolving Forensic Project Management challenges since joining MDC Systems in 1987. The presentation of the material is based upon his personal experience with projects and the academics who have researched and developed the concepts of Systems Thinking and Complexity.

Don Green, P.E., Michael Baker International

The Port Authority of NY & NJ (PANYNJ) continues to enhance flood resiliency at the World Trade Center to protect the public transportation system. The criticality of flood resiliency at the World Trade Center was reinforced when Hurricane Sandy inundated coastal areas along the Atlantic northeastern US coastline. Site constraints required a deployable flood wall system to protect against 8 feet of flood water inundation. In-depth full-scale load tests were implemented as part of the design process at a nationally-recognized hydraulics laboratory. Details are presented about the development, implementation and results of the full-scale load test program.

Don Green is a Geotechnical Specialist with Michael Baker International with over 37 years of experience as a Consulting Engineer. He is an in-house technical consultant, who is routinely engaged in complex foundation design. He is an NHI Certified Instructor for FHWA, and a CLOMR/LOMR technical reviewer for both coastal and riverine structures on behalf of FEMA.
PA Route 28, East Ohio Street Improvements – Project Completion
Greg Cerminara, P.E., PTOE
Michael Baker International

PA Route 28 (East Ohio Street) between Millvale and Chestnut Street in Pittsburgh has been a valuable asset for travelers in the Pittsburgh community since the early 1800s. Now, through the combination of five construction contracts, the much needed capacity, safety and geometric improvements have been provided.

The design of a tight single point urban interchange at 31st Street and construction of a Florida-T interchange at 40th Street were incorporated. Additional permanent major features of the project consist of the construction of five bridge structures; 12,000 feet of retaining walls; 10,000 feet of relocated water lines and a gas transmission line; and 4,600 feet of relocated Norfolk Southern Railroad lines (two tracks).

Greg Cerminara is a Vice President with Michael Baker International and serves as the Pittsburgh Transportation Principal. He has been with Baker for over 26 years, is a licensed professional engineer and certified professional traffic operations engineer. He has served as the project manager for PA Route 28, East Ohio Street Improvement project and many other complex projects within the region.

Forensic Project Management II
Robert C. McCue, P.E.
MDCSystems®

Continued from 8:30 session.

The Smart Grid – What Is It?
Joseph Koepfinger

The smart grid is terminology that has become a buzzword of the 21st century. It has many meanings and it is not just limited to the generation, transmission, distribution and utilization of electrical energy. The initial concept of the smart grid has existed for over 40 years in the control management of electrical energy. There are several new drivers behind the concept of the “smart grid” terminology. Industry and society today are seeking more control over the products and services they need to sustain their lifestyle or operations.

Mr. Koepfinger is a registered professional engineer in Pennsylvania. He was employed by Duquesne Light Co. for 51 years in various engineering and management positions. In those positions, he was instrumental in developing one of the world’s first automated high-voltage distribution systems, two energy management control centers, and an emergency response center for a nuclear facility and an associated warning system using an automatic meter reading (AMR) system supplemented by conventional siren. He is a Life Fellow of the Institute of Electrical and Electronic Engineers (IEEE), Member Emeritus of the IEEE-SA Standards Board and a Life Member of the American National Standards Institute.
Buckled Piling at I-43 Leo Frigo Memorial Bridge

Don Green, P.E.
Michael Baker International

A foundation retrofit was completed for WisDOT to reopen the 32+ year old I-43 Leo Frigo Memorial Bridge, 102 days after 2 feet of abrupt settlement at Pier 22. A multi-faceted forensic investigation was completed to evaluate mechanisms that led to section loss and subsequent crushing/buckling of existing driven HP14x73 pile foundations. The forensic study revealed a combination of industrial fly ash fill, fluctuating ground water, high levels of sulfates and chlorides, and microbial activity as all contributing to severe deterioration of steel pile foundations due to Accelerated Low Water Corrosion. Lessons learned at the I-43 Leo Frigo Memorial Bridge have contributed significantly to the engineering community’s understanding of risks associated with bridges in similar subsurface conditions.

Don Green is a Geotechnical Specialist with over 37 years of experience as a Consulting Engineer. He has been with Michael Baker International for the past 9 years. He is an in-house technical consultant, who is routinely engaged in complex foundation design. He is an NHI Certified Instructor responsible for teaching LRFD substructure design for FHWA.

Ethics Case Study: Johnstown’s Flood

Eric W. Tappert, PE

This course will enable attendees to identify the causes of the collapse of the South Fork Dam and resultant destruction of Johnstown, PA; identify the engineering ethical shortfalls of the responsible individuals; and relate the ethical shortfalls to the NSPE code of ethics. A history of the causes of the South Fork Dam failure and the destruction of Johnstown, PA on May 31, 1889 with an emphasis on the ethical lapses that led to the dam failure will be examined.

Eric Tappert received the B.S. degree in electrical engineering from the Moore School of the University of Pennsylvania and the MS degree in telecommunications from the University of Colorado. He retired in 2001 from the former Bell System companies. Since retirement he has served as a part-time faculty member for Penn State University Berks campus, teaching a variety of courses in the engineering department. He is a professional engineer in both Pennsylvania and New Jersey and a life member of NSPE.

EXCELent Engineering Worksheets: Advanced Tips & Tricks

Peter Staffeld, PhD, PE, F.NSPE
Villanova University

Excel worksheets are often created to streamline engineering calculations. This session will briefly cover naming cells and using the Conditional Formatting features. During the remainder of the presentation participants can then choose from the following topics of interest: data validation; Excel intrinsic functions; input & output ranges; protecting your work; editing techniques on the worksheet; table format; sorting & filtering tables; scatter plots; and/or developing an equation from a scanned chart. Participants are encouraged to bring their laptops and try each concept as it is discussed.

Dr. Staffeld has over 25 years of industrial engineering experience and is currently Visiting Assistant Professor at Villanova University where he teaches courses in technology, design, economics, and technical communications. Prior to teaching and consulting he worked for Mobil Oil Corporation where one of his jobs was using Excel to perform economic evaluations on dozens of proposed engineering projects. Dr. Staffeld is also an engineering and economics consultant for industry.

3D Printing/Additive Manufacturing - Current and Future Applications

Howard A. Kuhn PhD
The ExOne Company

Additive manufacturing (AM) offers opportunities for innovation in many economic segments because of its ability to produce complex shapes and integrated materials beyond the capabilities of conventional processes. This presentation will describe the basic AM processes, their range of materials, and expanded design flexibility. Current applications and future trends will be described in three fields of use: aerospace, biomedical, and tooling for conventional processes.

This course is directed to engineers and engineering managers, particularly those involved in new product development. Attendees will be able to discuss the basic concepts of various AM processes, their extreme design flexibility, and examples of applications.

Dr. Kuhn is Adjunct Professor in the Swanson School of Engineering at the University of Pittsburgh where he teaches courses in manufacturing, product realization and engineering entrepreneurship, and supports research in manufacturing of biomedical devices for tissue engineering. He is also a Technical Advisor for the National Additive Manufacturing Innovation Institute in Youngstown, OH.
This is a session of benefit to anyone who wants to learn about an innovative concept in interchange design referred to as the Diverging Diamond Interchange (DDI). The I-70/SR 0019 interchange in South Strabane Township, Washington County is proposed to be the first DDI in the Commonwealth of Pennsylvania. Information will be presented on how they operate, and lessons learned from other diverging diamond interchanges in the United States.

Barry Lyons, PE – Senior Project Manager for the Pennsylvania Department of Transportation, District 12-0 in Uniontown Pennsylvania. Barry has been employed with PennDOT for almost 30 years including the last 9 years in his current position. He has held various positions with the Department in the Traffic Unit as both Assistant District Traffic Engineer in charge of traffic signals and District Traffic Engineer, and as the Field Liaison Engineer with the Bureau of Project Delivery.

Anchoring & Restraint of Rooftop Equipment in High Wind Areas AND Vibration Isolation of Mechanical Systems
James R. Tauby, P.E.
Mason Ind. Inc.

This lecture covers the correct way to restrain rooftop mounted equipment. Topics include determining the wind force on the equipment and deciding whether the wind or seismic force governs. Typical details from the ASHRAE Manual "A Practical Guide to Seismic Restraint" for restraining of rooftop air handling units, cooling towers, condensers and rooftop fans will be discussed. Vibration Isolation of mechanical systems including rubber and spring isolators will be discussed and details for proper installation will be shown.

Mr. Tauby is Chief Executive Engineer for Mason Ind. Inc., a worldwide leader in the field of noise and vibration control products, as well as seismic and wind restraint systems. He is a professional engineer in over 45 states, the District of Columbia and New Zealand. He holds a Bachelors of Science in Mechanical Engineering from the University of Alabama. He regularly lectures around the world on topics ranging from vibration isolation, seismic and wind restraint of mechanical systems to the use of elastomeric expansion joints for piping in seismic applications.

Economic Metrics for Engineering Projects
Peter Staffeld, PhD, PE, F.NSPE, Villanova University

Engineers need a basic understanding of economic concepts to properly evaluate potential solutions for an engineering problem. This seminar will compare and contrast the four most common metrics used for evaluating engineering projects: Net Present Value (NPV), Internal Rate of Return (IRR), Benefit-to-Cost Ratio (BCR), and Payback Period (PP). The advantages and disadvantages of each of these metrics will be discussed and demonstrated using a sample project.

Dr. Staffeld has over 25 years of industrial engineering experience, and is currently Visiting Assistant Professor at Villanova University where he teaches courses in technology, design, economics, and technical communications. Prior to teaching and consulting he worked for Mobil Oil Corporation where one of his jobs was using Excel to perform economic evaluations on dozens of proposed engineering projects. Dr. Staffeld is also an engineering and economics consultant for industry.

Planning for the Future: Understanding BIM and the Emerging Technologies for Collaboration and Efficiency
Peter Marchese
Microdesk

Over the last several years, BIM methodology has taken hold and progressed from being something a few firms were doing to something starting to be mandated. But what does BIM really mean, and how can it and the other new technologies be used to enhance project collaboration, efficiency and success? The session will go over what the BIM process is, explaining what it means, not just for the design and construction teams, but how it and other new technologies like mobile and augmented/virtual reality can be used to generate new opportunities.

Peter is a Senior Consultant at Microdesk, specializing in assisting organizations implement Building Information Modeling processes. This includes providing on-site assistance, custom content, training and creating goals and roadmaps to integrate technology and workflows into long-term plans. Peter has assisted companies to understand and apply new technologies like UAV’s and Augmented and Virtual Reality with the goal of enhancing coordination and visibility with tools such as cloud-based services.
Seismic Restraint
James R. Tauby, P.E.
Mason Ind. Inc

This lecture covers how mechanical systems are seismically braced. This includes piping, ductwork, suspend equipment and floor supported equipment. Other topics are housekeeping pads, building codes, anchorage and specifications. Typical details from the ASHRAE Manual "A Practical Guide to Seismic Restraint" will be discussed." After this session, attendees will be able to:
• Describe Pipe & Duct Bracing
• Distinguish between a seismically rated housekeeping pad and a standard pad
• Describe how the Seismic Restraint Systems effects the Safety of the Occupants of the Structure during a Seismic Event
• Distinguish between a Seismically Restrained System and a Non-Seismically Restrained System as far as Containment of Conditioned Air and Water.

Mr. Tauby is Chief Executive Engineer for Mason Ind. Inc., a worldwide leader in the field of noise and vibration control products, as well as seismic and wind restraint systems. He is a professional engineer in over 45 states, the District of Columbia and New Zealand. He holds a Bachelors of Science in Mechanical Engineering from the University of Alabama.

Powering the Telephone I
Eric W. Tappert, PE

This seminar looks at the historical development of telephone technology with particular emphasis on the power system. Advances such as cellular telephony, central office automated switching, fiber optics, and distributed switching architectures all have implications on the power system and are discussed in detail. Regulatory requirements are also addressed.

This course will:
• Review the operation of a telephone set and the related power requirements
• Review the historical development of the modern telephone with respect to the power supply system
• Look at the impact of modern radio based telephony on the power arrangement
• Look to the future of fiber optics to the home and the implications on power arrangements

Eric Tappert received the B.S. degree in electrical engineering from the Moore School of the University of Pennsylvania and the MS degree in telecommunications from the University of Colorado. He retired in 2001 from the former Bell System companies. Since retirement he has served as a part-time faculty member for Penn State University Berks campus, teaching a variety of courses in the engineering department.

Rail Welds – Failure Analysis and Testing
Brett Pond, PhD, PE
TUV Rheinland Industrial Solutions, Inc.

Derailments caused by broken rail welds cost the railroad industry millions of dollars per year. Consequently, efforts to understand these rail weld failures and prevent their occurrence are paramount. This presentation will include a discussion of the various methods of welding rail with an emphasis on methods employed most commonly in the USA. Common defects and modes of failure are discussed as well as methods to determine root cause of failure. Additionally, important properties of rail are reviewed along with the tests performed to determine these properties.

Brett Pond has been performing metallurgical testing and failure analysis of rails, rail welds, and other railroad components for 9 years. His rail experience includes derailment investigation, rail car inspections, track/rail inspections, failure analysis, metallurgical testing, dynamic simulation, and finite element analysis. He is currently Principal Metallurgist for TUV Rheinland Industrial Solutions, Inc. and heads their metallurgical laboratory in Pittsburgh, PA. He holds a PhD in Mechanical Engineering and is a registered professional engineer in multiple states.
Design and Construction of Main Span Foundations for Kentucky Lake Bridge  
Scott D. Zang, PE  

This session will discuss techniques used and lessons learned during design and construction of constricted pipe pile foundations for the main span of the new Kentucky Lake Bridge. Attendees will recognize the hurdles that were overcome to design the foundations for the main span of Kentucky Lake Bridge; recognize conditions that led to selection of the foundation type and location for the Kentucky Lake Bridge; and be able to state the primary lessons learned during design and construction of the Kentucky Lake Bridge.  

Scott Zang is a geotechnical engineer with over 30 years of experience in geotechnical design. His professional experience encompasses reconnaissance, field testing, laboratory testing, project analysis and design, report preparation and construction inspection for bridges, roadways, railroads, earth dams, buildings, hazardous waste studies, industrial facilities, airports and coal mines.

Tower Designs, Structural Upgrades and Maintenance using ANSI/TIA-222-G  
Brian Reese, PE  
Reese Tower Services  

This session introduces attendees to ANSI/TIA-222, revision G, “Structural Standard for Antenna Supporting Structures and Antennas,” the design standard for communication structures and antennas. With explosive demand for wireless technology in the last twenty years, use of communications towers has exploded. ANSI/TIA-222, revision G, “Structural Standard for Antenna Supporting Structures and Antennas,” governs design and analysis of communication structures and antennas. From self-supporting to guyed towers, and monopoles to disguised structures, the Standard provides recognized literature for antenna supporting structures and antennas pertaining to minimum load requirements and design criteria.  

Brian Reese, President of Reese Tower Services, has 18 years of experience in the tower industry in various roles - engineering, inspection, manufacturing, sales, and upper management. Reese has extensive experience with tubular steel pole structures involving engineering, manufacturing, field modification, and inspections with an emphasis on welding inspections and condition assessments.

Powering the Telephone II  
Eric W. Tappert, PE  
Continued from 2:30 session
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