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ARTBA

The 28th Annual **International Bridge Conference**



**IBC 2011: June 5-8, 2011
David L. Lawrence Convention Center
Pittsburgh, PA USA**

**Learn everything you need to know about the IBC at
www.internationalbridgeconference.org**

International Bridge Conference
c/o The Engineers' Society of Western Pennsylvania
Pittsburgh Engineers' Building
337 Fourth Avenue
Pittsburgh, PA 15222

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Registration

Full Registration includes admission to the Keynote Session, Featured Agency Session, daily Technical Sessions, Workshops, IBC Exhibit Hall, Exhibitors Party, and the Monday and Wednesday Exhibit Hall Buffet Luncheon. One-Day Registration includes the Technical Sessions, Special Interest Sessions, IBC Exhibit Hall and corresponding exhibit function for that day only.

With so many new events included in the IBC, we hope to provide you with a better understanding of the various offerings for Conference attendees. You will still see the quality technical presentations as offered in all previous IBC's; these are referred to as "Technical Sessions", and include Papers grouped into sessions of common subject matter. Again, we are offering several "Seminars" that are educational programs for continued training. We also offer for your consideration a number of "Workshops" presented by many of our co-sponsors, and other industry-leading groups on an even wider variety of bridge industry subject matter. Lastly, many of these same groups have coordinated their "Committee Meetings" during the dates of IBC; some of which are open to all conference registrants.

Seminars, Tours and Conference Proceedings require an additional registration fee. Please see the Registration Form.

You can register by using the Registration Form on Page 8. Your registration, along with payment, must be received by the Engineers' Society of Western Pennsylvania by Friday, May 27, 2011; following that date you must register on-site. On-line registration is also available at www.eswp.com/bridge

All refund requests must be received in writing. No refunds after June 1. If you don't cancel and don't attend, you will be charged the full registration fee.

Accommodations

Enjoy the luxury and convenience of the IBC Headquarters Hotel, the Westin Convention Center Hotel. The Westin is Pittsburgh's newest and most elegant hotel. Linked to the David L. Lawrence Convention Center via skybridge, or by an easy outdoor walk across Penn Avenue, the Westin is conveniently located to the IBC Headquarters. A special block of rooms has been reserved at the Westin Convention Center Hotel with a rate of \$175 plus applicable taxes. Hotel reservations can be made by contacting the Westin Convention Center Hotel directly at 412-281-3700. On-line reservations can be made at <http://www.starwoodmeeting.com/StarGroupsWeb/booking/reservation?id=0812092550&key=755C2>

After May 1, 2011 reservations will be accepted on a "space available" basis and the special Conference rate of \$175 (plus taxes) may not apply. For additional assistance, please contact the IBC offices. The Westin Hotel invites their guests to enjoy the complimentary use of their hotel shuttle that will take you to any destination within a 2 mile radius of the hotel.

Flying

Travelers arriving by plane can enjoy the first-class service and impeccable facilities of the Pittsburgh International Airport, voted Best U.S. Airport by Conde Nast Traveler, located approximately 18 miles from downtown. Shuttle service can be arranged at the Transportation Services Desk near the baggage claim area and operates from 7 am to 11:40 pm daily with departures every 30 minutes. The cost is \$19 one-way and \$36 round-trip per adult. Rental cars and limousines are available. Taxi service can be obtained by calling Yellow Cab at 412-321-8100. More information is available at www.flypittsburgh.com.

Airport Flyer 28X

For \$2.75 each way (exact change required) the Port Authority provides public transportation daily from 5:30 am to 12:00 am from the airport to downtown Pittsburgh and departs every 20 minutes. The 28X can be boarded at the Lower Level Ground

Transportation bus stop (near baggage claim at Door #6.) For additional information please call 412-442-2000 or visit their web site www.portauthority.org.

Driving

For attendees driving to Pittsburgh, directions are available at the Convention Center web site: <http://www.pittsburghcc.com/cc/Directions/Default.aspx>

Parking

The Westin Convention Center Hotel does have its own parking facility, and valet parking is available for an additional cost of \$22 per day. Simply pull up to the front door of the hotel to utilize this service. Parking at the David L. Lawrence Convention Center is also available. Self parking lots are in the immediate vicinity. Maps are available on line at <http://www.pittsburghcc.com/cc/Directions/Parking.aspx>

Special Needs

The International Bridge Conference® and ESWP support the Americans with Disabilities Act (ADA), which prohibits discrimination against, and promotes public accessibility for those with disabilities. We ask those requiring specific equipment or services as an attendee to contact the ESWP Conference Department at 412-261-0710, extension 11 and advise us of any such requirements in advance.

PITTSBURGH — The City of Bridges

Located at the confluence of three sparkling rivers and banked on all sides by green hills, Pittsburgh has earned its reputation as one of America's "most livable" cities. Long a center for the production of steel, iron and glass, Pittsburgh's economy is now driven by technology, medicine, finance and tourism.

Nights come alive in the Cultural District, home to five theaters within walking distance of hotels and the convention center. The Cultural District also affords a selection of up-scale and mid-range dining, from French to Italian, Tex Mex to Thai.

In the Strip District, the clubs are hot, the food is spicy, and dance floors pulse to the sounds of rock, blues, jazz and swing. Award-winning brew pubs serve up the finest lagers and ales, while classic Pittsburgh fare is featured at nearby diners. By day, the Strip is alive with street vendors and shoppers buying the freshest breads, pastries, cheeses, coffees and ethnic specialties.

Just across the river on Pittsburgh's North Shore, you'll find PNC Park, the home of the Pittsburgh Pirates. This 38,000 seat classic baseball stadium has been called "the perfect blend of location, history, design, comfort and baseball" by ESPN. Single game tickets are available at www.pittsburghpirates.com, or by calling 1-800-Buy-BUCS.

Also, located on the North Shore is one of Pittsburgh's newest attractions, the Rivers Casino. Enjoy a fun evening out with great restaurants, bars and plenty of slot machines and live entertainment.

Questions?

Please direct any questions to Ms. Cori Stellfox at the International Bridge Conference®, c/o Engineers' Society of Western Pennsylvania, 337 Fourth Avenue, Pittsburgh, Pennsylvania 15222, USA. Phone: 412-261-0710, Fax: 412-261-1606 or e-mail: c.stellfox@eswp.com.

Monday June 6 - Morning Sessions

Keynote Session

- "The Future of High Speed Rail in North America" - Al Engel, Vice-President of Amtrak
- "America's Infrastructure Report Card" - Andrew Herrmann, P.E., ASCE President, Washington, DC
- "50 Years of Bridge Building" - Bob Luffy, former CEO, American Bridge, Pittsburgh, PA
- "AASHTO/FHWA Update" Malcolm T. Kerley, P.E., AASHTO, Richmond, VA and M. Myint Lwin, P.E., S.E., Director, Office of Bridge Technology (HIBT), Federal Highway Administration, Washington, DC
- "Korean Bridge Program"

Monday June 6 - Afternoon Sessions

Featured Country Session

Learn about the bridge program of our 2011 Featured Country "South Korea." Officials from South Korea will present during the Monday afternoon session. Details available on our website.

Proprietary Session

Session Chair: Rachel Stiffler, Vector Corrosion Technologies, McMurray, PA,

- IBC 11-1: A New Orthotropic Steel Bridge Deck for Multiple Longitudinal Girder Bridges - Richard Vincent, Canam Group Inc. (Structural Bridge Division), Boucherville, QC, Canada
- IBC 11-2: Non-Destructive Evaluation Of Bridge Cables And Strands Using The Magnetic Main Flux Method (MMFM) - Masamichi Sugahara, Tokyo Rope MFG. CO., LTD, Chuo-ku, Tokyo, Japan
- IBC 11-3: Road Development Agency (RDA) in Zambia, Africa Bridge Inventory Program - Jeremy Shaffer, Ph.D. and Mike Schellhase, InspectTech, Pittsburgh, PA

Workshops & Seminars

- W-1: Your Vision...Your Reality/Innovative Financing & the Project Team - Shawna Bartkus, H.W. Lochner, Inc., Rocky Hill, CT
- W-2: FRP Composites Hybrid Systems Advancing Sustainable Solutions for Bridges, John Busel, ACMA, Tuckahoe, NY
- Owners Forum: Hear from Bridge Owners About Their Upcoming Projects
- Co-Meeting: AREMA Committee 15

Tuesday, June 7 - Morning Sessions

Rehabilitation Session

Session Chair: Lisle Williams, P.E., PLS, Consultant, Coraopolis, PA

- IBC 11-4: Extending the Life of the I-80 Bridge over the Mississippi River - David Petermeier, P.E., S.E., Modjeski and Masters, Inc., Edwardsville, IL; John Kulicki, Ph.D., P.E., S.E., Thomas Murphy, Ph.D., P.E., S.E., David Barrett, P.E., Philip Ritchie, Ph.D., P.E., Scott Eshenaur, P.E., Modjeski and Masters, Inc., Mechanicsburg, PA
- IBC 11-5: Replacement & Relocation of Keller's Covered Bridge - David Hoglund and Daniel A. Rogers, P.E., RETTEW Associates, Inc., Lancaster, PA
- IBC 11-6: The Next 100 Years: Cost Effective Design and Rehabilitation Of Masonry Arch Bridges - Michael Cuddy, P.E., TranSystems, Langhorne, PA; Henry Berman, P.E. and Peter Berg, PennDOT Engineering District 6-0, King of Prussia, PA; Narayana Velaga, P.E., HNTB Corporation, Philadelphia, PA
- IBC 11-7: Rehabilitation of the Jacks Run Arch Bridge - Gary L. Gardner, Jr., P.E. and Daniel W. Wills, P.E., ms consultants, inc., Coraopolis, PA; Michael J. Dillon, P.E., Allegheny County Dept. of Public Works, Pittsburgh, PA

- IBC 11-8: Investigations and Countermeasures of Typhoon-Induced Multi-Hazard on Impacting on Highway & Bridges - Helsen Wang, The Institute of Bridge Engineering, China Engineering Consultants, Inc., Taipei, Taiwan; Chung-Yue Wang, Ph.D.
- IBC 11-9: Rehabilitation of Northbound 14th Street Bridge over the Potomac River in Washington DC - Wagdy Wassef, P.E., Ph.D., Modjeski and Masters, Inc., Mechanicsburg, PA; Nick Theofanis, Dan Irwin and Martin Smith, Modjeski and Masters, Inc., Harrisburg, PA, Konjit Eskender, District of Columbia Department of Transportation

Long Span Bridges, Part 1 Session

Session Chair: Richard Connors, P.E., Bureau Veritas NA, Pittsburgh, PA

- IBC 11-10: Design and Construction of Three Extradosed bridges in La Paz (Bolivia) - Juan A. Sobrino, Ph.D., PEDELTA, Pittsburgh, PA
- IBC 11-IBC 11: Tied Arch Bridge with Twin, Free-Standing Steel Ribs over Mississippi River, Hastings, MN - Vincent Gastoni, P.E., Martin Furrer, Greg Hasbrouck and Shaoyun Sun, Parsons, Chicago, IL
- IBC 11-12: The Practice of Three Bundles Cable-Stayed Bridge with Double Compositated Warren Truss Girder - Chang Kyu Park, Ph.D., In-Ho Jang, Ph.D., Jun-Soo Ha, P.E., Geun-Young Kim, P.E. and Kwan-Woo Park, P.E., Hyundai Engineering & Construction Co., Ltd., Jongno-Gu, Seoul, Korea;
- IBC 11-13: Wando Bridge in Korea - Fabrication and Construction - Won-Jin Yu, Ph.D., Samsung C&T Corp., Chunnam, Korea; Chang-Ho Chun, Hyun-Seok Choi, Jae-Beom Shim (same)
- IBC 11-14: A Bridge in Harmony with Nature - US 191 Colorado River Bridge in Moab, Utah - Steve Fultz, P.E., S.E., FIGG Bridge Engineers, Inc., Denver, CO; Fred Doehring, P.E., Utah Department of Transportation, Salt Lake City, UT
- IBC 11-15: Detailed Design and Construction of Ulsan Harbor Suspension Bridge with 1,150m Main Span - Jung-Han Lee, Ph.D, P.E., Kyung-Ho Park, Ph.D, P.E., Jong-Hwa Park, Ph.D, P.E., Eu-Kyeong Cho, Ph.D, P.E., Yung-Mook Na, Ph.D, P.E., Hyundai Engineering & Construction Co., Ltd., Jongno-Gu, Seoul, Korea,
- IBC 11-16: R&D for the Construction of Long Span Bridges - Kyoung-Jae Lee, Ph.D., Inho Hwang, Ph.D. Jae-Hong Kim, P.E., Un Il Baek, P.E., Daelim, Seoul, South Korea

Design & Construction of Drilled Foundations for Bridges Session

Session Chair: W. Jay Rohleder, Jr., P.E., S.E., FIGG, West Chester, PA

- IBC 11-17: Using CMCs as a Culvert Foundation: A Case Study - Daniel Martt, P.G. and Sebastian Lobo-Guerrero, P.E., Ph.D, A.G.E.S., Inc., Canonsburg, PA
- IBC 11-18: High Capacity Micropiles to Support a 2,900-ft Span Bridge near Caracas, Venezuela - Jesus Gomez, Ph.D., P.E., D.GE. and Carlos Englert, P.E., Schnabel Engineering, West Chester, PA
- IBC 11-19: Design and Construction of Drilled Shafts for Pittsburgh's North Shore Connector - Daniel Uranowski, Brayman Construction Corp., Saxonburg, PA; Daniel P. Messmer, P.E., D'appolonia Engineering Division of Ground Technology, Inc.
- IBC 11-20: Design and Construction of Large Diameter Drilled Shafts in Soil with Self Consolidating Concrete (Mullica River Bridge Project) - Charles Huynh, Case Foundation Company, Broomall, PA; Matt Lunemann, P.E., Parsons Brinckerhoff, Inc.; Kwang S. Ro, Ph.D., P.E.
- IBC 11-21: Emergency Micropile Retrofit for I-94 Bridge over Riverside Drive - Dan A. Thome, P.E., Nicholson Construction Company, Kalamazoo, MI
- IBC 11-22: Micropile Construction for the Willis Avenue Bridge Replacement - Geologic Challenges meets Urban Construction Logistics - Terence P. Holman, Ph.D., P.E. and Thomas J. Tuozzolo, P.E. and Joseph Pastore, P.E., Moretrench American Corporation, Rockaway, NJ;

Design, Part 1 Session

Session Chair: Gerald J. Pitzer, P.E., Consultant, Pittsburgh, PA

- IBC 11-23: Soil-Structure Interaction Investigations on the Re-use of Existing Bridge Piers — Joseph Romano, Michael Baker Corporation, Hamilton, NJ; Michael Z. Yang, Ph.D., P.E., Shafiqul Azam, Yongxian Chen, Ph.D., P.E., Terrence J. Tiberio, P.E., Michael Baker Corporation, Moon Township, PA; Scott D. Zang, P.E., Michael Baker Corporation, Beaver, PA
- IBC 11-24: Design and Construction of the North Bank Bridge — David Greenwald, P.E., Ammann & Whitney, Boston, MA; Simon Fryer, Buro Happold Ltd, London, UK; Karl Haglund, Department of Conservation and Recreation, Boston, MA
- IBC 11-25: New Beams for the “New Bridge” - Innovative Bridge Design and Construction - The First NEXT Beam Bridge — Steven Hodgdon, P.E., Vanasse Hangen Brustlin, Inc., Bedford, NH; Peter A. Krakoff, P.E., CPM Constructors; Jim D. Wentworth, P.E., Maine Department of Transportation
- IBC 11-26: Expanding the Application of Jointless Bridges to Longer Bridge Lengths — Ardalan Sherafati, Nima Ala and Atorod Azizinamini, University of Nebraska-Lincoln, Lincoln, NE
- IBC 11-27: Framework for Improving Resilience of Bridge Design — Brandon Chavel, Ph.D., P.E., HDR Engineering, Inc., Chicago, IL, M. Myint Lwin, P.E., S.E., Federal Highway Administration, Washington, DC; John Yadlosky, P.E., HDR Engineering, Inc., Pittsburgh, PA
- IBC 11-28: Design and Construction of the Mon-Fayette Expressway Bridges - Uniontown to Brownsville, PA — Thomas Leech, P.E., S.E., Gannett Fleming, Inc., Pittsburgh, PA; Bernard J. Zielinski, P.E., Pennsylvania Turnpike Commission; Highspire, PA William R. Piper, ALCM Inc., California, PA
- IBC 11-29: Milton Madison Bridge: Innovative Design Build Procurement to Accelerate the Replacement of a Vital River Crossing — Aaron Stover, P.E., S.E., Michael Baker Jr., Inc., Louisville, KY; Kevin Hetrick, P.E., Indiana Department of Transportation

Workshops & Seminars

- W-3: National Bridge Industry Workshop: “New Focus, Developments, and Opportunities”, organized by ARTBA, Washington, D.C.
- W-4: Structural Health Monitoring of Bridges - Technologies and Practices, David Potter, National Instruments, Austin, TX
- W-5: Coatings Workshop, organized by SSPC: The Society for Protective Coatings, Pittsburgh, PA
- SEMINAR: Start to Finish: Design and Construction Management of the Hoover Dam Bypass Bridge — Myint Lwin, FHWA, Washington, D.C., Dave Zanetell, FHWA, David Goodyear, TY Lin, Ken Hirschmugl, Obayashi/PSM JV; Mark Ketchum, OPAC Engineers
- Co-Meeting: APC Bridge Committee Meeting: Featuring a presentation by Dave McTish on the Allegheny River Bridge Project
- Co-Meeting: AREMA Committee 15

Tuesday, June 7 - Afternoon Sessions

Research/Evaluation Session

Session Chair: Kent Harries, Ph.D., F.ACI, P.Eng., University of Pittsburgh, Pittsburgh, PA

- IBC 11-31: Evaluation of Shear Key Cracking in Adjacent Box Beams — Maria Lopez de Murphy, Ph.D., Penn State University, University Park, PA; Jubum Kim, Ph.D., Penn State Harrisburg, Middletown, PA; William C. Koller, P.E., District 1-0, PennDOT
- IBC 11-32: Effect of Transverse Stiffeners on Shear Strength of Intermediate Web Panels — Sherif Safar Aly, Ph.D., American University in Cairo, New Cairo, Egypt
- IBC 11-33: Reliability-based Durability Design and Control of Crack width in Busan-Geoje Fixed Link project of Korea — Sehoon Kim, Ph.D., Bohyun Yang, Jechun Kim, Ph.D., DAEWOO E&C, Busan, Korea

- IBC 11-34: Analytical and Experimental Assessment of Steel Truss Bridge Gusset Plate Connections — Yavuz Mentec, Georgia Institute of Technology, School of Civil and Environmental Engineering, Atlanta, GA; Yoon Duk Kim, Ph.D., Georgia Institute of Technology, School of Civil and Environmental Engineering, Atlanta, GA; Robert S. Zobel, Ph.D., P.E., Professional Service Industries (PSI), Turner-Fairbank Highway Research Center, McLean, VA; Mark Iadicola, Ph.D., NIST-Material Measurement Laboratory Metallurgy Division, Gaithersburg, MD; Donald W. White, Ph.D. and Roberto T. Leon, Ph.D., P.E., Georgia Institute of Technology, School of Civil and Environmental Engineering, Atlanta, GA; Justin M. Ocel, Ph.D., P.E., Federal Highway Administration, Turner-Fairbank Highway Research Center, McLean, VA
- IBC 11-35: Cracking Analysis of Florida Barge Canal Spliced I-Girder Bridge — Dongzhou Huang, P.E., PBSJ, Valrico, FL; Scott Arnold, P.E., Florida Department of Transportation, Tampa, FL; Bo Hu, P.E., PBSJ, Tampa, FL
- IBC 11-SP: A Novel Vulnerability Index for Design of RC Bridges Subjected to Seismic Hazards and Environmental Stressors — Behrouz Shafei, University of California-Irvine, Irvine, CA

Long Span Bridges, Part 2 Session

Session Chair: M. Myint Lwin, P.E., S.E., FHWA, Washington, D.C.

- IBC 11-36: Design and Construction of Hwamyung Bridge — Kwang-Soo Kim, Ph.D., Hyundai Engineering & Construction Company, Busan, Korea; Eun-Chul Lee, M.S., Chun-Soo Lee, B.S., Eui-Taek Yoon, M.S., P.E., Jong-Il Jung, B.S., P.E. Dohwa Consulting Engineers Co., LTD., Korea
- IBC 11-37: Design of the New Ohio River Cable Stayed Crossing: The East End Bridge — Preston Vineyard, P.E. and Ruchu Hsu, P.E., Parsons Brinckerhoff, New York, NY
- IBC 11-38: Design of the New Millennium Cable-Stayed Bridge in South Korea — Younghak Kwak, P.E., DAEWOO Institute of Construction Technology, Suwon-si, Gyeonggi-do, South Korea; Young-Min Kim, Ph.D., DAEWOO Institute of Construction Technology; Gyeonggi-do, South Korea; Myeong-Su Choi, Ph.D., Daewoo E&C, South Korea; Woo-Jong Kim P.E., Ph.D., and Kyung-Sik Cho, Ph.D., DM Engineering, Seoul, South Korea
- IBC 11-39: Long Concrete Spans and Tall Piers in Pennsylvania - Turnpike Section 51H over the Monongahela River in Brownsville — Ken Heil, P.E., FIGG Bridge Engineers, Inc., Exton, PA; Eric Hayes, Walsh Construction Company, Denbo, PA
- IBC 11-40: The Design & Construction of a Cable-Stayed Bridge with Elliptical Pylons — Dong-Ho Lee, Ph.D., Dong-Keun Kim, P.E., Hyun-Kioo Kim, P.E., Se-Hoon Choi, P.E., Jae-Geum Kim, P.E., SK Engineering & Construction, Seoul, South Korea
- IBC 11-41: Construction Engineering of Concrete Cable Stayed Bridge constructed by DAELIM — Dae-Yong Park, Ph.D., Sung Ho Kim, Ph.D., Joo Taek Park, Kwang Min Lee, Jae Hong Kim, P.E., Daelim Industrial Co., Ltd, Seoul, South Korea
- IBC 11-42: Cable Loss: Case Study with Dynamic Factors in Excess of 2.0 — Greg Hasbrouck and Eddie He, Ph.D., P.E., S.E., Parsons, Chicago, IL

Innovative Concepts Session

Session Chair: Jeffrey J. Campbell, P.E. Michael Baker Corporation, Moon Township, PA

- IBC 11-43: Design of a PC Box Girder Bridge with Corrugated Steel Webs in Mianmao Expressway — Weiguo Yan, Jiangsu Transportation Research Institute Co., Ltd., Nanjing, Jiangsu, China
- IBC 11-44: Low-Cost Rehabilitation with FRP Strips — Mark Whittlemore, P.E., Dubois and King Inc., Bedford, NH; Robert Durfee, P.E., SECB
- IBC 11-45: Emergency Bridge Replacement: A Design-Build Success Story — Jeremy Hedden and Mario J. Quagliata, P.E., Bergmann Associates, Inc., East Lansing, MI
- IBC 11-46: New Bridges over Old Dockyards - Injecting Life in an Urban Waterfront Development — Ellen Maes, Waterwegen en Zeekanaal NV, Gent, Belgium; Agnieszka Zajac, Autonomous Municipal Ghent Development Authority, Gent,

- Belgium; Dietmar Feichtinger, Dietmar Feichtinger Architectes, Paris, France; Wim Van de Voorde, Technum-Tractebel Engineering, Gent, Belgium
- IBC 11-47: Use of Duplex Stainless Steel in Girders & Cross Frames of Bridge Superstructure — Ronald Spacht, Jr., P.E., URS Corporation, Harrisburg, PA; Stuart Chen, Ph.D., University at Buffalo, Buffalo, NY
- IBC 11-48: Design of the Brent Spence Bridge Replacement — Ruchu Hsu, P.E., Parsons Brinckerhoff, New York, NY; Matt Barber P.E., Lochner, Seattle, WA
- IBC 11-49: Bridging Boothbay with HCB — John Hillman, P.E., S.E., HC Bridge Company, LLC, Wilmette, IL; Nathaniel Benoit, P.E., Maine Department of Transportation, Augusta, ME

Workshops & Seminars

- W-6: Fundamentals of Bridge Benefit and Life Cycle Cost Analysis, Nathaniel Coley, FHWA, Washington, D.C.
- W-8: Workzone Safety Power Workshop, organized by ARTBA, Washington, D.C.
- W-9: NEXT Beams, New Prestressed Concrete Beams, Doug Olah, High Concrete Group
- SEMINAR: AASHTO/FHWA Highway Tunnel Domestic Scan, Jesus Rohena, FHWA, Kevin Thompson, P.E., Arora and Associates, P.C., Auburn, CA; Louis J. Ruzzi, P.E., PennDOT, Bridgeville, PA; Mike Hebor and Brian Leshko, HDR, Inc., Pittsburgh, PA

Wednesday, June 8 - Morning Sessions

Design, Part 2 Session

Session Chair: Ronald D. Medlock, P.E., High Steel Structures, Inc., Lancaster, PA

- IBC 11-51: Pedestrian Bridges with Hybrid Stainless Steel-GFRP structure — Juan Sobrino, Ph.D., PEDELTA, Pittsburgh, PA
- IBC 11-52: Bridge Lessons Learned from the Chile Earthquake in 2010 — Phillip Yen, Ph.D., P.E., FHWA, McLean, VA; Genda Chen, Ph.D., P.E., Missouri University of Science and Technology, Rolla, MO; Ian Buckle, University of Nevada at Reno; Tony Allen, Washington State Dept. of Transportation; Daniel Alzamora, Federal Highway Administration; Jeffrey Ger, Federal Highway Administration; Juan Arias, University of Nevada at Reno
- IBC 11-53: I-40 Mississippi River Bridge Seismic Retrofit Project — Robert Schamber, P.E., TRC, Rancho Cordova, CA and Fred Stephenson, P.E., TRC, Memphis, TN
- IBC 11-54: Seismic Vulnerability and Retrofit Design of Slender Bridge Pier Walls — Majid Sarraf, Ph.D., P.E., P.Eng., Parsons, Irvine, CA
- IBC 11-55: A Synergy for Increased Seismic Protection of Bridges — Roy Imbsen, P.E., and Anoop Mokha, Ph.D., S.E., Earthquake Protection Systems, Inc., Vallejo, CA

Accelerated Bridge Construction Session

Session Chair: Louis J. Ruzzi, P.E., PennDOT, Bridgeville, PA

- IBC 11-56: Moving the Capilano River Bridge to Use as a Construction Detour — Murray Johnson, P.Eng., Buckland & Taylor Ltd., North Vancouver, BC, Canada; David J. Queen, P.Eng., British Columbia Ministry of Transportation and Infrastructure; South Coast Region, Burnaby, B.C., Canada; Nick Sandhu, E.I.T., British Columbia Ministry of Transportation and Infrastructure, South Coast Region, Burnaby, B.C., Canada
- IBC 11-57: Rehabilitating New Hampshire's Interstate Bridges 60 Hours at a Time — Tom Kendrick, P.E., McFarland-Johnson, Inc., Concord, NH; Ronald L. Kleiner, Jr., P.E., New Hampshire Department of Transportation, Concord, NH
- IBC 11-58: Construction of Curved Truss Bridge using ILM and Inclined Climbing System — Sung Man Yang, P.E., Kyung-Ho Park, Ph.D.; Youn-Chul Shin; Hee-Hong Kim, P.E., and Sung-Ryong Park, Hyundai Engineering & Construction Co. Ltd., Jongno-Gu, Seoul, South Korea;
- IBC 11-59: Accelerated Bridge Superstructure Widening & Replacement — Khosrow Babaei and Amir M. Fouladgar, P.E., The LPA Group, A Unit of Michael Baker Corporation, Falls Church, VA; Claude S. Napier, Jr., P.E., FHWA Resource Center, Structures Technical Services Team, Richmond, VA

- IBC 11-60: Accelerated Bridge Construction using Precast Superstructure Components in Incheon Bridge Project — JongYoung Song, Ph.D., P.E., Samsung C&T Corporation, Yeongi-Gun, Chungnam, South Korea
- IBC 11-61: Four Informative plus Entertaining Movies on DVD's that Explain Accelerated Bridge Construction Solutions to the General Public — Alfred R. Mangus, P.E., and Craig Copelan, P.E., Professional Engineers in California Government, Sacramento, CA
- IBC 11-62: Overnight Deck Replacement of the I-190 Grand Island Bridge — Mark Horschel, P.E., Bergmann Associates, Rochester, NY; Christian Hulse, P.E., New York State Thruway Authority, Cheektowaga, NY

Instrumentation/Inspection

Session Chair: Gary A. Runco, P.E., Borton-Lawson, Wexford, PA

- IBC 11-63: Inspection and Evaluation of Non-Composite Adjacent Prestressed Concrete Box Beam Bridges — Leon Lung-Yang Lai, P.E., S.E., Ph.D., Specialty Engineering, Inc., Bristol, PA; Clay Naito, Ph.D., P.E., Lehigh University, Bethlehem, PA; Peter Kim, P.E. and Tony Jen, P.E., Specialty Engineering, Inc., Bristol, PA
- IBC 11-64: Underwater Inspection and Acoustic Imaging of Deep Water Rock Anchors at Blue Mesa Reservoir, Colorado — David Reser, P.E., Infrastructure Engineers, Inc., Bridgeville, PA
- IBC 11-65: New Tools for Inspection and Evaluation of Steel Truss Bridge Gusset Plates — Christopher Higgins, Ph.D., P.E. and O. Tugrul Turan, Ph.D., Oregon State University, Corvallis, OR
- IBC 11-66: LRFR Ratings on Existing Bridge Inventories — A Case Study— Daniel Whittemore, P.E., LEED AP, AI Engineers, Inc., Middletown, CT; Prasad Nallapaneni P.E., MBA, Virginia Department of Transportation, Richmond, VA
- IBC 11-67: Measurements and Analyses of Cable Tensile Forces in Cable-Stayed Bridges Using Laser Vibrometer — Jin Taek Jun, Cheol-Hwan Kim, P.E., Hyun Bae Kim, Dong Geun Ahn, Posco Engineering & Construction, Inc., Hwasung, Korea
- IBC 11-68: Assessment of Pier Cap Retrofit PT Bars Using Taut Cable Vibration Measurement Method — Y. Edward Zhou, Ph.D., P.E., URS Corporation, Hunt Valley, MD; Brett Commander, P.E., Bridge Diagnostics Inc., Boulder, CO; Mark Guzda, P.E. and Peter Daloni, URS Corporation, Hunt Valley, MD
- IBC 11-69: Design and Implementation of Structural Health Monitoring System for Suspension Bridge — Qixian Tian, Bridge Science Research Institute, Ltd., Wuhan, China, Wuhan, Hubei Province, P.R. China; Zhou Mingxing, Bridge Science Research Institute, Ltd.

Workshops & Seminars

- W-8: Workzone Safety Power Workshop (Part 2), ARTBA, Washington, D.C.
- W-10: Products and Outcomes of SHRP 2 for the International Bridge Community, Jerry DiMaggio, Transportation Research Board, SHRP 2, NAS, Washington, D.C.
- W-11.1: Automated Rebar Detailing and Advantages of Using 3D Models & W-11.2: Using Digital Terrain Modeling for Bridge Location Optimization, Alexander Mabrich, P.E. Bentley BrIM
- W-12: Recent Advances in Lightweight Aggregate in Concrete for Bridges - Reid Castrodale, Carolina Stalite, Salisbury, NC
- W-13: A Practitioner's Thoughts About The Current (and Future) Status of Bridge Painting, Eric Kline, KTA-Tator, Pittsburgh, PA
- SEMINAR: Geothermal Energy Pile Systems— presented by Deep Foundations Institute, Venetia, PA. Presenters include: Professor Guney Olgun, Virginia Tech, Tracy Brettmann, Berkel & Company Contractors, Thomas Lapham, Geothermal International (North America) and Tony Amis, Geothermal International (U.K.) and Professor John McCartney, Ph.D., P.E., University of Colorado at Boulder and Professor Karen Henry, Ph.D., P.E., United States Air Force Academy
- Co-Meeting: AREMA Committee 15

Wednesday, June 8 - Afternoon Sessions

Construction Session

Session Chair: Donald W. Herbert, P.E., PennDOT, Uniontown, PA

- IBC 11-70: Influence of Curing Blanket Types on Mitigating Early age Bridge Deck Cracking — Juan Carlos Araiza, Ph.D., Wiss, Janney, Elstner Associates, Inc., Emeryville, CA; Kent K. Sasaki, Paul Krauss (same); Madhwesh Raghavendracharb, Ph.D., Anthony Gugino, California Department of Transportation, Sacramento, CA
- IBC 11-71: Huey P. Long Bridge Truss Lift Monitoring — Thomas Weinmann, Applied Geomechanics Inc., Buffalo Grove, IL
- IBC 11-72: Design and Construction of Large-scale Ground Anchorage System with High Performance Materials — Zhi Fang, Ph.D., College of Civil Engineering, Hunan University, Changsha, Hunan, P.R. China; Mingxian Chen, P.E., Department of Communication and Transportation of Hunan Province; Kuangyi Zhang, Ph.D. student, College of Civil Engineering, Hunan University; Guoping Chen, P.E., Administrative Bureau of Expressway of Hunan Province; Jianhua Hu, P.E., Design and Planning Institute of Communication of Hunan Province
- IBC 11-73: Design, Production and Erection of Full-Span Pre-tensioned Prestressed Concrete Box-Girders in Incheon Bridge Viaduct — Kyoung-Lae Park, Eng., P.E., Chung-Hee Lee, Min-Kwan Kim, Jong-Ho Yang, Samsung C&T Corporation, Seoul, Korea
- IBC 11-74: The Taxiway R Bridge, Taking the Sky Train over the Planes — David Burrows, P.E. and Mark Stark, P.E., Gannett Fleming, Inc., Phoenix, AZ; David Hensley, P.E., City of Phoenix Aviation Department, Phoenix, AZ; Tim Muller, P.E., Austin Bridge & Road LP, Phoenix, AZ
- IBC 11-75: Pile Installation Close to Adjacent Bridge Structure: A Case History — Aravinda Ramakrishna, Hardesty & Hanover, LLP, West Trenton, NJ; Raymond Mankbadi, P.E., M. ASCE (same); Kuang-yu Yang, P.E., M. ASCE, New Jersey Department of Transportation, Trenton, NJ

Rail Session

- Session Chair: James D. Dwyer, Advanced Rail Management Corporation, Wexford, PA
- IBC 11-76: Replacement of SEPTA Bridge 20.25 - R5 Lansdale Line — Justin R. McCarthy, P.E. and Robert S. Bistline, P.E., HNTB Corporation, Harrisburg, PA; Joseph J. Guzzi, HNTB Corporation, Philadelphia, PA; Robert L. Lund, Jr., P.E., SEPTA, Philadelphia, PA
- IBC 11-77: Paducah and Louisville Railroad Bridge — John Harms S.E., P.E., Hanson Professional Services Inc., Springfield, IL
- IBC 11-78: Design and Construction of the North Shore Connector Aerial Structure — Christopher T. Vollmer, P.E. PMP, Gannett Fleming, Inc., Pittsburgh, PA and Keith A. Wargo, P.E. Port Authority of Allegheny County, Pittsburgh, PA
- IBC 11-79: Structural Modeling and Design of the Denver I-225 LRT Corridor Bridge over I-225 — Daniel Baxter, P.E., S.E., Michael Baker Jr. Inc., Cleveland, OH; David Nemovitz, P.E., Michael Baker Jr., Inc., Lakewood, CO
- IBC 11-80: Metrification and Evaluation of Gusset Plates on the Route 100 Viaduct — William Farrow, P.E., Gannett Fleming, New York, NY; Christopher Higgins, Ph.D., P.E. and O. Tugrul Turan, Ph.D., Oregon State University, Corvallis, OR; Chris Carnes, P.E., SEPTA, Philadelphia, PA

Trendy Topics/Sustainability Session

Session Chair: Thomas G. Leech, P.E., S.E., Gannett Fleming, Inc., Pittsburgh, PA

- IBC 11-81: State of Sustainable Bridge Design Practices in the United States — Allison Halpern and Sigrid Adriaenssens, Princeton University, Princeton, NJ

- IBC 11-82: Sustainable Bridge Solutions using Recycled Plastics — Vijay Chandra, P.E., Parsons Brinckerhoff, Inc., Herndon, VA; John S. Kim, P.E., Ph.D., Parsons Brinckerhoff, Inc., Richmond, VA; Thomas J. Nosker, Ph.D., Rutgers University, Piscataway, NJ
- IBC 11-83: Testing of a Fiber Glass Reinforced Polymer Honeycomb Bridge in Huron County Ohio — Douglas Nims, University of Toledo, Department of Civil Engineering, Toledo, OH; Ed Baznik, EIT, Michael Baker Jr., Inc., Cleveland, OH; H. John Snyder, P.E., W.E. Quicksall & Associates, New Philadelphia, OH; Mike Endredi, EIT, University of Toledo, Toledo, OH
- IBC 11-84: Health Monitoring of Precast GFRP-Reinforced Bridge Deck Panels — Rebecca Nix, S.E., Utah Department of Transportation, Salt Lake City, UT; Chris P. Pantelides, Ph.D., S.E. and Jim Ries, Dept. of Civil and Environmental Engineering, University of Utah, Salt Lake City, UT

Workshops & Seminars

SEMINAR: Moving from Bridge Inspection to Management, presented by: FHWA/AASHTO. Presenters include: Hal Rogers, Michael Baker Jr., Inc., Harrisburg, PA, Jose Aldayuz, Michael Baker Jr., Inc., Alexandria, VA, Paul D. Thompson, P.E. and Wade Casey, FHWA, Washington, DC (Tentative)

Exhibit Hall Opportunities

The 2011 International Bridge Conference® (IBC) is the place to be for all bridge practitioners! Located in the City of Bridges, Pittsburgh's David Lawrence Convention Center will again host the annual IBC - the 28th! The IBC will feature more than 100,000 square feet of meeting and exhibit space. With larger exhibit space we now accommodate interactive displays and large equipment displays. Regular updates of exhibiting companies can be found on-line. Last year, we increased exhibit hall traffic by having the technical sessions inside the exhibit hall, keeping both of the main attractions of the IBC in one central location! The IBC Exhibit Hall allows attendees to:

- have more time in the program for "exhibit hall-only time"!
- include more conference events and activities, and refreshment options in the Exhibit Hall during the three days!
- have more space for larger and heavy equipment displays!

An up-to-date listing of all 2011 exhibitors can be found on the conference website so that you can plan to visit (or be part of) the largest trade show ever at the IBC!

Bus Tour, Tuesday, June 7; 1:00 - 5:00 P.M.

Pittsburgh is the city of bridges, and the IBC is pleased to once again offer our tour of unique area bridges. A signed waiver and release and appropriate footwear will be required to enter the construction area. Proposed sites include the I-579 Crosstown Bridge, the Boston Bridge and the McArdle Roadway Viaduct This guided tour departs from the Convention Center at 1:00 p.m. (An additional fee of \$40 is required; advance registration is required and seating is limited.) Please check the IBC registration Desk for availability and advance registration.

Awards Reception, Tuesday, June 7; 5:00 - 7:00 P.M.

NEW THIS YEAR! Join us on the evening of Tuesday, June 7 to celebrate the award winning medalists at our IBC Awards Reception. Following the day's sessions, unwind and network apart from the Conference with fellow attendees and celebrate the Award winners! A separate registration is required with a fee of \$20. Please indicate your selection on the registration form.

Start to Finish: Design and Construction Management of the Mike O'Callaghan – Pat Tillman Memorial Bridge (Hoover Dam Bypass)

TUESDAY JUNE 7, 8:00 A.M.–12:00 P.M

Goals: To provide (1) a forum for the Owner's, Designer's and Contractor's Management Teams to share the lessons learned in successfully completing the Hoover Dam Bypass Bridge and (2) an opportunity for attendees to discuss the success factors that are essential for managing highly challenging bridge design and construction projects successfully.

Moderator: M. Myint Lwin, P.E., S.E., FHWA, Washington, DC. Topics include:

- Planning and Managing for Success: Dave Zanetell, Project Manager, FHWA, Denver, CO
- Design of Permanent Works (criteria and constructability): David Goodyear, Design Engineer of Record, TY Lin, Olympia, WA,
- Construction Execution (engineered construction): Ken Hirschmugl, Project Manager, Obayashi/PSM JV, West River, MD
- Erection Engineering (3D modeling to facilitate construction), Mark Ketchum, OPAC Engineers, (subcontract to the JV), Berkeley, CA
- Integration and Proactive Risk Management, Dave Zanetell, Project Manager, FHWA, Denver, CO

At the end of the seminar, the participants will:

- Gain a good knowledge on successful project management principles and practices in bridge design and construction.
- Understand the success factors that are essential for managing highly technical bridge projects.
- Understand the many degrees of technical, commercial, and industry integration needed to assure project success.
- Take away the lessons learned from the design and construction of this major and complex project to immediately apply to present and future projects.

Target Audience:

- Federal, State and local highway agency engineers, consultants, contractors and academia in design, construction, and inspection of bridges.

Roadway Tunnels

TUESDAY JUNE 7, 1–5:00 P.M.

Most highway facility components in the United States are governed by design, construction, maintenance, inspection, and operations codes and regulations of the American Association of State Highway and Transportation Officials (AASHTO) and the U.S. Federal Highway Administration (FHWA). However, to date highway tunnels in the U.S. do not have comparable national codes and regulations. This seminar covers the latest developments and emerging technologies in the field of roadway tunnel design, construction, maintenance, and inspection.

Key topics, which include the AASHTO Subcommittee on Bridges and Structures Technical Committee on tunnels (T-20) overview, include:

- AASHTO Technical Committee on Tunnels (T-20) Overview
- Update on FHWA Rule Making for National Tunnel Inspection Standards
- Tunnel, Operations, Maintenance, Inspection, and Evaluation (TOMIE) Manual
- Research - LRFD Tunnel Design and Construction Specifications
- 2009 Tunnel Domestic Scan, Final Report and Overview
- Project Overview: North Shore Connector Tunnel in Pittsburg

Much progress has been made this past year in the field of tunnel engineering, which includes a new AASHTO Publication of a manual for Roadway Tunnels. An opportunity to interact with the presenters will be provided at the end each topic presented.

Geothermal Energy Pile Systems

Presented By The Sustainability Committee Of The Deep Foundations Institute

WEDNESDAY JUNE 8, 8:00 A.M.–12:00 NOON

Geothermal energy piles are an innovative renewable energy technology designed to exploit the relatively constant temperature of the ground for efficient heating and cooling of structures. In this seminar, notable practitioners and researchers will discuss the design issues and operational considerations of geothermal energy piles and provide an overview of their basic processes, mechanisms and key research initiatives. Results from thermal conductivity tests performed on individual piles and pile groups will be presented along with U.S. and international case histories. The technology as applied to large commercial and government installations will be highlighted, including considerations of installation geometry and varying construction techniques. Research involving long-term monitoring of an instrumented building will be presented including a comparison of a conventional heating and cooling system with a heat pump system comprising energy foundations and borehole ground-source heat exchangers. Design challenges that must be overcome to promote wider usage of this technology will be discussed.

Presentations include:

- Design Considerations of Energy Piles, Professor Guney Olgun, Virginia Tech
- Thermal Conductivity Evaluation of a Pile Group Using Geothermal Energy Piles, Tracy Brettman, Berkel & Company Contractors
- Thomas Lapham, Geothermal International (North America) and Tony Amis, Geothermal International (U.K.)
- Energy Foundation Research in Colorado, Professor John McCartney, Ph.D., P.E., University of Colorado at Boulder and Professor Karen Henry, Ph.D., P.E., United States Air Force Academy

Moving from Bridge Inspection to Bridge Management

WEDNESDAY JUNE 8, 1–5:00 P.M

This seminar will provide a better understanding of bridge management systems that use transition probabilities to predict future bridge needs. Its target audience is bridge owners and consultant inspection program managers who need this type of information to set agency budgets and performance goals to manage their bridges in a rational manner. Topics include:

- Introduction to transition probabilities, bridge modeling (Maintenance Repair and Rehabilitation vs. Improvement projects)
- Changes to AASHTO's bridge element-level condition data
- New directions for bridge management.

The AASHTOWare Pontis BMS will be the center of Topic One, while the other topics will be discussed from a more general perspective.

Speakers include:

- Hal Rogers, Michael Baker Jr., Inc., Harrisburg, PA
- Jose Aldayuz, Michael Baker Jr., Inc., Alexandria, VA
- Paul D. Thompson, P.E.
- Wade Casey, FHWA, Washington, DC (Tentative)

