## CONTENTS

### Technical Sessions

<table>
<thead>
<tr>
<th>Session</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABC</td>
<td>58</td>
</tr>
<tr>
<td>Bridge Evaluation</td>
<td>23</td>
</tr>
<tr>
<td>Bridge Management</td>
<td>56</td>
</tr>
<tr>
<td>Bridge Monitoring</td>
<td>40</td>
</tr>
<tr>
<td>Construction</td>
<td>31</td>
</tr>
<tr>
<td>Context Sensitive Design</td>
<td>33</td>
</tr>
<tr>
<td>Design, Part 1</td>
<td>21</td>
</tr>
<tr>
<td>Design, Part 2</td>
<td>43</td>
</tr>
<tr>
<td>Design-Build</td>
<td>22</td>
</tr>
<tr>
<td>Featured Agency Session</td>
<td>15</td>
</tr>
<tr>
<td>Keynote Session</td>
<td>11-13</td>
</tr>
<tr>
<td>Long Span Bridges</td>
<td>34</td>
</tr>
<tr>
<td>Railroad Plenary Session</td>
<td>28</td>
</tr>
<tr>
<td>Rehab, Part 1</td>
<td>45</td>
</tr>
<tr>
<td>Rehab, Part 2</td>
<td>59</td>
</tr>
</tbody>
</table>

### Workshops

<table>
<thead>
<tr>
<th>Workshop</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>W-1: Lightweight Concrete for Bridges</td>
<td>16</td>
</tr>
<tr>
<td>W-2: Maximizing Bridge Foundation Design Using Full Scale Load Testing</td>
<td>16</td>
</tr>
<tr>
<td>W-3: Bridge Aesthetics - Practical Ideas for Short and Medium Span Bridges</td>
<td>24</td>
</tr>
<tr>
<td>W-4: FHWA Accelerated Bridge Construction Workshop</td>
<td>25</td>
</tr>
<tr>
<td>W-5: Bridge Management Workshop: Sharing Bridge Management Practices</td>
<td>26</td>
</tr>
<tr>
<td>W-6: Contractor’s Forum</td>
<td>26</td>
</tr>
<tr>
<td>W-7: Seismic Accelerated Bridge Construction</td>
<td>28</td>
</tr>
<tr>
<td>W-8: Bridge Owner Construction Forum</td>
<td>29</td>
</tr>
<tr>
<td>W-9: Drilled Foundation and Anchored Earth Retention Applications</td>
<td>29</td>
</tr>
<tr>
<td>W-10: High Tech Underwater Bridge Inspection Techniques</td>
<td>29</td>
</tr>
<tr>
<td>W-11: State Highway Agency Forum</td>
<td>30</td>
</tr>
<tr>
<td>W-12: The FHWA Long Term Bridge Performance Program</td>
<td>52</td>
</tr>
<tr>
<td>W-13: Society for Protective Coatings (SSPC) Coatings Session</td>
<td>25</td>
</tr>
<tr>
<td>W-14: Western Pennsylvania Transportation Research Forum</td>
<td>52</td>
</tr>
<tr>
<td>W-15: FRP Composites for Bridges</td>
<td>54</td>
</tr>
<tr>
<td>W-16: Bridge Construction Best Practices for Engineers</td>
<td>54</td>
</tr>
<tr>
<td>W-17: PennDOT Bridge Maintenance Topics</td>
<td>55</td>
</tr>
</tbody>
</table>

### Seminars

<table>
<thead>
<tr>
<th>Seminar</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>State of The Art Confined Soil Walls and Abutment, and Variations of Soil Nailing Technologies</td>
<td>26</td>
</tr>
<tr>
<td>Highway Tunnel Inspection, Maintenance and Operation</td>
<td>27</td>
</tr>
<tr>
<td>Load Rating of Gusset Plates of Connections of Steel Truss Bridges</td>
<td>53</td>
</tr>
</tbody>
</table>

### Additional Content

<table>
<thead>
<tr>
<th>Content</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Awards Luncheon</td>
<td>13-14</td>
</tr>
<tr>
<td>Co-Sponsors &amp; Media Partners</td>
<td>9</td>
</tr>
<tr>
<td>Exhibitor Listing (alphabetically)</td>
<td>61-96</td>
</tr>
<tr>
<td>First Timer’s Reception</td>
<td>17</td>
</tr>
<tr>
<td>General Information</td>
<td>2-7</td>
</tr>
<tr>
<td>IBC Executive Committee Listing</td>
<td>9</td>
</tr>
<tr>
<td>Mini-Theatre Presentations</td>
<td>17-18, 37-38</td>
</tr>
<tr>
<td>Schedule At a Glance</td>
<td>Center Spread</td>
</tr>
</tbody>
</table>
Chairman’s Message
Welcome to the 2009 International Bridge Conference®. Despite the tough economic times, the Executive Committee of the International Bridge Conference® and the Engineers’ Society of Western Pennsylvania (ESWP) have been working hard to improve on its very successful 25th Anniversary conference. A special thanks to our Co-Sponsors and Financial Sponsors who help to promote and support the Conference. We have listened to you, our customers, and made changes to the conference based on the feedback from our past conference survey. We are proud to announce the changes to the exhibit area, the new workshops, training offerings and demonstrations. Also, we continue to reach out to our contracting partners to make this conference one in which they can share their valuable experiences with bridge designers for the good of the transportation industry. We hope that these changes along with our traditional program meet your needs on both an individual and company level. Our program for this year includes:

• Keynote Session: Our Keynote Session will include nationally known leaders including U.S. Congressman Representative James L. Oberstar, Chairman of the Committee on Transportation and Infrastructure; M. Myint Lwin, P.E., Director of Office of Bridge Technology, FHWA; Pennsylvania DOT Secretary and AASHTO President Allen D. Biehler, P.E.; Malcolm T. Kerley, P.E., Virginia DOT’s Chief Engineer and Chairman of the AASHTO Subcommittee on Bridges and Structures; and Daniel L. Dorgan, Minnesota DOT Director, Office of Bridges and Structures.

• Technical Program: The Technical Program continues to build on its success from last year by offering over 100 technical presentations. The sessions topics include:
  • Design
  • Bridge Evaluation
  • Context Sensitive Design
  • Bridge Monitoring
  • Bridge Management
  • Design/Build
  • Construction
  • Long Span Bridges
  • Bridge Rehabilitation
  • Accelerated Bridge Construction

You can find all of the information on the IBC Technical sessions, including a brief abstract of each paper, listed in order by date.

• Pennsylvania Department of Transportation: As the featured agency for this year, the IBC Executive Committee sought to invite a DOT that has been a leader on numerous transportation issues over the years. This year is no different for PennDOT, as they have embarked on one of the most aggressive bridge programs in the country with their Accelerated Bridge Program (ABP). In addition to the ABP, the Department will have a number of speakers on a variety of bridge topics including bridge problems/solutions, bridge fabrication QA/QC, 100 year life for bridges, historic bridges and bridge inspection to name a few.

• Exhibit Hall: We are expecting over 175 exhibitors this year as we have moved the Trade Show into Hall B of the David L. Lawrence Convention Center which offers refreshing natural daylight. Attendees are welcomed to take advantage of the industry’s knowledge of products, equipment and design experience by visiting this area. We welcome all the exhibitors who have participated in the past and the many new exhibitors for this year.

• This year, the IBC will offer more than 15 workshops on a variety of topics. A full schedule of these workshops can be found on Pages 18-21 of this brochure. We will again offer Workshops, Papers and Exhibits that will be special interest to members of the Contractor Industry. Three workshops in particular are “must see” events for Contractors.

• Also, new for this year is a “Welcome New Attendee” reception meant especially for our first time registrants, on Monday afternoon. Thank you considering IBC in your training and travel plans for this year. The Executive Committee for IBC and ESWP is continuing to strive to make IBC the “World of Bridges in the City of Bridges” and your one-stop-shop for the bridge industry.

Louis J. Ruzzi
District Bridge Engineer
Pennsylvania Department of Transportation-District 11-0
Welcome to the 26th Annual International Bridge Conference®

Please read the following general information to learn about many of the new features of the IBC! With our return to the David L. Lawrence Convention Center (DLLCC), we have the opportunity to offer many new and exciting elements to the Conference, and improvements from the 2008 IBC. As always, Conference personnel (found at the Registration Desk) and IBC Executive Committee Members (look for their ribbons!) can be a valuable source of information!

Registration Desk
The Conference Registration Desk is located in HALL B of the DLLCC, in the Ballroom Foyer. The hours are:

- Sunday: 5:00pm to 7:00pm
- Monday: 7:00am to 7:00pm
- Tuesday: 7:00am to 5:00pm
- Wednesday: 7:00am to 1:30pm

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. The Bridge Awards Luncheon (Monday) is included, however seating is strictly limited to the first 300 requests; you must select the luncheon on the registration form to receive a ticket. 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.

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

All refund requests must be received in writing. No refunds after June 12. If you don’t cancel and don’t attend, you will be charged the full registration fee.

Badge Identification
Please wear your IBC name badge at all times during the conference; it is your passport to all Conference activities. ESWP has authorized Room Monitors on staff to deny access to anyone not wearing the appropriate badge. As a safety consideration, we do suggest that you remove your badge when leaving the Conference.

Meeting Information
IBC functions are located in the DLLCC. Please check individual listings throughout this program for specific locations and times for all technical sessions, seminars and social functions. Events which require tickets will also identify the specific location for these functions. Any changes in the program schedule will be posted or announced at the Conference Registration Desk.

Cell Phones and Pagers
As a courtesy to the Speakers and fellow attendees, the IBC requests that all cell phones and pagers be turned off or switched to silent mode in all Presentation Rooms.

Attendee Registration Lists
Conference registrations received prior to May 22 have been compiled in the “IBC PRE-REGISTRATION LIST - PART 1 of 2”, and is distributed free to all registered attendees in your registration packet.

An addendum to the registration list, “PART 2 of 2,” will be available Wednesday morning of the conference and reflects those attendees who registered after May 22 or on-site during the conference.

An electronic copy, produced in MS Excel, of the entire Attendee Registration List is available for purchase. The cost is $25, and the list will be e-mailed to you following the conference.

Message Board
As a service to Conference registrants, a Message Board will be located in the Registration area of the DLLCC. The board will be available on June 1 - 4. Messages will be retained until the end of each day.

2009 IBC Bridge Tour
Tuesday, June 16; 1–5:00pm: Pittsburgh is the city of bridges, and the IBC is pleased to once again offer our tour of unique area bridges. The tour this year includes stops at the Rankin Bridge over the Monongahela River and the new bridge being built to carry the Pennsylvania Turnpike over the Allegheny River in Harmar (a signed waiver and release will be required to enter the construction area). These two structures will be under construction in 2009. Time permitting, the tour may finish with a ride on the Monongahela Incline to Mount Washington for a breathtaking view of the City. This guided tour departs from the DLLCC at 1:00pm. An additional fee of $40 is required.

IBC Exhibit Hall
One of the main attractions of the Conference is the IBC Exhibit Hall. As you stroll through over 170 exhibits, you will be able to explore the latest technologies, products and services the bridge industry has to offer. We also present several “Mini-Theatre” presentations at various times throughout the conference, where you can learn even more about many of the exhibitors. Additionally, don’t forget to participate in our popular “Exhibit Hall Bingo” game for your chance to receive cash prizes, simply by visiting the exhibitors on your bingo card. All registered attendees will have a bingo card in their registration packet.

The IBC Exhibit Hall is located in HALL B of the DLLCC. You will be able to view the exhibits during the following hours:

- Monday: 11:00am to 7:00pm
- Tuesday: 11:00am to 5:00pm
- Wednesday: 8:00am to 1:30pm

The IBC will feature a Luncheon Buffet throughout the Exhibit Hall on Monday and Wednesday, open to all registered attendees and registered spouses. Also, don’t miss our popular Exhibitor Reception, on Monday evening from 5:00–7:00pm throughout the Exhibit Hall. All registered attendees will receive one ticket redeemable for a beverage at the reception. (Additional tickets can be purchased at the Conference Registration Desk.)
Pre-prints and IBC Merchandise

Pre-prints for all technical presentations are available at the Pre-Print area located just outside of the Exhibit Hall on the 2nd level Concourse of the DLLCC. Pre-prints can be purchased for just $3.00 per copy.

New for this year: purchase a 1 GB flash drive that contains all available pre-prints in .PDF format for only $30.00.

Also, you can find copies of previous years’ IBC Proceedings (for $55 per volume). The Pre-Print Booth will be open:

- Monday: 9:00am to 6:00pm
- Tuesday: 8:00am to 5:00pm
- Wednesday: 8:00am to 1:30pm

IBC Gift Items

Once again at this year’s IBC, you will have the opportunity to purchase IBC Golf Shirts, T-shirts, and Hats. These items are high quality and feature the popular IBC logo. The Gift Item Table is located near the Pre-print desk on Concourse B, just outside of Hall B, where you can make your purchases throughout the Conference until Wednesday at 1:30pm. Please be sure to stop by and shop before Wednesday!

Proceedings

Proceedings are an optional order-only purchase and may be ordered in advance or on-site at the IBC for $30.00. Following the conference, proceedings may be ordered for $55.00. The official proceedings of the 26th Annual International Bridge Conference® will be available on CD in late Summer 2009 and mailed to you at that time.

Coffee Stand

Complimentary coffee breaks are available at various times throughout the Conference as noted in your Program Guide. Most breaks are presented in the Exhibit Hall. In addition, a coffee kiosk will offer beverages for purchase at various times during the conference. The Kiosk will be located outside of Hall B.

First-Timers Reception

Open to all first-time attendees! Please join members of the IBC Executive Committee for a “meet & great” and learn more about the many ways to benefit from the IBC. The First-Timers Reception takes place on Monday, June 15th at 5:00pm outside Room 323. This reception will help you to better understand all that IBC offers! Also, the IBC Executive Committee is interested in what you are looking for by attending the IBC. Enjoy this great opportunity to meet new friends at the First-Timers Reception before visiting the Exhibitor Hall Reception in Hall B, which takes place from 5:00-7:00 PM.

PDH’s

Earn Professional Development Hours (PDHs) by attending the IBC! The Engineers’ Society of Western Pennsylvania (ESWP), sponsor of the IBC, has been recognized as a Continuing Education Provider by the Florida Board of Professional Engineers, as well as many other state licensing boards. As such, your attendance at the IBC may qualify for continuing education credits.

To obtain verification of attendance at the IBC from the ESWP, you must request a PDH Confirmation Letter. Official confirmation from the IBC Offices regarding each attendee’s eligibility for PDHs will be mailed after the Conference. If you require a Confirmation Letter, please check mark the “PDH Letter Requested” box on the Registration Form. Please note that some sessions will require you to register individually.

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

Americans With Disabilities Act

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, ext. 11 and advise us of any such requirements in advance.

Spouse & Guest Program

While you are attending one of the technical functions of the conference, your spouse will be able to enjoy one of the many attractions of the Pittsburgh area. This new feature of the conference will begin with a “Get Acquainted” Continental Breakfast on Monday June 15 at 8:30am, with a Guest Speaker from VisitPittsburgh - Pittsburgh’s Convention & Visitors Bureau. Further, each day of the conference will feature an optional tour open to all conference attendees and their spouses & guests. Activities being planned for the 2009 Spouses program include a unique and informative tour of Pittsburgh aboard “Just Ducky” tours (Monday, 6/15), a day at the Heinz History Center (Tuesday, 6/16) and a private group tour of PNC Park, home of the Pittsburgh Pirates MLB baseball club (Wednesday 6/17). Please mark your selections on the Conference registration form. If you have questions about the events planned for the Spouses program, please stop by the IBC registration Desk. Registration for the Spouse’s Program is $75 and includes a ticket to the Get Acquainted Breakfast, and admittance to 2 Exhibit Hall buffet lunches and for the Monday evening Exhibit hall reception. Registrations for the daily tour events are priced individually, and subject to minimum attendance.

Looking Ahead!

Interested in presenting a paper, workshop, seminar or mini-theatre presentation at a future IBC? The IBC Call For Papers will open immediately following the 2009 Conference, and everyone is welcomed to submit an idea for presentation. Visit www.eswp.com/bridge for more details.
IBC Executive Committee

Co-Sponsors

American Association of State Highway and Transportation Officials (AASHTO)
www.transportation.org

American Public Works Association (APWA)
www.apwa.net

American Road & Transportation Builders Association (ARTBA)
www.artba.org

American Society of Highway Engineers (ASHE)
www.highwayengineers.org

Associated Pennsylvania Constructors (APC)
www.apc.org

Association of Diving Contractors International (ADCI)
www.adci-int.org

Pennsylvania Department of Transportation (PENNDOT)
www.dot.state.pa.us

Precast/Prestressed Concrete Institute (PCI)
www.vinci-construction.com

Transportation Research Board (TRB)
www.trb.org

Prestressed Concrete Association of Pennsylvania (PCAP)
www.pcap.org

Federal Highway Administration (FHWA)
www.fhwa.dot.gov

Society for Protective Coatings (SSPC)
www.sspc.org

Carnegie Mellon University — Department of Civil Engineering
www.ingr.pitt.edu

University of Pittsburgh — Department of Civil and Environmental Engineering
www.ingr.pitt.edu

Media Partners

bridge design & engineering Magazine

Bridges Magazine

Coatings Pro Magazine

The Journal of Protective Coatings and Linings (JPCL) and Paintsquare.com
(JPCL is the voice of SSPC: The Society for Protective Coatings)

Roads & Bridges Magazine
The Honorable James L. Oberstar
Congressman Minnesota 8th District

Jim Oberstar was born Sept. 10, 1934, to a working-class family on Minnesota’s Iron Range. He was elected to Congress in 1974 and immediately secured a seat on the transportation committee and started building his reputation as one of the nation’s leading experts on transportation issues. Chairing key subcommittees on oversight and aviation, Jim spearheaded major reforms in transportation safety, especially in the aviation sector.

Jim has also been a strong advocate for creating a diverse intermodal transportation system that incorporates new state of the art technologies. His work has been recognized by groups like the American Society of Civil Engineers which has named him as an honorary member.

He was elected chairman of the Transportation and Infrastructure Committee when Democrats took back the majority 2006, becoming the first Member of Congress who has served as both the administrator and the chairman of a full congressional committee. In the first two years of under Jim’s leadership, the committee had 93 bills in its jurisdiction reach passage by the full House of Representatives and go on to become law.

On August 1, 2007, the I-35W bridge collapsed in Minneapolis. Within hours Jim had authored a bill to rebuild the bridge. Forty-eight hours later, the legislation had cleared both the House and Senate and had been signed into law, and $255 million of assistance was on its way to Minnesota.

Jim in now looking to the future. The Transportation Committee is currently working on the next surface transportation bill to maintain and expand the nation’s vast transportation system. As drivers cope with rising gas costs and congestion, Jim will work to ensure that we invest in our country’s vital infrastructure while at the same time tackling energy challenges head-on.

M. Myint Lwin, P.E., S.E.
Director, Office of Bridge Technology (HIBT)
Federal Highway Administration

Myint Lwin is the Director of the Office of Bridge Technology with the Federal Highway Administration (FHWA). As Director of the Office of Bridge Technology, his responsibilities include: providing national guidance in the design and construction of major and unusual bridges and tunnels; developing national bridge program and engineering policies; initiating system and process improvements to continually improve the quality and safety of bridges and structures; and providing technical and program direction for the Highway Bridge Replacement and Rehabilitation Program.

Prior to his appointment in Washington, D.C., Mr. Lwin was the Structural Design Engineer at the FHWA Resource Center in San Francisco. Before joining FHWA in January 2000, he was the State Bridge and Structures Engineer, Office of Bridges and Structures,
Washington State Department of Transportation.
Mr. Lwin received his BSCE from the University of Rangoon, Burma, and his ASCE degree from the University of Washington, Seattle. He is a registered Professional Engineer in Civil and Structural Engineering.

The Honorable Allen D. Biehler, P.E.
Secretary, Pennsylvania Department of Transportation, Harrisburg, PA
Nominated by Gov. Edward G. Rendell, Allen D. Biehler, P.E., was confirmed by the State Senate as Pennsylvania’s Transportation Secretary in February 2003.

Secretary Biehler is responsible for an organization of about 12,000 employees with an annual budget in excess of $5 billion. PennDOT owns and operates the nation’s fifth largest state-owned highway system and administers one of the nation’s largest grant programs for mass transit, rail freight and aviation. PennDOT also processes 30 million driver and vehicle customer service transactions each year, and operates the 12 Pennsylvania Welcome Centers which greeted over three-million visitors in 2002.

Before taking the lead at PennDOT, Secretary Biehler amassed 34 years experience in transportation engineering, planning, construction administration and public transportation management.

Malcolm T. Kerley, P.E.
Chief Engineer, Virginia Department of Transportation, AASHTO
Mal Kerley, Chief Engineer for the Virginia Department of Transportation (VDOT), is a member of the AASHTO Standing Committee on Highways and has served as Chair of the AASHTO Highway Subcommittee on Bridges and Structures (SCOBS) since 2002. In July 2002, he was named Chief Engineer at VDOT, accountable for the quality, cost and timeliness of all engineering plans associated with the design of, and right-of-way acquisition for, VDOT transportation projects. He had served as Administrator of VDOT’s Structure & Bridge Division from 1992 to 2002, responsible for planning, design, construction, maintenance and inspection of more than 20,000 bridges and overpasses. He began his career with VDOT in 1971. He has a civil engineering degree from the Virginia Military Institute (BSCE, 1971) and Master’s degree from the University of Virginia (MECE, 1973).

Mark Bagnard
Chief, Investigations Division
National Transportation Safety Board
Office of Highway Safety
Mark Bagnard has been an investigator with the National Transportation Safety Board since 1997. During his tenure at the NTSB, Mr. Bagnard has worked for the Office of Highway Safety where he is currently assigned as the Chief of Investigations Division. Prior to that assignment, Mr. Bagnard worked in a variety of investigative disciplines, but primarily served as a highway investigator and technical reconstructionist. Some of his more noteworthy accomplishments were performing as the Investigator-in-Charge on the I-90 Tunnel collapse in Boston, MA and the I-35W Bridge collapse in Minneapolis, MN. Mr. Bagnard’s background is in Criminal Justice and before coming to the NTSB he had gained 15 years of accident investigation experience through his service as a law enforcement officer. During that time, he spent 11 years as an accident investigator and as an instructor teaching accident investigation and reconstruction courses at area police academies.

Daniel L. Dorgan
State Bridge Engineer, Minnesota Department of Transportation–Bridge Office
Dan Dorgan is the State Bridge Engineer for the Minnesota Department of Transportation and has over 30 years experience in bridge design and management. He began his career with the Minnesota DOT in 1975 and has held various positions as a bridge designer, administrator for bridge consultant contracts, and manager in the Metropolitan District of Minnesota DOT. In addition to a Bachelors of Civil Engineering, he also holds a Masters Degree in Business Administration from the University of Minnesota.

ESWP, in association with bridge design and engineering (bd&e) Magazine, Roads and Bridges Magazine, Bayer MaterialScience LLC, and the International Bridge Conference®, presents the 22nd Annual IBC Bridge Awards Luncheon, sponsored by Sherwin Williams. The International Bridge Conference® annually awards five medals and one student award to recognize individuals and projects of distinction. The medals are named in honor of the distinguished engineers who have significantly impacted the bridge engineering profession worldwide. The student award is named in honor of a former IBC General Chairman, champion of the student award’s program and friend to the bridge community at large. Tickets are required to attend this event, as seating is limited to 300 registrants! Honorees will be recognized in the following categories:

John A. Roebling Medal
The John A. Roebling Medal recognizes an individual for lifetime achievement in bridge engineering. We are pleased to recognize Harold R. Sandberg as, P.E., S.E. the 2009 recipient. As the first employee and Chairman Emeritus of Alfred Benesch & Company, Mr. Sandberg is well known in the engineering community. His many contributions to
the industry have garnered numerous prestigious awards. As an honorary member of ACI he was given the Henry Crown Award in 2005 and the Alfred E. Lindau Award in 2006. As a strong advocate of redundancy, he presented papers at meetings of the IBC. In 1982 he testified before the House Congressional Sub-Committee regarding failures in public structures. At 89, Mr. Sandberg continues to be active in several professional committees.

George S. Richardson Medal
The George S. Richardson Medal, presented for a single, recent outstanding achievement in bridge engineering, is presented to recognize the I35W Bridge over the Mississippi Bridge in Minneapolis, Minnesota. After the Aug. 1, 2007 collapse, the new segmental girder structure was designed, constructed, and opened to traffic at 5:00am on Sept. 18, 2008. The award celebrates the accomplishments of the government, contractors and consultants who were focused on delivering a complex project within extremely tight time constraints.

Gustav Lindenthal Medal
The Gustav Lindenthal Medal, awarded for an outstanding structure that is also aesthetically and environmentally pleasing, will be presented to recognize the Woodrow Wilson Bridge, south of Washington D.C. linking Virginia and Maryland. The fixed span bascule bridge features an aesthetic appearance and integrated state of the art environmental measures to preserve underwater vegetation and protect fish during foundation installation.

Eugene C. Figg Jr. Medal
The Eugene C. Figg Jr. Medal for Signature Bridges, recognizing a single recent outstanding achievement in bridge engineering, which is considered an icon to the community for which it is designed, will be presented to recognize the Sanhao Bridge over the Hunhe River in the Northeastern city of Shenyang, China. This artistic bridge expresses a new structural form that will give identity and distinction to the connecting communities.

Arthur G. Hayden Medal
The Arthur G. Hayden Medal, recognizing a single recent outstanding achievement in bridge engineering demonstrating vision and innovation in special use bridges, will be presented to recognize Seattle’s Museum of Flight Pedestrian Bridge. This bridge, sculptured to represent the wisps of an airplane’s contrails, provides a visually interesting invitation to the Museum of Flight.

James C. Cooper Student Award
The James D. Cooper Student Award recognizes undergraduate and graduate students who demonstrate an interest and passion for bridge engineering. The award is presented to winners of a student competition for technical writing and engineering insight. The 2009 award will be presented to Michael Loy of Oregon Episcopal High School for his paper entitled Developing a Novel pH Buffer Methodology to Inhibit Concrete Corrosion. The awards committee judged this paper to be superior all other undergraduate student and graduate student entrees, quite an accomplishment for a high school senior.

Learn more about the bridge program of the Pennsylvania Department of Transportation, with sessions and speakers that include:

- Bridge Problems and Solutions - Craig Beissel, P.E.
- Research on NDE P/S Beams - Dr. Clay Naito, Ph.D., Lehigh University
- Bridge Fabrication & QA/QC - Bob Horwhat, P.E. & Joe Bracken III, P.E.
- Historic Bridges in Pennsylvania - Kara Russell
- Accelerated Bridge Program - Hal Rogers, P.E.
- The Evolution of Bridge Inspection - Lance Savant, P.E.
- Pennsylvania Bridge Risk Assessment Strategy - Tom Macioce, P.E. & Tony McCluskey, P.E.
- 100 Year Bridge Summit - Kristin Longer, P.E.
**Lightweight Concrete for Bridges**

*Room: 329*

*Presented by: Expanded Shale Clay and Slate Institute (ESCSI)*

The objective of this workshop is to introduce designers and owners to the properties and applications of lightweight concrete (LWC) for bridges. Construction applications where LWC has been used include long-span bridges, bridges in seismic regions and/or on sites with poor foundation materials, and accelerated construction projects with precast concrete elements. Design and construction issues and the enhanced durability of LWC will be presented with a practical emphasis. Internal curing which can be achieved when prewetted lightweight aggregate replaces normal-weight aggregate in concrete mixtures will also be discussed. Reports will be given on several recent projects that have utilized lightweight concrete. A concrete supplier will provide perspectives on using lightweight concrete and current research will be summarized.

**How attendees could benefit:**
The outcome of the workshop will be that attendees will have information and examples of applications that will allow them to confidently implement the benefits of using LWC in bridges.

**Maximizing Bridge Foundation Design Using Full Scale Load Testing**

*Room: 330*

*Presented by: Loadtest, Inc.*

The workshop will guide attendees through the fundamental characteristics of modern geotechnical engineering design and analysis. Recognized industry leaders in deep foundation testing will share detailed techniques for improving the design of deep foundations with reference to the applicability of codes and specifications.

Real world construction experience and knowledge will illuminate the importance of construction techniques for improving deep foundation performance with particular reference to the relationship to end-bearing and shear will also be presented.

The importance of time and creep characteristics when assessing deep foundation test results. Again, the workshop with utilize applications based on both research and development in the construction industry and will provide useful insights for practicing engineers and contractors.

Applying full scale testing at the pre-design stage of bridge foundation design. How this valuable information is incorporated into LRFD and the costs associated with this strategy will be discussed.

These issues and topics will have broad appeal to any geotechnical, structural or bridge engineer involved in specifying, analyzing, designing or constructing deep foundations. Any engineer or student pursuing a post-graduate program would also benefit from the Program.

**How attendees could benefit:**
- Learn practical methods to economize bridge foundation design
- Understand how many of the largest bridges in the world utilize full scale testing to save time and money
- Engage with industry leaders that have conducted over 2,000 full scale load tests worldwide
- Understanding how to mitigate risk when designing bridge foundations.

**First-Timers Reception**

Open to all first-time attendees! Please join members of the IBC Executive Committee for a “meet & greet” and learn more about the many ways to benefit from the IBC. The First-Timers Reception takes place on Monday, June 15th at 5:00 pm outside Room 332. With so many offerings presented during the Conference, this reception will help you to better understand everything that is available for you! Also, the IBC Executive Committee is interested in what you are looking for by attending the IBC. Enjoy this great opportunity to meet new friends at the First-Timers Reception before visiting the Exhibit Hall Reception in Hall B, which takes place from 5:00-7:00 PM.

**Mini-Theatre Presentations**

*Room: Hall B*

One of the new offerings available in the new expanded Exhibit Hall are our new Mini Theatres. Mini Theatres are informal presentations given by vendors in the Exhibit Hall to provide an extended opportunity and learn more about the products and services offered by Exhibitors. No pre-registration is required, and attendance is included in your registration fee.

**M1-2 .......................................................................................2:00 PM**

*Presenter: Structal - Bridges*

*Location: Theatre 1*

*Topic: New Orthotropic deck for fast bridge rehabilitation*

Mr. Richard Vincent, Vice President, Research presents Structal-Bridges’ solution for fast bridge rehabilitation: a new orthotropic deck significantly lighter than concrete bridge deck. This innovative orthotropic deck is ideal for increasing the capacity of existing bridges and raising payload limitations without having to replace or modify the main girders, piers or abutments.

**M2-2 .......................................................................................2:00 PM**

*Presenter: Vector Corrosion Technologies*

*Location: Theatre 2*

*Topic: Cable Break Detection For Post Tensioned and Prestressed Cables*

For many years a nondestructive method for the location of breaks in Post-tensioned (especially grouted cables) and prestressed cables has been desired. The cables may be deteriorating due to several causes, poor grouting, water infiltration, or poor construction practices. Because of these issues, corrosion of wire or strand fractures can happen abruptly with no external signs of damage. The Post Tech Cable Break Detection System is a non destructive method of evaluating these grouted post tension cables.

**M1-3 .......................................................................................3:00 PM**

*Presenter: BASF Construction Chemicals, LLC*

*Location: Theatre 1*

*Topic: Degadeck Crack Sealer Plus by BASF Building Systems*

Degadeck Crack Sealer Plus is a rapid curing methacrylate resin that is very low in viscosity and surface tension. Gravity fed, it penetrates, repairs and seals concrete cracks in bridge deck applications. It fully cures in one hour with minimal requirement of labor and equipment. It is solvent free.

**M2-3 .......................................................................................3:00 PM**

*Presenter: Seprema, Inc.*

*Location: Theatre 2*

*Topic: AntiRock -Bridge & Deck Waterproofing*
AntiRock is an asphalt based product modified with SBS rubber and reinforced with non-woven polyester. The bond created between the deck and AntiRock is unsurpassed by any waterproofing product. As an asphalt based membrane, the installation of a heated asphalt road surface to the AntiRock creates a bond that eliminates shove even on extreme slopes.

**TUESDAY’S SCHEDULE AT A GLANCE**

<table>
<thead>
<tr>
<th>TIME</th>
<th>EVENT</th>
<th>ROOM</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00-10:05 AM</td>
<td>Design, Part 1 Session</td>
<td>301-302</td>
</tr>
<tr>
<td>8:00-10:05 AM</td>
<td>Design-Build Session</td>
<td>304-305</td>
</tr>
<tr>
<td>8:00-10:30 AM</td>
<td>Bridge Evaluation Session</td>
<td>406</td>
</tr>
<tr>
<td>8:00 AM-Noon</td>
<td>W-3: Bridge Aesthetics</td>
<td>327</td>
</tr>
<tr>
<td>8:00 AM-Noon</td>
<td>W-4: FHWA ABC</td>
<td>328</td>
</tr>
<tr>
<td>8:00 AM-Noon</td>
<td>W-13: SSPC Coatings</td>
<td>326</td>
</tr>
<tr>
<td>8:30 AM-Noon</td>
<td>W-5: Management Practices</td>
<td>329</td>
</tr>
<tr>
<td>8:30 AM-Noon</td>
<td>W-6: Detailing for Bridges</td>
<td>330</td>
</tr>
<tr>
<td>8:30 AM-Noon</td>
<td>Confined Soil Walls Seminar</td>
<td>See Ticket</td>
</tr>
<tr>
<td>8:30 AM-Noon</td>
<td>Highway Tunnel Inspection Seminar</td>
<td>See Ticket</td>
</tr>
<tr>
<td>10:30 AM-Noon</td>
<td>Railroad Bridges Plenary Session</td>
<td>301-305</td>
</tr>
<tr>
<td>11:00 AM-5:00 PM</td>
<td>Exhibit Hall Open</td>
<td>Hall B</td>
</tr>
<tr>
<td>11:00 AM-5:00 PM</td>
<td>Mini-Theatre Presentations</td>
<td>Hall B</td>
</tr>
<tr>
<td>1:00-5:00 PM</td>
<td>IBC Bridge Tour</td>
<td>Curbside</td>
</tr>
<tr>
<td>1:00-5:00 PM</td>
<td>W-7 Seismic ABC</td>
<td>326</td>
</tr>
<tr>
<td>1:30-5:00 PM</td>
<td>Construction Session</td>
<td>301-302</td>
</tr>
<tr>
<td>1:30-5:00 PM</td>
<td>Context Sensitive Design Session</td>
<td>304-305</td>
</tr>
<tr>
<td>1:30-5:00 PM</td>
<td>Long Span Bridges Sessions</td>
<td>406</td>
</tr>
<tr>
<td>1:30-5:00 PM</td>
<td>W-8: Bridge Owner Program Forum</td>
<td>327</td>
</tr>
<tr>
<td>1:30-5:00 PM</td>
<td>W-9: Drilled Foundations</td>
<td>328</td>
</tr>
<tr>
<td>1:30-5:00 PM</td>
<td>W-10: High Tech Underwater Inspection</td>
<td>329</td>
</tr>
<tr>
<td>1:30-5:00 PM</td>
<td>W-11: State Highway Agency Forum</td>
<td>330</td>
</tr>
</tbody>
</table>

**M1-4** .......................................................... 4:00 PM
Presenter: Greenman-Pedersen, Inc.
Location: Theatre 1
Topic: Bridge Services
Greenman-Pedersen, Inc. is a top national engineering and construction firm. Our transportation infrastructure services focus on Bridge Design, all facets of Construction Inspection, specialty Corrosion and Coatings Services, and Coatings Instrument Sales. GPI’s team of engineers, construction inspectors, coatings consultants, coating inspectors, scientists and technicians provide professional results for your bridge and heavy highway projects.

**M2-4** .......................................................... 4:00 PM
Presenter: Olson Engineering
Location: Theatre 2
Topic: Sonic and Radar Imaging for Bridge Conditions, Displacements in Load Tests and Vibrations
Short case histories will be presented to illustrate the following sonic and radar imaging applications for concrete and steel bridges:
- Imaging of void/honeycomb in a concrete bridge column with ultrasonic tomography
- Detection of voided PT ducts with impact echo scanning
- Evaluation of concrete defects in drilled shafts with crosstalk sonic tomography
- Mapping of post-tensioning and reinforcing with 3-D ground penetrating radar
- Measurement of displacements to 0.0004” for rapid load tests with interferometric radar
- Measurement of vibrations from 0-100 Hz and modal analyses with interferometric radar

**M1-5** .......................................................... 5:00 PM
Presenter: Bentley Systems, Incorporated
Location: Theatre 1
Topic: Bentley Bridge Information Modeling
BrIM provides an evolving framework for bridge information transfer and collaboration that enables a readily available, integrated, highly sophisticated suite of software products for the entire bridge lifecycle — from planning through design through construction through operation and maintenance. Come learn how Bentley will provide an interoperable, data-managed bridge solution to address the challenges of new and aging bridges, delivering a sustainable, long-lasting infrastructure.

**M1-6** .......................................................... 6:00 PM
Presenter: Bentley Systems, Incorporated
Location: Theatre 1
Topic: Bentley Rebar
Come to see an overview of Bentley Rebar automated reinforced concrete detailing capabilities. Rebar offers a comprehensive set of tools that allow the detailer to automate the placement and calculation of rebar quantities. User customization tools within the software provide accommodation for different design codes, bar shapes and bar chart presentations. Complemented with Bentley MicroStation, plans production processes are streamlined and efficient.

**M2-6** .......................................................... 6:00 PM
Presenter: Skala, Inc.
Location: Theatre 2
Topic: Postcards from The Edge: A photographic tour with a Rope Access Bridge Inspection Team (RABIT).
S

16

TUESDAY, JUNE 16

Pittsburgh

“One sided” cantilever pier caps supported by drilled shafts support a five-span, of the “kinked” girders, and a 3-D model was developed to verify the results. and horizontal clearances. The bridge is on a curved alignment and has a “T-Span” other side. The bridge crosses a railroad at a very sharp skew with limited vertical

James Andrews, P.E., Pennsylvania DOT, Indiana, PA; Ahmad K. Ahmadi, Ph.D.,

Design of a Four-Span Steel Bridge With Challenging Site Conditions, Numerous

Geometric Constraints, Geotechnical Concerns, and Three Abutments

James Andrews, P.E., Pennsylvania DOT, Indiana, PA; Ahmad K. Ahmadi, Ph.D.,

PE, and Keith Michael, PE., SAI Consulting Engineers, Inc. Pittsburgh, PA

This paper will discuss the design of a four-span continuous multi-girder bridge on 8% grade, built between a rock cliff face on one side and a steep slope on the other side. The bridge crosses a railroad at a very sharp skew with limited vertical and horizontal clearances. The bridge is on a curved alignment and has a “T-Span” framing into it to support a local road that intersects with the main road on the bridge. A conventional 2-D analysis was performed for the initial design and camber of the “kinked” girders, and a 3-D model was developed to verify the results.

“One sided” cantilever pier caps supported by drilled shafts support a five-span, prestressed concrete box beam bridge that supports a portion of the approach

roadway to the bridge where the roadway overhangs the steep hillside. A retaining wall was placed behind the pier columns, cast integral with the pier columns, and anchored into the hillside to provide additional support.

09-04 ..................................................................................... 9:15 AM

Dynamic Amplifications in Bridge Pier Design Forces Under Barge-Bridge Collision Loading

Michael Davidson and Gary Consolazio, University of Florida, Gainesville, FL

Bridges spanning navigable waterways in the U.S. are currently designed using the AASHTO static force approach to determine bridge pier structural demand due to vessel collision. However, findings from recent full scale experimental impact tests have revealed that significant mass-related inertial forces can develop in impacted piers due to the effect of the overlying superstructure. Based in part on these findings, a dynamic (time history) analysis technique has been developed that utilizes vessel force deformation relationships and predicts both impact-load time-histories and member design forces. Additionally, new vessel force deformation curves have been developed for use in determining the impact forces associated with barge collision events. In the present paper, dynamic analysis is combined with the newly developed vessel crush curves to investigate bridge dynamic amplification phenomena during barge collisions.

09-05 ..................................................................................... 9:40 AM

Maple-Oregon Double Leaf Rolling Lift Bascule Bridge

Todd Ude and Ken Smorzyński, Teng & Associates, Inc., Chicago, IL

The city of Sturgeon Bay in Door County, Wisconsin has developed along both sides of the narrow bay. Wisconsin DOT has recently completed a second bridge crossing in the downtown, improving traffic safety and capacity between the halves of the city. The new Maple-Oregon bridge accommodates marine traffic with a double-leaf rolling-lift bascule span. Each leaf rolls back on a horizontal track as it rotates to the open position. The design features steel bascule girders and framing and a solid lightweight cast-in-place concrete deck. Each leaf is balanced via concrete counterweight, and operated by two electric 60 horsepower AC variable speed motors with flux vector drives. This paper will provide an overview of the design and describe some of the solutions adopted for details specific to rolling lift bascules.

09-06 ..................................................................................... 8:00 AM

I-35W. “Soaring over the Mississippi River in Eleven Months”

Alan Phipps, P.E., S.E., FIGG, Tallahassee, FL; Kevin Western, P.E., Minnesota DOT, Oakdale, MN

The I-35W Bridge is a modern concrete bridge for the future, designed and built in 11 months (3 months ahead of schedule) while incorporating a progressive design of new technology and materials. The Minnesota DOT, created a vision for quality, safety and innovation that was achieved through close coordination among the
The $232 million kcICON Design-Build Project includes a landmark bridge over the Missouri River and reconstruction of over four miles of Interstate-29/35 in Kansas City, Missouri. The asymmetrical composite steel and concrete cable-stayed bridge has a main span of 550' with side span of 451.5' and a striking, diamond-shaped pylon rising 300' above the water to create a gateway experience for the Kansas City community. The bridge over water is enhanced by a flexible kinetic lighting solution.

Design of the Indian River Inlet Cable Stayed Bridge
Kenneth Butler, AECOM, Glen Allen, VA; Douglass Robb, DelDOT, Rehoboth Beach, DE

The Indian River Inlet Bridge Replacement Design/Build Project in Delaware will carry SR1 Coastal Highway across the inlet. The main span unit includes a concrete cable-stayed bridge with a 950' main span and 400' back spans with two pylons founded on presressed piles. The superstructure is supported by two vertical planes of stay cables anchored in the pylons and along post-tensioned edge girders. The bridge is built on falsework over land and in cantilever with a traveling form over the Inlet.

Designing Downslope Bridges along the Sea-to-Sky Highway for the 2010 Olympics
Schaun Valdovinos, Hatch Mott MacDonald, Vancouver, BC, Canada

Construction of a $500M upgrade to British Columbia’s picturesque Sea-to-Sky Highway is being widened in preparation for the 2010 Winter Olympics. Innovative solutions were developed for new highway bridge foundations to address steep, unpredictable mountain terrain including an angled column to avoid bearing on fractured rock at a high cliff. The Design/Build contract allowed bridges with prestressed concrete I-girders, and precast concrete deck panels on steel edge beams to progress in design concurrently with site excavation activities.

Emergency Gusset Plate Repair under Live Load
Michael Mallory, GussetFix LLC, Avon, OH

The Ohio Dept. of Transportation called for the emergency inspection of two major truss bridges resulting in the emergency repair of two major bridges, the Main Ave bridge and the Innerbelt bridge. Due the difficulty in providing temporary supports, a technique was developed to replace two truss chords without disconnecting the existing connections. The presentation will detail the repair method, discuss test results, and show a brief video of the installation.

The Smith Street Bridge: Rehabilitation of a Cantilever Deck Truss
C. Michael Cooper, Bergmann Associates, Rochester, NY; Thomas Hack, City of Rochester, NY

Originally designed by the Phoenix Bridge Company and constructed in 1931, the Smith Street Bridge presented several unique challenges, including difficult erection procedures for structural steel repairs and increased scrutiny subsequent to the I-35W disaster. This presentation will discuss the unique engineering and construction challenges for this major truss structure that spans the Genesee River Gorge in Rochester, NY.

Rehabilitation of the Ramsdell Road Bridge
Matthew Low and Edward Weingartner, Hoyle, Tanner & Associates, Inc., Rochester, NY; Tom Wandzilak, High Steel Structures, Inc., Lancaster, PA

For construction of the Kriebel Road Bridge over the Pennsylvania Turnpike, the Design/Build Team provided a 148.5’ simple span, composite steel plate girder bridge that was completed within a tight 12-month project schedule. Through early coordination efforts, the team identified critical fabrication considerations and expedited design with early key decisions for plate sizes, diaphragm members, types of connections and stiffener locations. These early project decisions contributed to successfully completing the bridge construction on schedule.

Rehabilitation of the Ramsdell Road Bridge
Matthew Low and Edward Weingartner, Hoyle, Tanner & Associates, Inc., Manchester, NH

The Ramsdell Road Bridge is a historic Warren Through-Truss constructed in 1937. Rehabilitation innovations including bare exodermic deck with lightweight aggregate concrete and replacement of key structural members were required to increase the live load capacity. This presentation will demonstrate how historic preservation and modern transportation needs can simultaneously be met and will highlight the design and construction phases of the project.
Three-Dimensional Analysis and Load Rating of the Cleveland Innerbelt Deck Truss Bridge
Daniel Baxter and Jeff Broadwater, Michael Baker Jr. Inc., Cleveland, OH; Dr. Toader Balan, Fynite Solutions, LLC, Moon Township, PA

The Cleveland Innerbelt Bridge is a 2,721 ft nine-span curved variable-depth deck truss that carries over 100,000 vehicles per day. A 3-D model was created to capture the effects of structure curvature, the wide main truss spacing and to determine accurate load distribution. This presentation will focus on the structural analysis methods that were utilized to load rate the structure.

Developing a Novel pH Buffer Methodology to Inhibit Corrosion of Steel Reinforcement in Concrete
Michael Loy, Student Paper Award Winner, Portland, OR

Concrete deterioration costs billions per year in repair, replacement and environmental impact. The major cause of deterioration is rebar corrosion occurring when concrete pH is reduced by high acidic attack or when chloride ions penetrate concrete. Previous mitigation strategies have focused on creating additional layers, sealants and coatings to inhibit corrosion. Results of this study support an efficient, cost effective, non-toxic buffer methodology to extend concrete service life, improve durability and promote a sustainable environment.

Bridge Aesthetics—Practical Ideas for Short and Medium Span Bridges
Room: 327
Presented by: TRB General Structures Committee (AFF10)

This workshop will be presented by members of TRB’s AFF10(2) Subcommittee on Bridge Aesthetics. The objective will be to educate members of the bridge community about the approach to aesthetic bridge design that is presented in the recently completed draft, first edition of TRB’s “Bridge Aesthetics Sourcebook - Practical Ideas for Short and Medium Span Bridges”.

There will be a series of presentations based on the Sourcebook content. Special emphasis will be provided on Design Guidelines and Bridge Lighting. A guided tour of the Subcommittee’s companion web site will show what resources are available to designers. There will also be presentations about how Historic Considerations should be taken into account and how Bridge Context can affect both the design of a bridge and the use of the space in which it is located.

The workshop will then provide participants with a practical bridge design exercise that will allow them to actually employ the ideas and design concepts presented earlier in the workshop.

How attendees could benefit:
Workshop attendees will gain a practical knowledge of how to approach aesthetic bridge design for short and medium span bridges. They will also be presented with thought provoking ideas about bridge aesthetics and context and gain an understanding of issues that are of concern throughout the practice of bridge design. The panel of presenters will be on hand to answer questions related to aesthetic bridge design and bridge context.

FHWA Accelerated Bridge Construction Workshop
Room: 328
Presented by: Federal Highway Administration (FHWA)

The highway community has been moving toward a new way of doing business as construction has intensified in recent years in an attempt to confront a two-fold problem. First, our highway infrastructure is aging. Much of it was built in the 1950s and 1960s and is in need of rehabilitation or replacement. Second, although highway capacity has increased little during the last two decades, traffic demand has grown tremendously, causing high levels of congestion. Large construction projects designed to improve worn-out and outdated roads and bridges compound traffic problems during lengthy construction periods. Today’s motorists want high quality, longer-lasting highways and bridges, but they want any construction-related activity completed as quickly as possible.

The workshop objective will be to present concepts of Accelerated Bridge Construction (ABC) technology and provide solutions to the above mentioned issues using ABC technology.

How attendees could benefit:
This workshop will provide information on the state of the art practices of Accelerated Bridge Construction Technology, including information on how, by using innovative prefabricated bridge technologies and innovative equipment and contracting strategies rather than conventional techniques, we can achieve our goals of rapid onsite construction with minimized traffic disruption, improved safety and constructability, and improved durability, and at competitive construction costs and ahead of schedule.

Enjoy Cost Effective Protective Performance And Environmental Friendliness In Steel Bridge Painting
Room: 326
Presented by Society for Protective Coatings (SSPC)

This workshop will present:
• High Build Aliphatic Moisture Cure Urethanes, the Next Generation
• A Tolerant Solvent-Free Epoxy System Applied Over Hydroblasting: The Way To Enjoy Cost Effective Protective Performance And Environmental Friendliness In Steel Bridge Painting
• OSHA: What’s On the Horizon
• Corrosion Engineering Initiative
• Environmentally Friendly Graffiti Resistant Coatings — Waterborne Polyurethane Coatings for Bridge Structures That Actually Work
• Federal Infrastructure Spending Stimulated Recovery in Lake County, Ohio
SSPC will have the above presentations in the morning followed by lunch, then an afternoon tour of Pittsburgh’s Heinz Field, home of the Pittsburgh Steelers.
Workshop 5  ..................................................  8:30 AM–12:00 NOON
Bridge Management Workshop—Sharing Bridge Management Practices: A Presentation & Panel Discussion
Room: 329
Presented by: Wade Casey – FHWA & AASHTO Member States
Federal, state, and local governments are under increasing pressure to balance their budgets and, at the same time, respond to public demands for quality services. Along with the need to invest in America’s future, this leaves transportation agencies with the task of trying to manage current transportation systems as cost-effectively as possible to meet evolving, as well as backlog needs. The use of existing or new transportation management systems provides a framework for cost effective decision making that emphasizes enhanced service at reduced public and private life-cycle cost. The primary outcome of transportation management systems is improved system performance and safety while collecting, analyzing, and integrating the data necessary to calculate, forecast, and display selected performance indicators, and identify critical performance gaps to make investment decisions and tradeoffs. The Bridge Management Workshop will engage state department of transportation (DOT) bridge management practitioners from selected states across the country under the theme of “Sharing Bridge Management Strategies.” Bridge management is essential in order to maximize scarce resources and maximize service life and a bridge management system is an effective tool in allocating limited resources to bridge related activities. How various states use the information from a bridge management system in the decision making process will be discussed.

Workshop 6  ..................................................  8:30 AM–12 NOON
Contractor’s Forum
Room: 330
Presented by: John McCaskie, Association of General Contractors (AGC)
Participate! Bridge Contractors Talking to Bridge Contractors, and to Owners and Designers (so that we better understand). Topics to be presented will include:
•  Rehabilitation  •  Demolition  •  Contractor Liabilities
•  New Frontiers  and, bring your own topic!
As market needs change, contractors venture differing kinds of work related to bridge construction, maintenance and rehabilitation Share with others your problems and concerns and how you handle them. Come to realize that we all share the same challenges and it is not necessarily a lonely battle.

SEMINARS
IBC Seminars are intensive, four-hour, single-topic focused sessions. Each seminar requires an additional fee of $125. Seating for each Seminar is limited and Pre-Registration is required. To attend an IBC Seminar, please inquire at the Conference Registration Desk to ensure your registration. Professional Development Hours (PDHs) are provided upon request and verification.

SEMINAR: HIGHWAY TUNNEL INSPECTION, MAINTENANCE AND OPERATION SEMINAR
TIME:  8:30 AM–12:00 NOON
PRESENTER: Jesus Rohena, FHWA, Washington, DC
This seminar will focus on the sharing of the best practices for inspection, maintenance, and operation of Highway Tunnels. Topics to be covered include:
•  Design, Construction, Inspection, Maintenance and Operation
•  Fire Safety Modeling – Consultant
•  Highway Tunnel Inspection, Maintenance and Operation - PennDOT
•  Structural, Mechanical, Electrical
•  Ventilation
•  Appurtenances
•  At the end of the seminar the participants will be able to:
  •  Understand the principles of good practices in inspection, maintenance and operation
  •  Establish contacts and reference sources
  •  Develop sound and effective programs for tunnels
Target Audience: Federal, state and local highway agency engineers, and consultants in materials, design, construction, inspection, maintenance and operation of tunnels.

SEMINAR: STATE OF THE ART CONFINED SOIL WALLS AND ABUTMENT, AND VARIATIONS OF SOIL NAILING TECHNOLOGIES
TIME:  8:30 AM–12:00 NOON
PRESENTERS: Michael Adams, Senior Researcher, FHWA Turner Fairbank Highway Research Center, McLean, Virginia; Robert Bavett, TerraTask, LLC; Colby Bavett, Presented by: John McCaskie, Association of General Contractors (AGC) Part One — History and Introduction (One hour) The first half workshop presents a summary of 40 years of geotechnical research in retaining walls, bridge abutments, open bottom box culverts, reinforced soils, landslides and rockfall. This research was performed by Colorado DOT, the U.S. Forest Service, the Federal Highway Administration and several agencies and universities. Expenditures on this research effort exceeded 25 million dollars and the major conclusion presented here is that smaller, lighter inclusions in granular soil produce stronger composite behavior than do heavier, stiffer elements on wider spacing. Full scale demonstrations show that variations in spacing of the inclusions approaches exponential factors in some cases. Several new tools, methods and techniques will be presented that are not as yet in standard practice. Earthquake Wings (a new and better way to build abutments in seismic regions) will be presented. Scour prevention methods will be introduced. The presentation concludes with recent constructions with the Soil Nail Launcher, including Launched Nails, Launched Micropiles and Launched Scour Micropiles. Super Nail concepts will also be discussed.
Part Two — Design Methods for Geosynthetically Confined Soil Walls, Abutments, Piers, Box Culverts, Soil Nails and Micropiles. (Two Hours)
This session presents analytical methods for designing state of the art composites. Examples of field constructions and including cost estimating will be presented. This session will also discuss the reasons for failures in MSE constructions.
At the end of the seminar, the participants will be able to:
•  Gain awareness of geotechnical research into composite soil behavior
•  Utilize analytical methods for designing various structures and foundation types using geosynthetically confined soil
•  Increase their knowledge base of state-of-the-art construction methods and techniques
The IBC Committee, recognizing the importance of the North American railroads to both our economy and security, will conduct a special plenary session devoted to presentations on railroad bridges.

Discussion will consist of current practices related to railroad bridges, rules and regulations applicable to rail bridges, research and specification requirements, bridge management and inspection programs and funding. Speakers include:

Steve A. Millsap, P.E. Assistant Vice President- Structures - BNSF Railway
John F. Unsworth, P.Eng. Manager, Structures Planning and Design - Canadian Pacific Railway
Gordon A. Davids, P.E. Chief Engineer - Structures Federal Railroad Administration, Office of Safety

How attendees could benefit:
 Attendees will gain an improved understanding of the issues associated with the use of ABC methods in regions of moderate to high seismicity, and can apply this information to current or future projects under development.
ing capabilities that permits accurate delineation of a scour area and calculates the volume of material that may be needed to correct a potentially hazardous deficiency and is used in conjunction with a trained hard-hat diver equipped with an underwater color recording DVD camera mounted on his or her’s helmet allows for a very detailed and thorough inspection of a bridge pier. There is also an added degree of diver safety because their image shows up on the monitor in relationship to the bridge pier and underwater hazards to be avoided. MHA plans to provide a demonstration of our specialized equipment including our M/V LIFTBOAT that lifts completely out of the water providing a very stable command center for MHA hard-hat divers and sophisticated sector scanning sonar. Sonar and underwater color camera images will be transmitted to the patio of the Convention Center. This will provide an ideal vantage point for audience participants to view the command center next to a railroad bridge pier sending back detailed images of a diver doing an inspection being guided to specific locations using sector scanning sonar. The audience can ask specific questions and have the divers respond to inquiries. Workshop 11 ............................................................... 1:30–5:00 PM State Highway Agency Forum: State of the Practice; Bridge Load Rating and Posting: FHWA & AASHTO Member States Panel Discussion and Roundtable Room: 330 Presented by: Thomas Saad, FHWA

A select group of State Highway Agencies will provide current and recommended practices for bridge load evaluation to ensure bridge safety, to post highway bridges for state legal loads, and to provide oversight to allow for the safe operation of the increasing requests for annual and special permits for overweight vehicles.

Due to the recent adoption of the AASHTO Manual for Bridge Evaluation which provides provisions for implementing Load and Resistance Factor Rating (LRFR), and the transition by State DOTs to full implementation of the LRFD Specifications, many State DOTs are modernizing their bridge evaluation programs to take advantage of the benefits of LRFR for rating new and existing highway bridges. These States are also taking a closer look at their current practices to ensure quality of their inventory of existing Load Factor and/or Allowable Stress Ratings.

To ensure the highest level of safety for the public traveling on our nation’s highway bridges, it is vital for State DOTs to have comprehensive practices in place to perform load evaluations of design, legal and permit vehicles and to provide the most accurate load capacity information from which to manage the vehicular traffic on each bridge. It is vital for bridge engineers to understand the best practices for load rating and to apply them accurately to properly inform owners how to post and permit for the ever increasing numbers of heavy loads on the highway network.

CONSTRUCTION

Time: 1:30-5:00 PM
Room: 301/302
Chair: Calvin Boring, Trumbull Corporation, Greensburg, PA

09-17 ...................................................................................... 1:30 PM
Post Tsunami Bridge Reconstruction in Indonesia
Robert Magliola, Parsons, Downers Grove, IL

The December 26, 2004 Indian Ocean tsunami devastated the northwest coast of the island of Sumatra in Indonesia. More than 230,000 persons lost their lives and 90 bridges were damaged and destroyed along the Banda Aceh to Meulaboh Road. The paper describes how replacement bridge types: steel truss, spliced precast I-beam and cast-in-place box culverts, were selected based on local construction means and methods, material availability, site accessibility, economy and how these bridges are being constructed in remote locations with little aid of heavy equipment.

09-18 ...................................................................................... 1:55 PM
Improved Link for Safety and Security
Kirili Pancholi, U.S. Coast Guard, Washington, DC

The replacement of the Florida Avenue Bridge was a combined Highway/Railroad Bridge Project under the Truman-Hubb Act. The bridge, at the junction of Mississippi River Gulf Outlet, Inner Harbor Navigation Canal and Industrial Canal, was relocated a 150 feet south of the old bridge. The benefit for its relocation is better security and provides safer navigation for 18 million tons of crude oil, coal and ore. The partnership between U. S. Coast Guard, New Orleans Port, Railroad Companies, Consultant, and Contractor in resolving challenges is a good guide for other current and future Highway/Railroad moveable bridge projects.

09-19 ...................................................................................... 2:20 PM
Innovative Widening Truss Erection of the Huey P. Long Bridge
John Brestin, HNTB Corporation, Kansas City, MO; Keith Jacobson, Massman Construction Company, Kansas City, MO

The Huey P. Long Bridge crosses the Mississippi River in New Orleans, Louisiana built in 1925. It is a 1840-foot three-span continuous cantilever truss bridge with an adjacent 530-foot simple span truss. This paper focuses on the erection of the river units widening trusses and addresses the analysis of the temporary stability frame used to brace the trusses during the lifts. The span by span erection method, utilizes temporary stabilizing frames that span between the bottom chords of the proposed widening trusses and have stabilizing towers to brace the compression chord of the truss while lifting.

09-20 ...................................................................................... 2:45 PM
Wind Loads on Steel Box Girders during Construction Using Computational Fluid Dynamic Analysis
Glenn Myers, PBS&J, Fort Lauderdale, FL; Ali Ghalib, PBS&J, Atlanta, GA

Constructability requirements for steel bridges are defined in the AASHTO Guide Specifications for Horizontally Curved Steel Girder Highway Bridges and the AASHTO LRFD Bridge Design Specifications and are intended to define conditions encountered during construction. Loads are easy to determine during the constructability analysis. Wind loads need to be considered for the different climatologic and topographic
factors that occur during construction. Drag coefficients to be utilized are not readily available. Computational Fluid Dynamic (CFD) modeling was performed to develop horizontal drag and vertical lift coefficients. This paper discusses the analysis of the wind loading on the skeletal frame and criteria utilized for the constructability plans for the Interstate 4 / Lee Roy Selmon Expressway Interchange.

**COFFEE BREAK ........................................3:10**

**09-21 ..............................................................3:30 PM**

**Design and Construction Aspects of Post-tensioned Concrete Incremental Launching Bridge**
Teddy Theryo, PB Americas, Inc., Tampa, FL; Paul Towell, PB Americas, Inc., Minneapolis MN

The first modern prestressed concrete incrementally launched bridge was constructed in Europe in the early 1960's. Since then, many post-tensioned incrementally launched bridges have been built around the world, except in the North America. The authors will focus on the essential design and construction aspects for this type of bridge construction instead of focusing on a particular bridge. Construction method topics will include the launching nose, jacks, temporary supports, sliding bearings, friction bearings and side guides. Design topics will include the advantages and disadvantages, tendon layout, cross-section, loading, construction staging, serviceability limit state, ultimate limit state and detailing.

**09-22 ..............................................................3:55 PM**

**1-76 Allegheny River Bridge Pennsylvania's First Long Span Cast-In-Place Concrete Segmental Bridge**
Garrett Hoffman, P.E., FIGG, Exton, PA; Gary Graham, P.E., Pennsylvania Turnpike Commission, Harrisburg, PA

Walsh Construction is building Pennsylvania’s first long span concrete segmental bridges, which were designed by FIGG. The twin 2,350’ structures are being constructed over roads, rail lines, the river and 14-Mile Island, an environmentally-sensitive state park. The 53’ main span crosses the Allegheny River. The bridge is being constructed on an adjacent alignment just south of the existing bridge with cast-in-place balanced cantilever construction utilizing form travelers. Work includes completion reconstruction of the toll plaza, expansion of acceleration and deceleration lanes and smaller bridges for local traffic and golf cart traffic that cross the Turnpike mainline.

**09-23 ..............................................................4:20 PM**

**Construction of the Pomeroy Mason Cable Stayed Bridge**
Jorge Suarez, Michael Baker Jr., Inc, Moon Township, PA; Don Tillis, Ohio Department of Transportation, Marietta, OH

The Pomeroy Mason Bridge is a concrete cast-in-place cable stayed bridge structure, which replaces an existing through steel truss structure on U.S. Route 33 over the Ohio River in Miegs County, Ohio. This new bridge will provide a link between two cities: Pomeroy, Ohio and Mason, West Virginia. Baker provided ODOT District 10 with Construction Support Services which include: construction inspection and documentation, cable-stayed bridge expertise, problem solving, falsework design, schedule monitoring, submittal reviews, and project closeout. This paper will discuss the challenges successfully overcome through the teamwork of ODOT, contractor, and construction managers, including flooding, a slope stability issue, falsework, form traveler design and fabrication.

**09-24 ..............................................................1:30 PM**

**Boulevard of the Allies Bridge over Forbes Avenue**
Cheryl Moon-Siriani, PennDOT District 11, Bridgeville, PA; Robert Pintar, Wilbur Smith Associates, Pittsburgh, PA

PennDOT, District 11-0 designed the reconstruction of the intersection of the Boulevard of the Allies with Forbes Avenue in the Oakland neighborhood of the City of Pittsburgh, a world renowned center for art, cultural, educational, and health care institutions. The project included a bridge replacement as well as other operational and safety improvements. The District teamed with the Oakland Task Force to develop context sensitive designs. This collaboration helped to transform the design of a transportation project into the design of a landmark structure that was woven into the Oakland community fabric.

**09-25 ..............................................................1:55 PM**

**Towards Green Bridges**
Scott Smelling, Hardesty & Hanover LLP, New York, NY

The goal of green design includes reducing greenhouse gas emissions, pollution emissions, waste, and the use of non-renewable resources to sustainable levels. While there is no existing standard for the green design of bridges or transportation infrastructure, bridge professionals need not wait for this void to be filled. Green design strategies based on ten overarching principles are well established and can be applied to projects immediately.

**09-26 ..............................................................2:20 PM**

**Design and Performance of Riveted Bridge Connections**
William Vermes, Euthenics, Middleburg Heights, OH

From the late 1800s to 1960, riveted construction was the predominant connection method of both steel bridge fabrication and erection. Now, nearly a half-century since the end of the accepted use of rivets, many American engineers, unfamiliar with riveted design, look at rivets with suspicion and as an inferior connection. However, review of past riveted construction practices, recent research and current field observations of riveted steel bridges shows that riveted connections are in fact an enduring and legitimate means of steel bridge construction.

**09-27 ..............................................................2:45 PM**

**Replacement of Historic Tied Through Arch Bridge**
Daniel Rogers, RETTEW Associates, Inc, Lancaster, PA; Quentin Rissler, Larson Design Group, Williamsport, PA

The existing 58’ simple span tied through arch bridge over Big Chichkies Creek in Lancaster County, Pennsylvania was designed in 1916 by prominent Lancaster County engineer Frank H. Shaw. The bridge, which was one of only two left of its kind in Lancaster had extensive concrete deterioration that necessitated replacement. The County of Lancaster contracted to design the replacement structure with specific instructions to develop a context sensitive design that reflected the distinctive architectural and historical features of the National Register eligible bridge.
A new long span segmental box girder bridge crossing the Kanawha River is currently under construction as part of the widening of Interstate 64 between the cities of Dunbar and South Charleston in Kanawha County, West Virginia. The eight-span Kanawha River Bridge has a 760-foot main span, the longest concrete box girder span in the United States, which is scheduled to be closed in early 2009. The structure has a total length of 2,975 feet, including 460 and 540-foot side spans and five additional approach spans ranging from 144 to 295 ft.

This paper describes the project procurement using alternative bidding for steel and concrete designs, the design modifications proposed by the Contractor for construction, and the bridge construction process using balanced cantilever construction with cast-in-place segments.

A new long span segmental box girder bridge crossing the Kanawha River is currently under construction as part of the widening of Interstate 64 between the cities of Dunbar and South Charleston in Kanawha County, West Virginia. The eight-span Kanawha River Bridge has a 760-foot main span, the longest concrete box girder span in the United States, which is scheduled to be closed in early 2009. The structure has a total length of 2,975 feet, including 460 and 540-foot side spans and five additional approach spans ranging from 144 to 295 ft.

This paper describes the project procurement using alternative bidding for steel and concrete designs, the design modifications proposed by the Contractor for construction, and the bridge construction process using balanced cantilever construction with cast-in-place segments.

A new long span segmental box girder bridge crossing the Kanawha River is currently under construction as part of the widening of Interstate 64 between the cities of Dunbar and South Charleston in Kanawha County, West Virginia. The eight-span Kanawha River Bridge has a 760-foot main span, the longest concrete box girder span in the United States, which is scheduled to be closed in early 2009. The structure has a total length of 2,975 feet, including 460 and 540-foot side spans and five additional approach spans ranging from 144 to 295 ft.

This paper describes the project procurement using alternative bidding for steel and concrete designs, the design modifications proposed by the Contractor for construction, and the bridge construction process using balanced cantilever construction with cast-in-place segments.
Mini-Theatre Presentations
Room: Hall B

One of the new offerings available in the new expanded Exhibit Hall are our new Mini Theatres. Mini Theatres are informal presentations given by vendors in the Exhibit Hall to provide an extended opportunity to learn more about the products and services offered by exhibitors. No pre-registration is required, and attendance is included in your registration fee.

T1-1
Presenter: BASF Construction Chemicals, LLC
Location: Theatre 1
Topic: Degadeck Crack Sealer Plus by BASF Building Systems

Degadeck Crack Sealer Plus is a rapid curing methacrylate resin that is very low in viscosity and surface tension. Gravity fed, it penetrates, repairs and seals concrete cracks in bridge deck applications. It fully cures in one hour with minimal requirement of labor and equipment. It is solvent free.

T2-1
Presenter: Soprema, Inc.
Location: Theatre 2
Topic: AntiRock -Bridge & Deck Waterproofing

AntiRock is an asphalt based product modified with SBS rubber and reinforced with non-woven polyester. The bond created between the deck and AntiRock is unsurpassed by any waterproofing product. As an asphalt based membrane, the installation of a heated asphalt road surface to the AntiRock creates a bond that eliminates shave even on extreme slopes.

T1-2
Presenter: Barnhart Crane & Rigging
Location: Theatre 1
Topic: Barnhart - Minds Over Matter

The most successful bridge projects integrate the construction and design process to satisfy the owner’s highest expectations. Barnhart has engineered and executed some of the industry’s most innovative solutions to complex heavy lift, heavy haul challenges. Spend a few minutes to see how early involvement in the design process provides you with a vast toolbox to facilitate and optimize the critical path to the success of your owner’s project.

T2-2
Presenter: Bentley Systems, Incorporated
Location: Theatre 2
Topic: Bentley RM Bridge

RM Bridge is a comprehensive structural engineering, design and analysis system, employed worldwide for large, complex bridges. It can handle segmented, cable-stayed, suspension bridges, and long crossings. RM offers linear and nonlinear analysis. 4D modeling of the bridge over time in the 4th dimension (time) to enable problem solving for construction sequencing, rolling stock analysis, and seismic and weather events, including wind dynamics. This demonstration will provide an overview of the many capabilities.

T1-3
Presenter: Structural - Bridges
Location: Theatre 1
Topic: New Orthotopic Deck for Fast Bridge Rehabilitation

Mr. Richard Vincent, Vice President, Research presents Structural-Bridges’ solution for fast bridge rehabilitation: a new orthotopic deck significantly lighter than concrete bridge deck. This innovative orthotopic deck is ideal for increasing the capacity of existing bridges and raising payload limitations without having to replace or modify the main girders, piers or abutments.

STUDY ON STRUCTURAL SYSTEM OF SUTONG BRIDGE

Liji Huang, CCCC Highway Consultants Co., Ltd, China, Beijing, China; Xigang Zhang, Minshan Pei, Liji Huang, China

Sutong Bridge, whose layout is (100 +100 +300) +1088 + (300 +100 +100) m marks the largest span of cable-stayed bridges in the world. The complex natural condition at the bridge site and the strict requirements for resistance of wind and seismic action make it crucial to choose a favorable structural system to assure the function and safety of the bridge. After detail analysis is carried out for viscous damper and hydraulic buffer, super liquid viscous damper with additional lock-ups is designed for the first application in bridge engineering.

A NEW LANDMARK BRIDGE TO DAO NANG CITY, VIETNAM

Esko Jarvenpaa, and Atte Mikkonen, WSP Finland Ltd, Oulu, Finland; Esko Leppaluoto, WSP Finland Ltd, Helsinki, Finland

Da Nang is a city of one million inhabitants in central Vietnam and one of the fastest developing areas in Vietnam. The City announced an international design competition in 2007.

The winning proposal will result in a new landmark for the city. There will be a 6-lane cable-stayed concrete bridge with backward inclined tower. The bridge will be 730 metres long and the tip of the tower, will be at 140 metres above the surface of the river. The length of the main span is 230m and the effective with of the bridge is 33, 5m, suspended with stay-cables in the middle line of the bridge. The construction will begin in the end of 2008 and the bridge will be ready for commissioning in 2011, at an estimated cost of $100M USD.

STRUCTURAL HARDENING FOR CABLE ELEMENTS OF CABLE SUPPORTED BRIDGES

Nathan Sauer, PE, VSL, Hanover, MD

The necessity of ensuring transportation structures are protected from threats on all levels is an ongoing concern for all those involved in the construction, operation and maintenance of these structures. Cable-supported bridges can be particularly vulnerable to a variety of threats, but with the proper analysis of these threats and the execution of a thorough planning process, these structures can be effectively protected. This presentation will examine the details involved with each step of this process.

COFFEE BREAK

09:35 - 09:45

09:35 - 09:45

09:35 - 09:45

09:35 - 09:45

09:35 - 09:45

09:35 - 09:45

09:35 - 09:45

09:35 - 09:45

09:35 - 09:45

09:35 - 09:45

09:35 - 09:45

09:35 - 09:45

09:35 - 09:45

09:35 - 09:45
Topic:  Bentley LEAP Bridge
Location:  Theatre 1
Presenter:  Bentley Systems, Incorporated

Bentley LEAP V8i is the revolutionary bridge engineering tool which integrates all aspects of concrete bridges including geometry, substructure and superstructure analysis, design and load rating in one powerful application. Come and preview the latest release featuring deck slab design in CONSPAN, integrated abutment design and user defined load combinations in RCPIER, T-beam bridges in CONBOX and integrated ground modeling.

T1-1........................................................................................................ 1:00 PM
Presenter:  U.S. Bridge
Location:  Theatre 2
Topic:  Advantages and Versatility of Steel Bridges
A detailed presentation on the benefits of simple span rural highway steel truss, short span beam and pedestrian bridges, complete with photographs of recent installations, an explanation of the structural components and principles of bridge construction and a description of the process used to rehab historic through trusses.

T1-2........................................................................................................ 2:00 PM
Presenter:  LUSAS
Location:  Theatre 1
Topic:  Linear and Nonlinear Buckling Analysis using Finite Elements
The importance of carrying out buckling analysis of steel plated I sections or tub girders for load rating, or for checking of stability during erection is well known. This presentation illustrates the techniques available and the ease with which this can be carried out using LUSAS Bridge analysis software.

T1-3........................................................................................................ 3:00 PM
Presenter:  Bright Bridge Construction, Inc.
Location:  Theatre 1
Topic:  Bride Erection Technology for Huge Pre-casted Concrete Box Beam
Modern and smart methods of pre-casting, transporting or launching complete concrete box beam up to 900 ton for highway or high-speed railway projects. Solutions of cantilever or continuous bridge which is over 1600 ton per span. Creative reference of working jobsites spreading in developing area will be shown.

T1-4........................................................................................................ 4:00 PM
Presenter:  R.J. Lee Group, Inc.
Location:  Theatre 2
Topic:  Science Based Decision Making Strategies for Concrete Bridges
Historically decisions regarding concrete bridges have relied on standard specifications. However, today advanced materials characterization tools and computer models offer the opportunity for science based decisions regarding design and repair scenarios. This presentation will discuss how these new tools can be used to prioritize decisions for maximum cost efficiency.

WEDNESDAY’S SCHEDULE AT A GLANCE

<table>
<thead>
<tr>
<th>TIME</th>
<th>EVENT</th>
<th>ROOM</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 AM-12:30 PM</td>
<td>Bridge Monitoring Session</td>
<td>301-302</td>
</tr>
<tr>
<td>8:00 AM-12:30 PM</td>
<td>Design, Part 2 Session</td>
<td>304-305</td>
</tr>
<tr>
<td>8:00 AM-12:30 PM</td>
<td>Rehab, Part 1 Session</td>
<td>406</td>
</tr>
<tr>
<td>8:00 AM-1:30 PM</td>
<td>Exhibit Hall Open</td>
<td>Hall B</td>
</tr>
<tr>
<td>8:00 AM-4:30 PM</td>
<td>W-12: FHWA Long Term Performance</td>
<td>326</td>
</tr>
<tr>
<td>8:00 AM-Noon</td>
<td>W-14: W’ PA Transportation Forum</td>
<td>327</td>
</tr>
<tr>
<td>8:30-11:30 AM</td>
<td>W-15: FRP Composites</td>
<td>328</td>
</tr>
<tr>
<td>8:30-11:30 AM</td>
<td>W-16: Construction Best Practices</td>
<td>329</td>
</tr>
<tr>
<td>8:30 AM-Noon</td>
<td>Gusset Plate Seminar</td>
<td>See Ticket</td>
</tr>
<tr>
<td>10:00 AM-Noon</td>
<td>W-17: PennDOT Maintenance Topics</td>
<td>330</td>
</tr>
<tr>
<td>11:30 AM-1:00 PM</td>
<td>Exhibit Hall Luncheon</td>
<td>Hall B</td>
</tr>
<tr>
<td>1:30-3:45 PM</td>
<td>Bridge Management Session</td>
<td>301-302</td>
</tr>
<tr>
<td>1:30-3:45 PM</td>
<td>ABC Session</td>
<td>304-305</td>
</tr>
<tr>
<td>1:30-3:45 PM</td>
<td>Rehab, Part 2 Session</td>
<td>406</td>
</tr>
</tbody>
</table>
Multi-Level Bridge Deck Evaluation Using Combined NDT Methods
Kenneth Maser, Infrasense, Arlington, MA

The work described in this paper draws upon the results of a condition survey program carried out on 88 overlaid bridge decks in Wisconsin’s southwest region over a two-year period. The purpose of this program was to identify decks that required rehabilitation, and to quantify the scope of the rehab work. The paper shows how the results of the IR and GPR methods were integrated to exploit the strengths and minimize the limitations of each method, so that the combination yielded more information than was available using each method separately. The paper describes the equipment used, the field data collected, the analysis methods employed, and the integration of results obtained from the different types of surveys.

International Bridge Conference®
June 14-17, 2009 – Pittsburgh, PA, USA
In the last 15 years, Structural Health Monitoring has become a useful and increasingly widely used tool for the construction, management, and lifetime extension of bridges and other civil structures. This paper is an overview of more than 40 bridge monitoring projects carried out over the last 15 years in 13 different countries and using advanced sensing systems including fiber optics, GPS, and corrosion sensing. In particular, we concentrate on the analysis of the different types of bridges that were monitored, their situation (new construction, existing structure, refurbishment) and the main purpose of the installed monitoring system. Two main categories emerge from this analysis: new bridges with innovative aspects or particular relevance and existing bridges with known deficiencies.

Integrated Monitoring System of Bridges
Comisuc Cristian-Comisu, Faculty of Civil Engineering, Iasi, Romania

The main scope of the research is to develop an integrated monitoring system for durability assessment of existing and new concrete bridges. The system must interface and integrate the actual practice mainly based on visual inspections and combines the response of a number of different reliable sensors, installed on the structure to monitor the progress of damage, with enhanced realistic deterioration models. The system and the sensors were developed to cover the parameters for the most important deterioration mechanisms: corrosion of reinforcement in bridges, carbonation of concrete, freeze-thaw cycles, alkali-silica reaction and mechanical damage, as well as the changes in the structures behavior and safety: static deformation, strains; crack widths and vibrations.

Comisuc Cristian-Comisu, Faculty of Civil Engineering, Iasi, Romania

Integrated Monitoring System of Bridges

The system and the sensors were developed to cover the parameters for the most important deterioration mechanisms: corrosion of reinforcement in bridges, carbonation of concrete, freeze-thaw cycles, alkali-silica reaction and mechanical damage, as well as the changes in the structures behavior and safety: static deformation, strains; crack widths and vibrations.

Comisuc Cristian-Comisu, Faculty of Civil Engineering, Iasi, Romania

Integrated Monitoring System of Bridges
with an arc suspension design. The load interaction between the conventional bridge and the arc section. A detailed nonlinear analysis was selected to provide accurate force and moment calculations on all members throughout the construction process and bridge life. This paper addresses the functionality of modeling this unique hybrid bridge design using commercially available software for sophisticated analyses.

**COFFEE BREAK ................................ 10:05**

**09-52  .................................................................................... 10:30 AM**

**Impact of Construction Methods on Curved Post-Tensioned Concrete Box Girder Bridges**
Bo Hu and Dongzhou Huang, PB&J, Tampa, FL

Post-tensioned curved concrete box girder bridges provide a versatile solution for highway projects with economic, geometrical and aesthetic constraints. This paper will investigate the structural behavior of post-tensioned curved concrete box girder bridges erected with the balanced cantilever construction method, as well as the post-tensioning design method for accomplishing a reasonable force condition under design loads. The research results are instructive and could be used in bridge design.

**09-53  .................................................................................... 10:55 AM**

**Effect of Skew Angles on a Simply-supported Curved Steel Plate Girder Bridge**
Jimin Huang, HDR Engineering Inc., Tampa, FL

This paper presents results of a parametric study investigating the effects of different bridge skew angles on the load demands on the bridge and the impact on the designs of steel plate girders and the substructures. Five different skew angles were evaluated. The findings reported in this paper will help bridge engineers to select appropriate skew angles for the design of simply-supported steel plate-girder bridges with sharply curved alignments.

**09-54  .................................................................................... 11:20 AM**

**Design of Rail Transit Bridges Using the AASHTO LRFD Code**
Jeffry Wetmore, AECOM Transportation, St. Paul, MN

Conversion of Washington Avenue Bridge between St. Paul, and Minneapolis, Minnesota to accommodate the light rail transit provided the impetus for examining rail bridge design criteria. Designers often use the AREMA Manual for guidance, because the steel rails on a transit system appear more similar to freight railroad bridges than to highway bridges. The Track Design Handbook for Light Rail Transit states that the AASHTO code is more applicable LRT aerial structures than AREMA.

**09-55  .................................................................................... 11:45 AM**

**The Evolution of Pre-Cast Segmental Bridge Construction in the State of Florida**
Timothy Barry, P.E., Reynolds Smith and Hills Construction Services, Inc, Rockledge, FL

The Florida Department of Transportation (FDOT) has made sweeping changes in the design and construction practices for precast segmental bridges. These changes involve improvements in design guidelines, material requirements, specifications, and construction practices. They also incorporate new technologies still under development. A better, more viable product is being produced because of these changes. Successful implementation of these new procedures and technologies are a positive step in the evolution of the segmental bridge industry.
This paper presents a synthesis of findings to utilize externally bonded FRP composites to rehabilitate reinforced concrete T-beam bridges. Selecting candidate bridges for suitability of repair is based on current NCHRP studies. The FRP repair system design is based on current ACI 440.2R-02 design guidelines. Results from the rehabilitated bridge and supporting testing will be used to develop draft PennDOT design standards and construction specifications and to apply “lessons learned” to future tee-beam rehabilitation projects.

**COFFEE BREAK** ............................... 10:05

---

**09-60** ............................... 9:40 AM

**Externally Bonded FRP Composites for the Rehabilitation of Reinforced Concrete T-beam Structures**

An Chen, West Virginia University, Department of Civil and Environmental Engineering, Morgantown, WV; Jeffrey Levan, P.E., Pennsylvania DOT, Engineering District 3-0, Montoursville, PA

---

**09-61** ............................... 10:30 AM

**Rehabilitation Challenges of the Route 35 Bridge Over Manasquan River**

Thomas Fisher and Rama Krishnagiri, PB Americas, Inc., Princeton, NJ

The NJ Route 35 Bridge over Manasquan River is a major link to two shore resorts. The 60 year old, 1080-foot, four lane, nine-span double-leaf bascule viaduct was rehabilitated to provide 25 years more of useful life. The major concerns of the motorizing public, businesses and marina owners, timing restrictions, and the mandate to maintain all four lanes throughout construction posed a tremendous challenge in choosing appropriate design, materials and methods, sequencing and meeting the construction schedule economically.

---

**09-62** ............................... 10:55 AM

**Exodermic Deck Repairs on the Kingston-Rhinecliff Bridge**

William Moreau, New York State Bridge Authority, Highland, NY

The reinforced concrete deck of the Kingston-Rhinecliff Bridge (KRB) was replaced with modular exodermic deck panels during a three year project between 2000 and 2002. The KRB is a 5200 foot long deck truss with approach spans of 1400 feet on each end. In 2003 cracking of the exodermic deck was identified on the approach girder spans. Strain gauging and computer modeling identified shortcomings in the design and a retrofit to the deck was designed and implemented.

---

**09-63** ............................... 11:20 AM

**Managing Fatigue Cracks In Steel Tub-Girder Webs at Interior, Cross-Bracing Connections**

Henry Fix, AECOM, Horsham, PA; Michael Chajes, University of Delaware, Newark, DE

The Newport Viaduct is a twin, 19-span viaduct, which is over 2000 feet long, consisting of different simple-span and continuous-span units. The cross-section is a variety of 2, 3 and 4 steel tub-girder configurations. The bridge is 30 years old and has a current ADT of over 67,000 vehicles/day. Over 700 fatigue cracks were discovered during a recent routine safety inspection throughout the length of the viaduct. This paper will explain the crack management program that was developed for the Delaware DOT for the future management of the bridge.
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 AM-5:00 PM</td>
<td>Conference Registration Desk Open</td>
<td>Hall B</td>
</tr>
<tr>
<td>8:00-10:05 AM</td>
<td>Design, Part 1 Session</td>
<td>Room 301-302</td>
</tr>
<tr>
<td>8:00-10:05 AM</td>
<td>Design-Build Session</td>
<td>Room 304-305</td>
</tr>
<tr>
<td>8:00-10:30 AM</td>
<td>Bridge Evaluation Session</td>
<td>Room 406</td>
</tr>
<tr>
<td>8:00 AM-12 Noon</td>
<td>W:3: Bridge Aesthetics</td>
<td>Room 327</td>
</tr>
<tr>
<td>8:00 AM-12 Noon</td>
<td>W:4: FHWA ABC</td>
<td>Room 328</td>
</tr>
<tr>
<td>8:00 AM-12 Noon</td>
<td>W:13: SSPC Coatings</td>
<td>Room 326</td>
</tr>
<tr>
<td>8:00 AM-4:00 PM</td>
<td>TRB Co-Meeting</td>
<td>Room 323</td>
</tr>
<tr>
<td>8:00 AM-10:00 PM</td>
<td>AASHTO/NSBA Co-Meeting</td>
<td>Room 325</td>
</tr>
<tr>
<td>8:30 AM-12 Noon</td>
<td>W:5: Management Practices</td>
<td>Room 329</td>
</tr>
<tr>
<td>8:30 AM-12 Noon</td>
<td>W:6: Detailing for Bridges</td>
<td>Room 330</td>
</tr>
<tr>
<td>10:30 AM-12 Noon</td>
<td>Highway Tunnel Inspection Seminar</td>
<td>Refer to Ticket</td>
</tr>
<tr>
<td>1:00-5:00 PM</td>
<td>IBC Bridge Tour</td>
<td>Curbside</td>
</tr>
<tr>
<td>1:00-5:00 PM</td>
<td>W:7: Seismic ABC</td>
<td>Room 326</td>
</tr>
<tr>
<td>1:30-5:00 PM</td>
<td>Construction Session</td>
<td>Room 301-302</td>
</tr>
<tr>
<td>1:30-5:30 PM</td>
<td>Context Sensitive Design Session</td>
<td>Room 304-305</td>
</tr>
<tr>
<td>1:30-5:00 PM</td>
<td>Long Span Bridges Session</td>
<td>Room 406</td>
</tr>
<tr>
<td>1:30-5:00 PM</td>
<td>W:8: Bridge Owner Program Forum</td>
<td>Room 327</td>
</tr>
<tr>
<td>1:30-5:00 PM</td>
<td>W:9: Drilled Foundation</td>
<td>Room 328</td>
</tr>
<tr>
<td>1:30-5:00 PM</td>
<td>W:10: High Tech Underwater Inspection</td>
<td>Room 329</td>
</tr>
<tr>
<td>1:30-5:00 PM</td>
<td>W:11 State Highway Agency Forum</td>
<td>Room 330</td>
</tr>
</tbody>
</table>
Applying Suspension Bridge Suspenders Rope Replacement Techniques to the Suspenders of Through Arch Bridge

Mohawk River, Albany, NY

Suspenders of a Through Arch Bridge (Northway Twin Arch Bridge over the Mohawk River, Albany, NY)

This concept, developed in combination with Modjeski and Masters, saved the bridge owner (New York State DOT) a total of approximately $5 million by eliminating the complex jacking system and traffic control requirements shown on the Contract Plans.

Applying Suspension Bridge Suspenders Rope Replacement Techniques to the Suspenders of Through Arch Bridge

Mohawk River, Albany, NY

Suspenders of a Through Arch Bridge (Northway Twin Arch Bridge over the Mohawk River, Albany, NY)

This concept, developed in combination with Modjeski and Masters, saved the bridge owner (New York State DOT) a total of approximately $5 million by eliminating the complex jacking system and traffic control requirements shown on the Contract Plans.
The FHWA Long Term Bridge Performance Program
Room: 326
Presented by: FHWA - Highway R&D Services

The objectives of this workshop are: to describe the FHWA’s Long Term Bridge Performance Program (LTBPP) and present the scope of the program activities to members of the bridge community; to seek input from workshop attendees on potential improvements to the program; and to encourage development of complementary R&D programs by public transportation agencies, university researchers and the inspection/NDE industry.

The LTBPP is an ambitious 20-year research effort to study the long term performance of highway bridges. The objectives of the LTBPP are to collect, document, and make available high-quality quantitative performance data on a representative sample of bridges nationwide. The availability of the collected data is expected to result in greater knowledge of bridge performance and degradation.

Specifically, it is anticipated that the LTBPP will provide a better understanding of bridge deterioration focusing on its numerous causes including corrosion, fatigue, environment and loads. The program will also collect information regarding the effectiveness of current maintenance and improvement strategies, and on the operational performance of bridges, focusing on congestion, delay and accidents.

The LTBPP is expected to provide information and data that will engender substantial improvements in bridge inspection programs, nondestructive testing technology, bridge design practices, bridge materials, bridge maintenance, preservation & rehabilitation practices and bridge management policies and practices at the local, state and federal levels.

How attendees could benefit:
The attendees will learn the scope, scale and details of the 20-year LTBPP. All aspects of the program will be presented including bridge performance issues, data priorities, bridge sampling techniques, pilot study, and inspection/monitoring protocols. They will be apprised of opportunities for parallel and/or complementary research and development projects.

Workshop 13 ............................rescheduled to Tuesday 8:00 AM
Society for Protective Coatings (SSPC) Coatings Session

Workshop 14 ..........................8:00 AM–12 NOON
Western Pennsylvania Transportation Research Forum
Room: 327
Presented by: Dr. Kent A. Harries and Dr. Melissa Bilec, The University of Pittsburgh Department of Civil and Environmental Engineering, Pittsburgh, PA

The forum highlights both research-in-progress and recently completed bridge and transportation research funded by PennDOT and NCHRP. The forum is focused on technology transfer and is of interest to DOT engineers, consultants and practitioners. Forum attendees will receive a CD consisting of the presented papers. The forum is open to all IBC attendees.

SEMINARS

IBC Seminars are intensive, four-hour, single-topic focused sessions. Each seminar requires an additional fee of $125. Seating for each Seminar is limited and Pre-Registration is required. To attend an IBC Seminar, please inquire at the Conference Registration Desk to ensure your registration. Professional Development Hours (PDHs) are provided upon request and verification.

SEMINAR: LOAD RATING OF GUSSET PLATES OF CONNECTIONS OF STEEL TRUSS BRIDGES
Wednesday, June 17; 8:30 AM–12 NOON
Moderator: M. Myint Lwin, P.E., S.E., FHWA

This seminar will focus on two goals:

• To provide bridge engineers with the fundamental knowledge to use the recent FHWA guidance to load rate gusset plates in accordance with the AASHTO LRFR and LFR methods
• Lessons learned by State and Consultant Bridge Engineers in addressing the impact of the evaluation requirements for existing truss bridges.

Topics includes:

• NTSB Recommendations, FHWA Technical Advisories and FHWA Guidance on Load Rating of Gusset Plates of Steel Truss Bridges using LRFR and LFR —
• New York DOT’s Perspective in Using LRFR in the Load Rating of Gusset Plates -
• PennDOT’s Perspective in Using LFR in the Load Rating of Gusset Plates -
• Using Finite Element Analysis in Load Rating of Gusset Plates -
• Application of Software in the Load Rating of Gusset Plates -
• Open Discussion
• At the end of the seminar, the participants will be able to:
• Understand the background behind the FHWA Guidance and the detailed steps involved in load rating by the LRFR and LFR methods
• Gain a good knowledge on how load ratings are done by State and Consultant Bridge Engineers
• Develop sound and effective programs for insuring structural adequacy of bolted and riveted gusset connections in steel truss bridges in compliance with NBIS.

Target Audience: Federal, state and local highway agency engineers, managers and their consultants in design, construction, inspection and load rating of steel truss bridges.
Part 1: An update on the construction of the New San Francisco-Oakland Bay Self Anchored Suspension Bridge, including an overview of the complex design of the bridge, i.e., the self anchored design and how that drives any number of unique construction challenges and approaches. Also included; a status report on where the project stands in the overall construction process and a look ahead to the expected progress in the next year. The project bid in March 2006 and is scheduled to complete in 2013.

Part 2: Presentation concerning standardization of Design drawing information, the use of 3D models to approval fabrication drawings and animation of complex assemblies.

Part 3: A demonstration of how states throughout the U.S. are using hydrodemolition for their bridge rehabilitation projects and how they can learn from each others’ methods. One of the items we would like to highlight, since PennDOT is the Featured State, is that they have recently begun using hydrodemolition for rehabilitation projects other than for LMC overlays, i.e. barrier retrofit and box beam deck replacement. Further, we will examine typical issues related to the hydrodemolition process that engineers typically inquire about; speed of process, water runoff, water treatment, and cleanup of the spoils.

How attendees could benefit:
- Better understanding of the process
- Develop a comfort level to try other DOT’s methods
- Equip engineers with additional rehabilitation tools
- Potential for DOT’s to try a case study using different types of surface preps

FRP Composites for Bridges: Setting New Standards in Rapid Construction & Repair
Room: 328
Presented by: American Composites Manufacturers Association (ACMA)

FRP composite technology for use in bridge engineering offers solutions that range from routine repairs to innovative designs for complex installations. This workshop will explore new repair techniques that significantly improve existing transportation structures; ground-breaking bridge applications made possible by using FRP composites; and implementation of recent codes and standards by AASHTO and ACI that make specifying FRP composites easier. The objective of this course is to equip the bridge design engineer with a tool kit of FRP composite design possibilities that can offer cost-effective solutions for decks and structural rehabilitation in bridges.

Key features of composites multiple strengths and wide-ranging design possibilities will be illustrated using current installations as a benchmark to future applications. We will also discuss specifying composites when preparing a bid contract, including initial cost considerations and how to capture lower overall costs due to benefits inherent to FRP composites, such as easier transportation, rapid installation, and life cycle cost advantages over traditional materials. New designs, including superstructures, decks, and repairs on bridge structures, will be also highlighted.

This workshop will be equally beneficial for those professionals who are just exploring the use of FRP composites in bridge applications for the first time and those with more composites experience that are interested in specification, design or repair of transportation structures.

How attendees could benefit:
Session attendees will learn how to design and specify composites with recently approved codes and standards from ACI and AASHTO. In addition, new products and installation techniques will be demonstrated using case histories of field applications that focus on accelerated construction and longer life cycles.
New 3-D CAD design tools and measurement methods have been developed and tested in the several bridge construction projects in Finland during 2004-2008. A research project was carried out with the aim to determine the possibilities to measure and to control the 3-D geometry of bridges by laser scanning. The aim of this study was:

1. to produce a point cloud of the bridge,
2. create a 3-D model of the bridge, and
3. determine best practices for the further treatment of 3D-data for reconstruction project.

3-D laser scanning is currently providing accurate source information for bridge designs, as well as bridge rehabilitation projects.

Cost Effectiveness of Stainless Steel-Clad Reinforcing Bars and Other Corrosion Mitigation Strategies in Bridge Decks
John Lawler and Paul Krauss, Wiss, Janney, Elstner Assoc., Northbrook, IL
Chloride-induced corrosion of traditional carbon steel reinforcing bars (black bars) is a primary cause of deterioration of concrete structures, especially bridge decks. A service life model has been applied to predict the performance of corrosion mitigation alternatives, including the use of microcomposite alloy reinforcing steel, epoxy-coated reinforcing steel, solid stainless reinforcing steel, stainless clad reinforcing steel, and high performance concrete (HPC), in a bridge deck setting. This paper will present results of the service life modeling, as well as life cycle cost analyses.

Load Rating Bridge Substructure Units
Robert W. Bondi and Richard M. Schoedel, Michael Baker Jr., Inc., Moon, PA
Multi-column bents, piers, and other similar substructures should be load rated if they show signs of distress such as structural cracking, excessive concrete spalling, excessive reinforcing steel corrosion, reinforcing bars not engaged by concrete, show signs of movement, or exhibit other distress. This paper will present a case study where the strut and tie method was used to effectively load rate substructure units. The strut and tie method generally uses lower effective concrete strengths and lower resistance factors than traditional analysis methods and therefore, will not necessarily predict higher member capacities in all cases. However, the strut-and-tie model may be beneficial where deficient shear reinforcement is compensated by the reserve capacity in the flexural reinforcement or vice versa and in cases with concentrated loads close to supports.

Comparison of Coating System Service Life Based on Type of Primer, Number of Coats, and Surface Preparation Method
Jayson Helsel, KTA-Tator, Inc., Pittsburgh, PA
This paper provides an objective review of the service life of field-applied high performance industrial coating systems considering the type of primer, number of coats and method of surface preparation. The differences in primer type addresses coating systems with zinc rich versus non-zinc rich coatings. The number of coats in a coating system focuses on the performance of two versus three coat systems. Additionally, the review looks at how the method of surface preparation affects longevity of the coating system. Included in the review are comparisons of installation and life cycle costs based on a suggested maintenance painting sequence.

Proposed National Tunnel Inspection Standards
Jesus Rohena, FHWA, Washington, DC
There are approximately more than 300 highway tunnels in the USA. The majority of these tunnels are more than 50 years old. Recent events in some tunnels like the CA/T in Boston, MA and also the Hanging lakes in CO have made tunnel inspections a priority for tunnel owners. After the fatal incident in Boston, the National Transportation Safety Board, recommended to FHWA to develop a National Tunnel Inspection Standards. This paper will present the status of ongoing FHWA activities to address the NTSB recommendation.

Data Fusion of Bridge Inspection Data using Learning Algorithm
Amin Hammad and Behzad M. Darbani, Concordia Institute for Information Systems Engineering, Concordia University, Montreal, QC, Canada
Evaluation of bridge conditions is done by periodical visual inspection or Nondestructive Testing (NDT) methods. Interpreting inspection data from different sources combined with bridge properties, and inferring a condition rating can be difficult. This paper presents a method for dealing with inspection data, when various visual, destructive and nondestructive inspection methods are used. A learning algorithm is used to fuse inspection data and link it to other bridge properties including traffic volumes, bridge type and age. The algorithm probabilistically evaluates bridge condition ratings based on available data. The proposed method is applied on set of real inspection data from Alberta Transportation, Canada to automatically evaluate bridges.
ACCELERATED BRIDGE CONSTRUCTION

Time: 1:30-3:45 PM
Room: 304/305
Chair: Lisle E. Williams, P.E., PLS, Consultant, Coraopolis, PA

A Precast Bridge System for Rapid Construction Applications
Bruce Campbell, Parsons, Southfield, MI; Martin Furrer, Parsons, Chicago, IL

Rapid bridge construction techniques are being used more frequently to limit the impacts to users of the transportation systems and improve durability. The paper will present the detailing of the design for rapid bridge construction technologies to meet the unique needs of the state of Michigan and the capabilities of local fabricators and will highlight construction lessons learned in the field and their application to future designs.

Road over I-84; Piecing it Together
Michael Arens, Michael Baker Jr., Inc., Salt Lake City, UT

The Riverdale Road over I-84 Bridge in Riverdale, UT required replacement in conjunction with roadway widening and upgrading the interchange from a diamond to a SPUI. Riverdale Road is a high density retail area. In order to reduce the construction impact to the area, the Utah Department of Transportation (UDOT) implemented Accelerated Bridge Construction (ABC). Several innovative solutions were implemented including multiple prefabricated elements and non-composite concrete deck panels.

Design/Build of Bridge for Interstate Storage & Pipeline

The new NJ Transit Rail System bridge was prefabricated in two 8’ wide sections and designed for HS-25 loading. Each abutment foundation was constructed of a steel cap beam supported by Chance Helical Piles attached with specialized brackets. The bridge sections were set into place and assembled within two hours while the metal deck pans, reinforcing steel, and concrete deck were placed in one working day. The entire construction portion of the project was completed within sixty days for a total cost of $270,000.

ACCELERATED BRIDGE CONSTRUCTION

Time: 1:30-3:45 PM
Room: 304/305
Chair: Lisle E. Williams, P.E., PLS, Consultant, Coraopolis, PA

A Precast Bridge System for Rapid Construction Applications
Bruce Campbell, Parsons, Southfield, MI; Martin Furrer, Parsons, Chicago, IL

Rapid bridge construction techniques are being used more frequently to limit the impacts to users of the transportation systems and improve durability. The paper will present the detailing of the design for rapid bridge construction technologies to meet the unique needs of the state of Michigan and the capabilities of local fabricators and will highlight construction lessons learned in the field and their application to future designs.

Road over I-84; Piecing it Together
Michael Arens, Michael Baker Jr., Inc., Salt Lake City, UT

The Riverdale Road over I-84 Bridge in Riverdale, UT required replacement in conjunction with roadway widening and upgrading the interchange from a diamond to a SPUI. Riverdale Road is a high density retail area. In order to reduce the construction impact to the area, the Utah Department of Transportation (UDOT) implemented Accelerated Bridge Construction (ABC). Several innovative solutions were implemented including multiple prefabricated elements and non-composite concrete deck panels.

Design/Build of Bridge for Interstate Storage & Pipeline

The new NJ Transit Rail System bridge was prefabricated in two 8’ wide sections and designed for HS-25 loading. Each abutment foundation was constructed of a steel cap beam supported by Chance Helical Piles attached with specialized brackets. The bridge sections were set into place and assembled within two hours while the metal deck pans, reinforcing steel, and concrete deck were placed in one working day. The entire construction portion of the project was completed within sixty days for a total cost of $270,000.

Accelerated Bridge Construction Approach Keeps Tappan Zee Bridge Open
Mohammad Shams and Kenneth Standig, HDR, New York, NY

The 53-year-old Tappan Zee Bridge is a 3-mile long crossing of the Hudson River, located 13 miles north of New York City. Under the current $147 million project, the concrete deck of the outer four lanes of the bridge will be replaced for a length of about 2.5 miles using a prefabricated superstructure system to minimize traffic disruption for the 140,000 vehicles that cross the bridge daily.

BRIDGE REHABILITATION 2

Time: 1:30-3:45 PM
Room: 406
Chair: Matthew P. McTish, P.E., McTish, Kunkel & Associates, Allentown, PA

Structural Analysis of the Pulp Mill Covered Bridge
Sean James, P.E. and Josif Bicja, Hoyle, Tanner & Associates, Inc., Manchester, NH

The focus of this paper will be the analysis and rehabilitative design for this unique covered bridge in Vermont. A 3-D computer model of the bridge was utilized for the structural analysis, which took into consideration the complicated load sharing interaction of the bridge’s four arches and three trusses based on their unique geometrical rigidities and stiffness. The Pulp Mill Covered Bridge is one of six remaining double-barrel covered bridges in the country and design is ongoing for its rehabilitation.

Emergency Pier Repairs to the Kinney Truss Railroad Bridge, Colchester, New York
Michael Marks, EIC Group LLC, Fairfield, NJ

The Kinney Truss Bridge constructed in 1890, owned by the NY Department of Environmental Conservation and Second Bruno Corporation carries an access road across the Beaver Kill in Colchester, Delaware County, NY. This presentation will discuss the emergency inspection and rapid rehabilitation design and construction of this historic structure.

Carnegie Interchange Rock Buttress Remediation
Dan Martt and Gene Lipovich, American Geotechnical & Environmental Services, Inc., Canonsburg, PA

During the initial construction in 1968 of Interstate 79 at the proposed Carnegie Interchange west of Pittsburgh, it was discovered that the piers on the north side of Robinson Run had moved laterally 6 to 8 inches, although remaining essentially plumb. This presentation will describe the remediation measures used to stabilize the slopes and maintain the structural integrity of the overpass bridges.
Rehabilitation of the 31st Street Bridge
Donald Marburger and Sean Hart, P.E., Baker Engineers, Moon Township, PA; Jeffrey Clatty, Pennsylvania Department of Transportation, Bridgeville, PA

The 31st Street Bridge is a 28-span steel structure comprised of 25 two-girder, floorbeam, stringer spans and 3 arch spans. This paper will discuss the main rehabilitation items focusing on unique elements such as the plating of the steel arches, context sensitive design issues including the re-use of the existing iron pedestrian railings, new aluminum pedestrian railings to mimic the re-configured existing iron railings, use of the Cal-trans type roadway barrier, and replacement of 4 spans and one steel bent.

Rehabilitation of Route 50 Drawbridge Ocean City, MD
Patrick O’Neill and Scott Reynolds, Hardesty & Hanover, LLP, Annapolis, MD

The Ocean City Drawbridge on Route 50, experiences approximately 4000 openings a year and carries an ADT of 24,000. The original structure was built in the 1940’s with the movable span consisting of a dual leaf bascule bridge comprised of a girder, floorbeam, stringer system with an open grid steel deck supported by purlins. This paper presents how an integral relationship between the designer and contractor can render an effective solution to critical defects in a short period of time with minimal impact to the public.

Welcome to the IBC Exhibit Hall!
The 2009 IBC Exhibit Hall has moved to larger space in the David L. Lawrence Convention Center, in HALL B. We can now accommodate even more displays than ever before—heavy equipment, active displays and super-sized exhibits and our brand new Mini-Theatres. With more space than ever to accommodate additional features, the IBC Exhibit Hall is the place to be. In addition to more than 175 Exhibits, the Featured Agency, PennDOT, is prominently featured in the center of the Exhibit Hall, along with numerous enhancements for your enjoyment. The Mini-Theatres provide Exhibitors with an opportunity to step out from their Exhibit booth and present additional information about their products & services—a separate schedule of presentations can be found alongside the listing of all other presentations.

The Exhibit Hall is open:

- Monday: 11:00 AM - 7:00 PM, featuring lunch (11:30 AM-1:30 PM) and reception (5-7 PM)
- Tuesday: 11:00 AM - 5:00 PM, concession lunch sales available
- Wednesday: 8:00 AM - 1:30 PM, featuring lunch (11:30 AM-1:00 PM)

Coffee breaks, when scheduled, will be located throughout HALL B.

Thanks to all of our returning Exhibitors, and to our new Exhibitors, too! The following is an alphabetical listing of all Exhibitors as of June 1, 2009.

A.D. Marble & Company .....................................................Booth: 304
Contact: Tiffani Armstead
Phone: 484-533-2500
Fax: 484-533-2599
E-mail: tarmstead@admarble.com
Website: www.admarble.com

A.D. Marble & Company is an employee owned consulting firm specializing in environmental studies, cultural resources studies, and engineering services. Our studies include NEPA documentation, wetland delineation and mitigation, air & noise, social environment, hazardous waste, geospatial data, historic structures, archaeology, public involvement, and transportation, structural, and water resources engineering.

Acrow Corporation of America ........................................Booths: 311/313
Contact: Eugene Sabicki
Phone: 201-310-9034
Fax: 973-244-0085
E-mail: sales@acrowusa.com
Website: www.acrowusa.com

Acrow is an industry leader in the design and manufacture of prefabricated modular steel bridges. Acrow’s principal business is the engineering, manufacturing, and supply of Acrow Panel Bridges. We have been in business for over 50 years. Acrow is based in North America with representation in 35 countries.

Advitam, Inc. .................................................................Booth: 325
Contact: Benoit Kroely
Phone: 703-674-0485
Fax: 703-674-0700
E-mail: benoit.kroely@advitam-group.com
Website: www.advitam-group.com

Advitam devotes itself to understanding the risks of deterioration for infrastructures and implements software solutions, inspection, maintenance and monitoring systems in order to...
ensure their durability and serviceability at lower cost. Advantum’s activities include: research and development of innovative technologies, software development, on-site inspections, monitoring system integration and installation, measurements, risk and deterioration analysis, assessment of life-span, recommendations for repairs, maintenance and life-extension.

**AECOM** .................................................................Booth: 427
Contact: Stanley Nalitz
Phone: 412-395-8888
Fax: 412-395-8897
E-mail: Stan.Nalitz@aecom.com
Website: www.aecom.com

**Al Engineers Inc.** .....................................................Booth: 305
Contact: Shanila Aslam
Phone: 860-635-7740
Fax: 860-635-7312
E-mail: SASLAM@aiengineers.com
Website: http://www.aiengineers.com
AI Engineers is a full service engineering firm specializing in NBIS Bridge Inspection, Bridge Design, and Bridge Management Systems. Other areas of expertise include civil, sustainable design and construction, N/E/P, construction management, construction inspection, utilities/ power, design-build and survey. Headquartered in Connecticut with several regional offices, the firm continues to grow dynamically as the result of a strong client focus.

**American Arminox, Inc.** ..........................................Booth: 404
Contact: Russ Paulson
Phone: 425-785-1913
Fax: 212-554-4089
E-mail: rp@arminoxusa.com
Website: www.arminoxusa.com
American Arminox is proud to present a Duplex stainless steel. 1.4362 (UNS32304) is a well known grade in the flat products range, where it has successfully been used for many years. Its corrosion resistance, combined with superior tensile values makes it suitable for a range of applications in severe conditions. We are now introducing this grade as reinforcement. 1.4362/UNS32304 with 1.4436 (316) and 1.4462/UNS32205 in our standard manufacturing program.

**American Association of State Highway &** ...............Booth: 102
Contact: Jose Aldayuz
Phone: 202-624-3610
Fax: 202-624-5469
E-mail: jaldayuz@aashto.org
Website: www.transportation.org
AMSHD — The Voice of Transportation

**American Bridge Manufacturing** .................................Booth: 504
Contact: Patrick McCarthy
Phone: 412-631-3000
Fax: 412-631-4001
E-mail: pmccarthy@americanbridge.net
Website: www.americanbridge.net
American Bridge is a vertically integrated construction, engineering, and manufacturing firm with operations throughout the USA and abroad. The company is specialized in the general construction, manufacture, erection, and rehabilitation of complex bridges and other structures. The manufacturing arm of American Bridge is uniquely qualified in the fabrication of structural steel for various bridge designs including arch, truss, girder, beam and moveable type bridges. Two modern fabrication facilities in Pennsylvania and Oregon serve North America’s bridge rehabilitation and new bridge markets.

**American Composites Manufacturers Association** ........Booths: 702/704
Contact: John P. Busel
Phone: 914-961-8007
Fax: 914-961-8004
E-mail: jbusel@acmanet.org
Website: www.acmanet.org
ACMA is the world’s largest composites trade association and hosts the largest composites conference in North America. The ACMA Transportation Structures Council serves to inform and educate practitioners on FRP composites used in civil engineering / construction applications. Manufacturer products on display include structural profiles, bridge decks, pedestrian bridges, rebar, piling, and concrete repair/strengthening systems. More information at www.acmanet.org.

**American Shotcrete Association** ...............................Booth: 114
Contact: Chris Darnell
Phone: 248-848-3780
E-mail: Chris.Darnell@Shotcrete.org
Website: www.Shotcrete.org
ASA is a non-profit organization of contractors, suppliers, manufacturers, designers, engineers, owners, and others with a common interest in promoting and educating the concrete industry on the versatility, quality and economic advantages of the use of shotcrete.

**Amscot Structural Products** .....................................Booth: 327
Contact: Peter Somogyi
Phone: 973-989-8900
Fax: 973-989-5651
E-mail: psomogyi@amscot.com
Website: www.amscotnj.com
AMSCOT Structural Products Corp., is an A.I.S.C. certified manufacturer of Custom-engineered Hi-load Bridge Bearing assemblies; steel shim laminated elastomeric pads, HLMR Pot bearings, Bronze Rocker’s and our advanced Uplift-Restraint-spherical slide bearing for seismic conditions. Our Bearings are revolutionary in the industry and in service for over 35 years.

**Applied Foundation Testing** ....................................Booth: 104
Contact: Tracy Bedingfield
Phone: 904-284-1337
Fax: 904-284-1339
E-mail: tbedingfield@testpile.com
Website: www.testpile.com
Specializing in statnamic axial and lateral load testing, crosshole sonic logging (CSL), sonic integrity testing, video shaft inspection device, post grouted shafts, shaft inspection, dynamic pile testing, conventional load tests, embedded data collectors.

**Applied Geomechanics, Inc.** .....................................Booth: 234
Contact: Bill Villalpando
Phone: 281-571-0300
Fax: 978-752-1307
E-mail: bill.villalpando@pinntech.com
Website: www.geomechanics.com
Applied Geomechanics specializes in providing integrated monitoring solutions associated with existing infrastructure, as well as new construction. From tiltmeters to GPS and Fiber Optics, our innovative and comprehensive instrumentation monitoring programs are cost effective tools to
reduce both the risk and the cost of construction.

**Architectural Polymers**

Contact: Marshall Walters
Phone: 610-824-3322 X11
Fax: 610-824-2117
E-mail: marshall@architecturalpolymers.com
Website: www.architecturalpolymers.com

For over 15 years, Architectural Polymers has been widely recognized as the most creative and quality-oriented form liner designer/manufacturer. We offer form liner cast-in-place solutions in four options. A tough, multi-use urethane, a lightweight medium-use urethane, low use ABS and single-use HIPS are now available in various stone patterns. We also carry seventy-six form liner textures that can be customized, combined, or created for any bridge or retaining wall project. To complement our new products, Architectural Polymers has maintained its licensed status as a qualified architectural surface eco-staining service. For more information, stop by our booth #715 or visit our website at www.architecturalpolymers.com in which specifications can be obtained via the ARCAT link.

**AST/Adhesive Systems Technology Corp.**

Contact: Bryan Anderson
Phone: 763-592-2060
Fax: 763-592-2075
E-mail: bryananderson@ast-corp.net
Website: www.ast-corp.net

AST Adhesive Systems Technology (AST) designs and manufactures simple, rugged and reliable meter, mix and dispense equipment for the industrial and construction markets. AST metering pumps can deliver from 1 cc to over 5 gallons per minute of material in metered shots or continuous flow. Materials for dispensing, extruding or spraying include urethanes, epoxies, polyureas and silicones. AST equipment:

- **Pays for Itself Quickly Through Labor Savings**
- **Allows for More Production Time and Less Maintenance.**
- **Has Fewer Moving Parts**
- **Pumps Viscous & Abrasive Materials up to 1,000,000 cps**
- **Can be Completely Air or Electrically Operated**

Whether it’s custom built systems or standard equipment, AST has the right machine for you.

**Automatic Power, Inc.**

Contact: Bob Nichols
Phone: 713-228-5208
Fax: 713-228-3717
E-mail: bnichols@automaticpower.com
Website: www.automaticpower.com

Automatic Power & Phanes Marine are the world’s leading manufacturer of navigational aids including bridge lights, aviation obstruction lights, fog signals, racons & traffic gates for fixed and movable structures. While solar powered equipment is our specialty, all products can be operated from commercial power.

**Barnhart Crane & Rigging**

Contact: Allen Wenturine
Phone: 610-499-1700
E-mail: awenturine@barnhartcrane.com
Website: www.barnhartcrane.com

Barnhart embodies the concept of “Mind over Matter”. Barnhart specializes in utilizing cutting edge technology to provide innovative, engineered, lifting and moving solutions for the bridge building industry. We truly believe in “Building it Big, Moving it Once”. Like our clients, you too will benefit from Barnhart’s innovative, cost saving ideas.

**BASF Construction Chemicals, LLC**

Contact: Lorella Angelini
Phone: 612-309-4777
Fax: 952-403-6539
E-mail: lorella.angelini@basf.com
Website: www.basf.com

BASF Construction Chemicals — Building Systems, manufacturer high quality traffic deck membranes, repair mortars, specialty grouts, and concrete strengthening products for bridge construction, repair, maintenance and rehabilitation. Our products are often combined to form integrated, single-source systems to solve the most challenging bridge restoration projects.

**Beaufort / Strand7 Pty Ltd**

Contact: Anne Delvaux
Phone: 252-504-2282
E-mail: anne@beaufort-analysis.com
Website: www.strand7.com

Beaufort Analysis, Inc. (BAI) is the distributor of the Strand7® Finite Element Analysis System in the United States. Strand7 is a general purpose finite element analysis program developed by Strand7 Pty Ltd, Sydney, Australia and is used throughout the world for the analysis of ship structures, aircraft, road and rail vehicles and a wide range of industrial products as well as for the analysis of buildings and bridges.

**BendTec, Inc.**

Contact: Wendy Meienhoff
Phone: 1-800-BendTec (236-3832)
Fax: 218-722-6598
E-mail: wendy@bendtec.com
Website: www.bendtec.com

BendTec, Inc is a LEADER in the bending, fabrication, design, and engineering of large and small piping & structural steel for structural & architectural applications. BendTec is AISC certified in compliance with Simple Steel and Major Steel Bridges, Fracture Critical Endorsement & Sophisti-cated Paint Coating Endorsement.

**Bentley Systems**

Contact: Barbara Day
Phone: 919-851-8559
Fax: 919-851-8533
E-mail: Barbara.day@bentley.com
Website: www.bentley.com

Bentley Systems, Incorporated provides software for the lifecycle of the world’s infrastructure. The company’s comprehensive portfolio for the building, plant, civil, and geospatial verticals spans architecture, engineering, construction (AEC) and operations. Bentley delivers Bridge Information Modeling (BrIM) technology for the entire bridge lifecycle. Bentley BrIM provides broad access to advanced bridge products in Bentley’s comprehensive software portfolio. Bentley products provide an interoperable, data-managed bridge solution for planning, design, engineering, analysis, fabrication, construction, maintenance, and rehabilitation. These end-to-end solutions enable the transportation industry to efficiently and effectively address the challenges of new and aging bridges and deliver sustainable, long lasting infrastructure.

**Bigge Crane and Rigging Co.**

Contact: Gedge Knopf
Phone: 510-638-8100
Fax: 510-639-4053
E-mail: gknopf@bigge.com
Website: www.bigge.com

Celebrating our 93rd anniversary, Bigge will be on hand to promote innovative, cost-effective
engineered solutions, drawing on our inventory of specialized, state-of-the-art heavy transportation and heavy lift equipment, experienced labor, professional supervision and management to make each solution a success. Based in San Leandro, Ca. Bigge operates from several locations nationwide.

**Boulderscape Inc.**

**Contact:** Paul LaChance
**Phone:** 949-661-5087
**Fax:** 949-661-3397
**E-mail:** paul@boulderscape.com
**Website:** www.boulderscape.com

Boulderscape is sculpted rock formation company that creates geological and architectural walls facing out of shotcrete. For over 20 years, their finishes have been applied to various types of retaining systems such as: sheet pile, soldier pile and soil nail wall systems. These finishes are designed for cold and hot climates alike and are more cost effective then most wall finishes of today.

**Brayman Construction Corporation**

**Contact:** Christine Simon
**Phone:** 724-443-1533
**Fax:** 724-443-8733
**E-mail:** c_simon@braymanconstruction.com
**Website:** www.braymanconstruction.com

Brayman is a full service provider of General Contracting and Specialty Geotechnical design/build solutions throughout the entire eastern United States. Capabilities include - bridges and complex structures, steel erection, lock and dam construction/repair, marine construction, demolition, excavation/drainage, specialty geotechnical solutions - micropiles, caissons, driven/drilled piles, sheet piling, augercast piles, rock/soil nailing, ground anchors/tiebacks, grouting, underpinning and more.

**Bridge design & engineering magazine**

**Contact:** Lisa Bentley
**Phone:** 44 0 207 973 4698
**Fax:** 44 0 207 973 4797
**E-mail:** l.bentley@hgluk.com
**Website:** www.bridgeweb.com

The leading magazine for the international bridge industry. Every issue of Bd&e looks at the latest news, projects reports, interviews and technical & application features from around the world. Bd&e is essential reading for anyone who finances, plans, designs, builds, maintains, operates, or owns bridges.

**Bridge Grid Flooring Manufacturers Association**

**Contact:** Mark Kaczinski
**Phone:** 877-257-5499
**Fax:** 419-257-0332
**E-mail:** bgfma@bgfma.org
**Website:** www.bgfma.org

BGfMA... this next generation Bridge Grid Flooring Manufacturers Association industry group features an expanded professional organization focused on the reliable development and application of bridge grid flooring and ExodermicM decking. The role of the association is to promote the use of grid reinforced concrete bridge decks through data collection, research/development and education.

**Bright Bridge Construction, Inc.**

**Contact:** Liu Yabin
**Phone:** 626-589-5136
**E-mail:** bright.bridge@yahoo.com
**Website:** www.bright-bridge.com

Bright Bridge Construction, Inc. (the “Company” or “Bright Bridge”) is in the business of marketing and sales of non-standard heavy duty construction equipment used in engineering fields such as railway, highway and bridge constructions. Bright Bridge markets and promotes products from its exclusive manufacturer Beijing Wowjoint Machinery, Co. (“Wowjoint”), a leader in the design, manufacturing and sales of a complete line of portable, re-locatable and stationary non-standard heavy duty construction equipment and machinery used in various engineering fields such as bridge, road and railway constructions, as well as in areas of heavy capacity lifting & transporting of concrete beams, boats, shipping containers. Wowjoint’s product line in huge machines includes Launching Gantry, Tyre Trolley, Special Carrier, Marine Hoist and Special Purpose Equipments.

**Bureau Veritas**

**Contact:** Richelle McGuire
**Phone:** 412-921-8833
**Fax:** 412-921-8836
**E-mail:** richelle.mcguire@us.bureauveritas.com
**Website:** www.us.bureauveritas.com

Bureau Veritas helps clients comply with standards and regulations relating to Quality, Health and Safety, Environment and Social Responsibility. We can assist with clients’ Quality Assurance needs during manufacture, fabrication and erection of industrial materials, engineered products, machinery and civil structures. Bureau Veritas provides inspection, testing, auditing, certification and training.

**CAE Associates Inc.**

**Contact:** Rich Grant, MBA
**Phone:** 203-758-2914
**Fax:** 203-758-2965
**E-mail:** grant@caeai.com
**Website:** www.caeai.com

CAE Associates is an engineering consulting firm and exclusive Channel Partner for Ingeciber, S.A., makers of CivilFEM, a robust finite element analysis (FEA) and design software. CivilFEM integrates seamlessly with ANSYS’ FEA software to provide the most robust nonlinear solver available in the bridge design industry. CAE Associates experienced technical staff, combined with the computing power of ANSYS and CivilFEM provides our clients with an unmatched level of capability and expertise.
1. as thin overlays (3/4 to 2 inch thickness) for a lightweight wear course, and

2. as a paving surface for orthotropic steel decks where toughness and elastic composite durability are critical.

Cleveland Electric Laboratories

Contact: Scott Brubaker
Phone: 330-425-4747
E-mail: sbrubaker@thermocouple.cc
Website: www.thermocouple.cc

CBSI is the definitive resource for engineering matters relating to cable-supported structures. In addition to consulting services, CBSI personnel design, contract for, storehouse, and supply bath custom and standard bridge strands, ropes and related structural sockets, casting and forgings. We are driven by a determination to provide each client with the finest products and services available today. We know the excellence of our work is our most important asset.

Cleveland Electric Laboratories

Contact: Scott Brubaker
Phone: 330-425-4747
E-mail: sbrubaker@thermocouple.cc
Website: www.thermocouple.cc

CBSI is the definitive resource for engineering matters relating to cable-supported structures. In addition to consulting services, CBSI personnel design, contract for, storehouse, and supply bath custom and standard bridge strands, ropes and related structural sockets, casting and forgings. We are driven by a determination to provide each client with the finest products and services available today. We know the excellence of our work is our most important asset.

Campbell Scientific, Inc.

Contact: Kent Stevens
Phone: 435-753-2342
Fax: 435-750-9540
E-mail: kstevens@campbellsci.com
Website: www.campbellsci.com

We are driven by a determination to provide each client with the finest products and services available today. We know the excellence of our work is our most important asset.

Campbell Scientific, Inc.

Contact: Kent Stevens
Phone: 435-753-2342
Fax: 435-750-9540
E-mail: kstevens@campbellsci.com
Website: www.campbellsci.com

We are driven by a determination to provide each client with the finest products and services available today. We know the excellence of our work is our most important asset.

Chase Construction Products

Contact: Doug Zuberer
Phone: 330-425-4747
Fax: 330-425-4747
E-mail: dzuberer@chasecorp.com
Website: www.chaseconstructionproducts.com

Chase Construction Products manufactures custom fabricated products to meet the construction industry’s ever changing requirements for water, corrosion and wear protection. Chase is a technically supported and quality assured resource for waterproofing sealants, expansion joint systems and accessories. Our Capitol Services, E-pony Engineered Materials and Ruyton brands of innovative products have been specified for use on major projects in the transportation, industrial and architectural markets.

Chase Construction Products

Contact: Doug Zuberer
Phone: 330-425-4747
Fax: 330-425-4747
E-mail: dzuberer@chasecorp.com
Website: www.chaseconstructionproducts.com

Chase Construction Products manufactures custom fabricated products to meet the construction industry’s ever changing requirements for water, corrosion and wear protection. Chase is a technically supported and quality assured resource for waterproofing sealants, expansion joint systems and accessories. Our Capitol Services, E-pony Engineered Materials and Ruyton brands of innovative products have been specified for use on major projects in the transportation, industrial and architectural markets.

ChemCo Systems

Contact: John Bors
Phone: 650-261-3790
Fax: 650-261-3790
E-mail: bors@chemcosystems.com
Website: www.chemcosystems.com

Epoxyma by ChemCo Systems has a 40-year history as a bridge deck surfacing. Most common applications are:

1. as thin overlays (3/4 to 2 inch thickness) for a lightweight wear course, and
D’Appolonia Engineering....................................................Booth: 307
Contact:  Dave Leitze
Phone: 412-856-9440
Fax: 412-856-9535
E-mail: dcleitze@dappolonia.com
Website: www.dappolonia.com
D’Appolonia provides civil, geotechnical and environmental engineering analysis and design services for infrastructure and transportation systems. The firm’s areas of specialization include

Dynamic Surface Applications, Ltd (DSA) .........................Booth: 537
Contact:  Mike Stachowicz
Phone: 570-546-6041
Fax: 570-546-2415
E-mail: mstachowicz@DSA-LTD.com
Website: www.dsa-ltd.com

Dynamic Surface Applications, Ltd (DSA) is the manufacturer of the Thermo-Joint® asphaltic plug joint system and the installer of a variety of maintenance and safety products including Thermo-Joint and the Imprint® surfacing system.

Cyro / Evonik Industries....................................................Booth: 120
Contact:  Eric Humphries
Phone: 207-490-4384
Fax: 860-873-8642
E-mail: eric.humphries@evonik.com
Website: www.paraglassoundstop.com

CYRO/Evonik Industries offers transparent PARAGLAS SOUNDFRONT Noise Barrier Sheet, the aesthetic solution for noise control. PARAGLAS SOUNDFRONT TL-4 System is a lightweight safety / noise barrier system for bridges and elevated roadway applications. It has been successfully tested under NCHRP 350 Test Level 4 conditions and has been approved for use as an attachment to a crashworthy barrier by the FHWA. CYRO Industries is a wholly-owned subsidiary of Evonik Degussa Corporation.

CTLGroup.................................................................Booth: 726
Contact:  Adrian Ciolko
Phone: 800-522-2285, x3054
Fax: 847-965-6541
E-mail: aciolko@ctlgroup.com
Website: www.ctlgroup.com

CTLGroup provides engineering, construction technology consulting, and testing solutions. Refined diagnostic tools and laboratory resources enable CTLGroup to:
- Inspect, monitor, and assess the condition of structures
- Design and specify methods to extend the life of structures
- Test and enhance construction quality
- Conduct failure and forensic analyses
- Conceive and evaluate new construction products and systems

DeAngelo Brothers, Inc. ....................................................Booth: 740
Contact:  Fred Grant
Phone: 570-459-5800
Fax: 570-459-5500
E-mail: fgrant@dbservices.com
Website: www.dbservices.com

We are your resource for industrial service solutions for federal, state and local governments, DOT’s, railroads and industries throughout North America. Our Cleaning Management services include bridge cleaning, street sweeping, graffiti removal, tunnel washing and high-pressure cleaning. We also provide total Asset Management for contracts which include multiple maintenance services.

Deery American Corporation............................................Booth: 100
Contact:  Mike Delli
Phone: 800-227-4059 or 970-858-3678
Fax: 970-858-3679
E-mail: info@deeryamerican.com
Website: www.deeryamerican.com

Deery American Corporation is a manufacturer and distributor of the FlexAble Bridge Joint System, mastic deck repair products in black or gray, waterproofing membranes and crack and joint sealants.

DGI Menard .................................................................Booth: 414
Contact:  Cindy Fuller
Phone: 412-257-2750
Fax: 412-257-2717
E-mail: cliuller@dgi-menard.com
Website: www.dgi-menard.com

DGI-Menard is a ground improvement specialty subcontractor. We offer economical and sustainable design/build ground improvement solutions for roadways and bridges, culverts, embankments and approaches, buildings, warehouses and heavy industrial structures. Our technologies include Controlled Modulus Columns (CMCs), Wick Drains, Dynamic Compaction, Menard Vacuum Consolidation, and Vibro Technologies.
Earthquake Protection Systems, Inc. .................Booth: 817
Contact: Anoop Mokha
Phone: 707-644-5993
Fax: 707-644-5995
E-mail: anoop@earthquakeprotection.com
Website: www.earthquakeprotection.com
Earthquake Protection Systems is the world’s leading manufacturer of seismic isolation bearings. Our Friction Pendulum bearings are used in the world’s largest and most critical isolation applications. The new Triple Pendulum bearing provides the best seismic performance available in seismic isolation at a lower installed cost.

Enerpac .................................................................Booth: 735
Contact: Patrick Gengler
Phone: 414-247-5333
Fax: 262-781-1028
E-mail: patrick.gengler@enerpac.com
Website: www.enerpac.com
Enerpac, the global leader in high force hydraulic solutions, is exhibiting integrated systems for bridge building and rehabilitation. Whether you are constructing a signature bridge across a deep valley or lifting a national landmark for seismic retrofit, we will supply the high-force hydraulic solutions you need. Enerpac’s broad line of standard and customized products offers the benefits of safety and efficiency to applications where high forces are required to get the job done.

Epoxy Interest Group of CRSI ...............................Booth: 400
Contact: David McDonald, Managing Director
Phone: 847-517-1200
Fax: 847-517-1206
E-mail: info@epoxyinterestgroup.org
Website: www.epoxyinterestgroup.org
Established in 2007, The Epoxy Interest Group (EIG) was formed to promote the use and advance the quality of epoxy-coated reinforcing steel. A special interest group of the Concrete Reinforcing Steel Institute, the EIG produces materials to promote, educate and support the use of epoxy-coated rebars in concrete construction.

Erdman Anthony ..................................................Booth: 829
Contact: Bernie Zimmovan
Phone: 412-494-0505
Fax: 412-494-0707
E-mail: zimmovanb@erdmananthony.com
Website: www.erdmananthony.com
Erdman Anthony has provided bridge engineering for more than 50 years to major transportation agencies throughout the eastern United States. We offer a full range of services, including structural design, highway design, H&H design, and railroad coordination. Overall, our core businesses include transportation, civil, facilities, geospatial, and construction services.

Figg Engineering Group ........................................Booth: 734
Contact: Linda Figg
Phone: 850-224-7400
Fax: 850-224-5428
E-mail: llfgg@figgbridge.com
Website: www.figgbridge.com
FIGG specializes in bridge design and construction engineering and management. Celebrating over 30 years of Creating Bridges as Art® for our customers with more than 300 awards for innovation, economy and aesthetics. Our focus on bridges allows us to create landmarks that incorporate function, sustainable design and beauty to enhance the quality of life for communities across America.
Pittsburgh methods (Calibrated Wrench, DTI, TC Bolts & Turn of Nut.) G.W.Y. sells, rents, services and carries tools. G.W.Y. has a full line of electric wrenches and hand wrenches for all installation needs. G.W.Y., Inc. is North America’s largest supplier of both Tone and Makita structural bolt installation tools. G.W.Y. sells, rents, services and carries an extensive inventory of tools and parts. G.W.Y.’s consulting staff is known for its ability to solve bolting problems both in-house and at the job site.

Freyssinet, Inc. .............................................................Booth: 418
Contact: Andrew Nicklas
Phone: 703-378-2500
Fax: 703-378-2700
E-mail: Draw.Nicklas@freyssinetusa.com
Website: www.freyssinetusa.com
Freyssinet offers value added products and services to the civil engineering industry including: Multi-Strand and Thread Bar Post-tensioning Systems, Stay Cable Systems, Suspension Bridge Cables and Hangers, Expansion Joints, Bearings; Structural Dampers & Seismic Devices, Structural Repair/Strengthening, Barrier Cables, Monitoring Systems & Services, Heavy Lifting / Moving.

Fyfe Company LLC .....................................................Booth: 302
Contact: Julio Sanchez
Phone: 858-642-0694
Fax: 858-444-2982
E-mail: julio@fyfeco.com
Website: www.fyfeco.com
“Fyfe Company specializes in Tyfo® Fibrwrap® Systems for strengthening, protection and repair of structures. These systems are comprised of carbon, glass, and aramid fiber-reinforced polymer materials. Fyfe Company provides innovative products and personalized technical support to meet the needs of engineers, contractors and owners in the most efficient, cost-effective manner.”

Fynite Solutions & Clark Testing Group............................Booth: 402
Contact: Sharon Reagin
Phone: 412-387-1001
Fax: 412-387-1027
E-mail: sreagin@clocklabsllc.com
Website: www.clarktestinggroup.com
Clark Testing Services has been in the Powertrain testing business for over 50 years. Over that time CTS has tested products ranging from small components such as starters and air motors to transmissions and axles in excess of 2000 horsepower.

G.W.Y., Inc.................................................................Booth: 811
Contact: Gene Mitchell
Phone: 603-547-3800
Fax: 603-547-3801
E-mail: gwynne@gwyninc.mv.com
Website: www.gwyninc.com
G.W.Y., Inc. is North America’s largest supplier of both Tone and Makita structural bolt installation tools. G.W.Y. has a full line of electric wrenches and hand wrenches for all installation methods (Calibrated Wrench, DTI, TC Bolts & Turn of Nut.) G.W.Y. sells, rents, services and carries

Greenman-Pedersen, Inc/Instrument Sales, Inc.  ............Booth: 700
Contact: Pat Marazzi
Phone: 722-337-3080
Fax: 722-337-0294
E-mail: pmarazzi@gpinet.com
Website: www.sgpinstrumentsales.com
Greenman-Pedersen, Inc. is a top national engineering/architectural design and construction firm involved on major projects throughout the U.S. and overseas since 1966. Provides many multi-discipline services to various industries. Instrument Sales, Inc. a GPI Company specializes in corrosion instruments and other equipment plus safety equipment. Underwater Engineering Services a GPI Company specializes in power plant maintenance and marine construction. Acquired in 2006 CC&L a (new) GPI Company specializes in expert witness testimony, coating conditions survey, including a full service laboratory.

Greenstone Inc. of Delaware .........................................Booth: 205
Contact: Sal Miwa
Phone: 201-616-0200
Fax: 646-304-2439
E-mail: sal.miwa@egreenstone.com
Website: www.egreenstone.com
Greenstone Inc. is a GREEN building material company, manufacturing and distributing green products for the building and construction industry. Greenstone will be exhibiting Magneline, a multi-purpose polymer cement mortar used for seismic retrofit of bridge piers and decks. Magneline can also be used for concrete repair and as anti-corrosion coating.

Haron Corporation ......................................................Booth: 534
Contact: Harry Stoltzfus
Phone: 717-687-9294
Fax: 717-687-9296
E-mail: harry@harconcorp.com
Website: www.harconcorp.com
Haron Corporation provides Bucket Boats, Bridge Trackers and rigging services on bridge inspection and repair projects. Since 1988, we’ve eliminated the need for lane closures and track time on thousands of structures nationwide.

Hardesty & Hanover, LLP ..............................................Booth: 701
Contact: Hank C. Pokigo
Phone: 410-573-1999
Fax: 410-573-0650
E-mail: hpokigo@hardesty-hanover.com
Website: www.harconcorp.com
Hardesty & Hanover, a world renowned bridge engineering firm, boosts 120 years of experience in engineering enduring structures. From conceptual design through construction inspection, Hardesty & Hanover projects include major bridges, highways, expressways, and heavy movable structures. We offer clients great customer service and projects that end on-time and under budget.
Hayward Baker Inc.................................................................Booth: 231
Contact:  Greg Simmons
Phone:  410-551-1980
Fax:  410-551-8206
E-mail:  gsimpkins@haywardbaker.com
Website:  haywardbaker.com

Hayward Baker Inc. is the leading geotechnical construction contractor in North America, providing the complete range of ground improvement services. As a member of the worldwide group of Keller companies, Hayward Baker Inc. is committed to providing the most economical and technically correct geotechnical solutions for planned and existing bridges. Ranked #1 Specialty Foundation Contractor by Engineering News-Record, year after year.

High Steel Structures, Inc. ...........................................Booth: 206
Contact:  Steven Bussanmas
Phone:  717-390-4270
Fax:  717-399-4102
E-mail:  sbussanmas@high.net
Website:  www.highsteel.com

High Steel Structures has been delivering quality to its customers for over 75 years. Founded in 1931, High Steel is one of the largest fabricators of bridge structural steel in the United States, with more than one million tons of bridge steel fabricated over the past 20 years.

Hill & Smith Inc.................................................................Booths: 215/217
Contact:  Gary Lallo
Phone:  614-340-6294
Fax:  614-340-6294
E-mail:  gary.lallo@hillandsmith.com
Website:  www.hillandsmith.com

Manufacturer of permanent and portable steel barriers

Hilman Rollers .................................................................Booth: 413
Contact:  Jeff Hill
Phone:  732-462-6277
Fax:  732-462-6355
E-mail:  sales@hilmanrollers.com
Website:  www.hilmanrollers.com

Hilman Rollers are an essential component for bridge construction projects. Whether used in the casting yard, built into segment launching equipment, moving entire bridge spans, or placing large castings - whatever the heavy load moving task - Hilman Rollers are the right tool to get the job done quickly, efficiently, and safely.

HTNB Corporation............................................................Booth: 827
Contact:  Yassmin Gramian, P.E.
Phone:  215-568-6500
Fax:  215-568-4455
E-mail:  yggramian@htnb.com
Website:  www.htnb.com

HTNB was founded in 1914 with a strong focus on long-span and complex bridge inspection, design and rehabilitation. Today, more than 3,600 employees and 63 design offices nationwide continue this proud tradition as we provide comprehensive engineering, architecture and planning services to clients throughout the United States.

InspectTech ..........................................................................Booth: 535
Contact:  Jeremy Shaffer, Ph.D.
Phone:  412-681-1521
Fax:  412-682-3068
E-mail:  shaffer@inspecttech.com
Website:  www.inspecttech.com

InspectTech provides easy to use software solutions that streamline the inspection process from onsite to back-office. The BridgeInspect software suite can be quickly customized for each client and offers significant time-savings to inspectors and managers. The bridge inventory and management software includes cost estimates, GIS interface, full searching, custom reports, maintenance, and scheduling modules. The standalone inspection software significantly enhances the inspection process through customized forms with pick lists, coding manuals, and digital picture integration. InspectTech works with governments, private owners, and engineering consulting companies to meet their specific software needs.

Hydro-Technologies, Inc. .........................................................Booth: 222
Contact:  Edward Liberati
Phone:  614-850-1425
Fax:  614-850-1427
E-mail:  eliberati@hughesgrp.com
Website:  www.hydro-technologies.com

Hydro-Technologies, Inc. is the most experienced hydrodemolition company in North America. Our expertise is the selective removal of reinforced concrete using computer-controlled “high pressure water jet” robots. Our company specializes in the rehabilitation of the following type’s reinforced concrete structures: Bridges, Parking garages, Tunnels, Plants, Dams. We understand what is important to the Owners and Contractors. Bridge deck preservation is necessary to keep our nation’s roadway service in service. We have developed the Fast Track Hydro-Demolition Bridge Deck Overlay Method™ which is used by many Highway Departments and Contractor’s as the fastest and most economical construction method to repair and preserve bridge decks. The service life of bridge decks are extended by 25 years when this method is used with minimum disruption to traffic.

HRV Conformance Verification Associates, Inc. ....................Booth: 505
Contact:  Sheena Hoover
Phone:  412-788-2522
Fax:  412-788-1697
E-mail:  shoever@hrvinc.com
Website:  www.hrvinc.com

HRV provides a comprehensive range of services worldwide in materials and construction inspection, including steel, concrete, coatings, mechanical, and electrical. Serving the public and private sector, HRV is a leader in quality assurance, engineering consulting and expediting for the bridge/highway, water/wastewater, power, pressure vessel and commercial construction markets.

Houston Structures ...............................................................Booth: 207
Contact:  Mike Ulven
Phone:  503-651-3174
Fax:  503-651-1176
E-mail:  muk@ulvencompanies.com
Website:  www.ulvencompanies.com

Houston Structures Incorporated is a supplier of specialty forged, cast, machined and fabricated structural support products for the infrastructure industry. Located in Oregon, Houston Structures products supplied include open and closed wire rope and strand sockets, wire rope and strand assemblies, open and closed bridge sockets, anchor sockets, turnbuckles, and specialized cable castings and forgings.

HRV provides a comprehensive range of services worldwide in materials and construction inspection, including steel, concrete, coatings, mechanical, and electrical. Serving the public and private sector, HRV is a leader in quality assurance, engineering consulting and expediting for the bridge/highway, water/wastewater, power, pressure vessel and commercial construction markets.

Hill & Smith Inc.................................................................Booths: 215/217
Contact:  Gary Lallo
Phone:  614-340-6294
Fax:  614-340-6294
E-mail:  gary.lallo@hillandsmith.com
Website:  www.hillandsmith.com

Manufacturer of permanent and portable steel barriers

Hilman Rollers .................................................................Booth: 413
Contact:  Jeff Hill
Phone:  732-462-6277
Fax:  732-462-6355
E-mail:  sales@hilmanrollers.com
Website:  www.hilmanrollers.com

Hilman Rollers are an essential component for bridge construction projects. Whether used in the casting yard, built into segment launching equipment, moving entire bridge spans, or placing large castings - whatever the heavy load moving task - Hilman Rollers are the right tool to get the job done quickly, efficiently, and safely.

HTNB Corporation............................................................Booth: 827
Contact:  Yassmin Gramian, P.E.
Phone:  215-568-6500
Fax:  215-568-4455
E-mail:  yggramian@htnb.com
Website:  www.htnb.com

HTNB was founded in 1914 with a strong focus on long-span and complex bridge inspection, design and rehabilitation. Today, more than 3,600 employees and 63 design offices nationwide continue this proud tradition as we provide comprehensive engineering, architecture and planning services to clients throughout the United States.
Insulfoam LLC.................................................................Booth: 330
Contact:  Nico Satmuller
Phone:  253-597-8140
Fax:  253-383-7100
E-mail:  njackson@insulfoam.com
Website:  www.insulfoam.com
Insulfoam, one of the most respected names in polystyrene-based construction products is now even better. In May of 2007, Carlisle Construction Materials, a company known for its single-ply roof systems and waterproofing products, further broadened its product offering by acquiring Insulfoam, the largest manufacturer of expanded polystyrene (EPS) in North America. The Insulfoam acquisition confirms Carlisle’s overall commitment to architects, building owners and contractors who want to promote and utilize energy-efficient construction products.

Jancy Engineering, Inc. ..................................................Booth: 424
Contact:  Myra Mitchell
Phone:  563-391-1300 x227
Fax:  563-391-2323
E-mail:  mmitchell@jancy.com
Website:  www.jancy.com
Jancy Engineering Inc., founded in 1957, is the market leader in the design, manufacture and sales of portable magnetic based drill presses, “Slugger” annular cutters, portable metal cutting circular saws, and the marketing of associated metal working equipment. “Slugger” is the most recognized brand, worldwide, of annular cutters and drills.

Klaas Coatings (NA) LLC.................................................Booth: 828
Contact:  Nelson R. Toney
Phone:  412-287-5508
E-mail:  nelson@expresspolymersinc.com
Website:  klaascoatings-northamerica.com
Klaas Coatings is the market leader in Silicone Resin coating system for construction in Australia. Our products deliver the longest possible re-paint interval which saves costs over the long term.

KTA-Tator, Inc. .................................................................Booth: 718
Contact:  Scott Rice
Phone:  412-788-1300
Fax:  412-788-1306
E-mail:  sirice@kta.com
Website:  www.kta.com
KTA-Tator, Inc. (KTA) is a consulting engineering firm founded in 1949. KTA provides coating consulting and construction inspection services, steel fabrication inspection services, laboratory testing and coating failure analysis, and distributes inspection and monitoring equipment. An independent and unbiased philosophy has permitted KTA to provide expert professional services to its clients for 60 years.

LARSA Inc.....................................................................Booth: 714
Contact:  Ali Karakoplan
Phone:  212-736-4326
Fax:  631-249-3089
E-mail:  info@larsa4d.com
Website:  www.larsa4d.com
LARSA 4D analysis and design software addresses the specialized needs of segmental, cable, curved and other types of bridge structures. Staged construction with 3D nonlinearity and “4D” time effects provide a solid basis for advanced solutions. The LARSA 4D Section Composer creates a platform for nonprismatic sections and composite construction. A dedication to providing unbeatable support services makes LARSA 4D a standard in leading U.S. firms for bridge design and construction analysis by working closely with its clients on a variety of projects.

Lehigh University - ATLSS Research Center....................Booth: 428
Contact:  Chad Kusko
Phone:  610-758-5299
Fax:  610-758-5902
E-mail:  chau205@lehigh.edu
Website:  www.atlss.lehigh.edu
The Center for Advanced Technology for Large Structural Systems (ATLSS) was established in 1986, and is Lehigh’s internationally respected center for engineering research and education addressing the civil and marine infrastructure for Pennsylvania and the nation. This mission includes Pennsylvania’s bridge and highway structures, and the contributions of research, education and technology transfer to enhancing their design and performance. ATLSS has extensive experience in laboratory and field instrumentation, testing, and fatigue and strength evaluation of bridges.

Loadtest, Inc. ..................................................................Booth: 711
Contact:  John Hayes
Phone:  352-378-3717
Fax:  352-378-3934
E-mail:  john@loadtest.com
Website:  www.loadtest.com
Loadtest, Inc. specializes in deep foundation testing using the award winning Osterberg Cell method. Loadtest offers Osterberg cell testing equipment, installation services as well as full planning & specification support, field load testing and analytical services.

LUSAS .............................................................................Booth: 210
Contact:  Terry Cakebread
Phone:  1-800-97-LUSAS (ext. 1)
Fax:  212-295-2121
E-mail:  terry.cakebread@lusas.com
Website:  www.lusas.com
Use LUSAS Bridge software for all your frequency, seismic, dynamic, nonlinear, buckling and fatigue analysis. Staged construction, creep modeling, prestress / post-tensioning and curved girder analysis is supported. A vehicle load optimization facility simplifies worst-case loading patterns. AASHTO and other design codes supported. Extensive results processing facilities are provided.

Maguire Group Inc.........................................................Booth: 725
Contact:  Louis D. Rocchini, P.E.
Phone:  412 322-8340
Fax:  412 322-2138
E-mail:  lrocchini@maguiregroup.com
Website:  www.maguiregroup.com
Maguire Group was founded in 1938 and has grown to become one of the nation’s leading architectural, engineering and planning firms. With over 200 professionals and support staff located throughout the Northeast/Mid-Atlantic and Florida, Maguire provides a full complement of services. Maguire’s transportation solutions provide immediate benefits and flexibility to handle tomorrow’s transportation growth and innovations. Maguire is proud of its reputation that is a clear manifestation of the quality of our work, the experience and expertise of our staff, the creativity of our transportation solutions, and our responsiveness to clients needs. Our responsiveness, innovation, and creativity is demonstrated in our NASTO award winning Providence River Bridge, as well as the multitude of projects we have undertaken throughout the years.
Marion Hill Associates, Inc...............Booth: 713
Contact: Jeffrey Thomas
Phone: 724-847-3390
Fax: 724-847-1798
E-mail: jthomas@marionhilldivers.com
Website: www.marionhilldivers.com
Marion Hill Associates, Inc. (MHA) specializes in commercial diving, and marine construction projects. MHA has worked throughout the United States since 1980 and has been involved extensively in the cooperative effort of divers, construction teams, and aquatic biologists, providing quality service and performance in this highly specialized field. The MHA team routinely handles unique problems that are encountered in the underwater construction environment.

MATECH Corp ..................Booth: 328
Contact: Marybeth Miceli
Phone: 310-206-5589
Fax: 310-473-3177
E-mail: matech@motechcorp.com
Website: www.motechcorp.com
MATECH Corp develops metal fatigue measurement & monitoring technologies. MATECH’s “Electrochemical Fatigue Sensor” (EFS) System helps owners more effectively 1. prioritize repairs to crack which are actively growing; 2. determine whether growing cracks exist on their bridges; and 3. verify the efficacy of repairs and retrofits, immediately and prior to widespread implementation.

McClain & Co., Inc..................Booth: 722
Contact: Valerie Ellington
Phone: 540-423-1110
Fax: 540-423-1066
E-mail: sales@mcclainandcompany.com
Website: www.mcclainandcompany.com
Underbridge Access Equipment Rentals, Truck Mounted Aerial Platforms & Certified Traffic Control. Over 35 units including A-75’s, UB-60’s, Mark IV Snoopers, UB-50’s, Bridgemasters, variety of 40’ Platform & Bucket Snoopers, UB-30 rail-mounting unit, small & large Moog Platforms ranging 24’ - 70’. Hi-Reach & Bucket Trucks 27-90’. Certified Operators, innovative audio/visual system for added safety, ANSI certified units.

MDX Software ..................Booth: 506
Contact: Chris Doony
Phone: 573-446-3221
Fax: 573-446-3278
E-mail: support@mdxsoftware.com
Website: www.mdxsoftware.com
Developer of curved and straight steel bridge design and rating software for AASHTO ASD, LFD, and LRFD.

Michael Baker Jr., Inc...............Booth: 419
Contact: Jeffrey J. Campbell
Phone: 412-249-7948
Fax: 412-375-3998
E-mail: jcampbell@mabakercorp.com
Website: www.mabakercorp.com
Bridges are complex components of our transportation infrastructure. The planning, design, construction and maintenance of these integral structures require experience, innovative approaches, and reliable project delivery—all aspects of Baker’s value-based bridge services. Baker—Creating value by delivering innovative and sustainable solutions for infrastructure and the environment.

Michelman - Cancelliere Iron Works ..............Booth: 736
Contact: Eric Michelman
Phone: 610-837-9914
Fax: 610-837-7999
E-mail: ericm@mcironworks.com
Website: www.mcironworks.com
Michelman - Cancelliere Iron Works specializes in custom steel plate and intricate fabricated steel solutions.

MISTRAS Group, Inc..................Booth: 322
Contact: Richard Gostautas
Phone: 609-716-4000
Fax: 609-716-4179
E-mail: sales@pac.ndt.com
Website: www.mistrasgroup.com
MISTRAS Software & Systems designs and manufactures acoustic emission sensors and acoustic emission measurement instruments under a quality program which is certified to ISO-9001 standards. Acoustic emission research is offered at the advanced basic level, with the company currently active on several commercial industrial and government applied research contracts. Their R&D division is collaborating with universities and industry for advancing AE sensor technology.

Monotube Pile Corporation .................Booth: 605
Contact: Scott Udelhoven
Phone: 330-454-6111
Fax: 330-454-1572
E-mail: monotube@raex.com
Website: www.monotube.com
End-driven longitudinally fluted steel shell for friction bearing applications available in a variety of diameters and tapers with engineering support for your project needs.

National Steel Bridge Alliance...............Booth: 415
Contact: Jody Lovsness
Phone: 402-758-9099
Fax: 402-778-9499
E-mail: lovsness@steelbridges.org
Website: www.steelbridges.org
The National Steel Bridge Alliance is organized and dedicated to better serve our customers and members with state-of-the-art design and construction of steel bridges. We are a unified industry organization of businesses and agencies interested in the development, promotion and construction of cost effective steel bridges.

NDT Corporation ..................Booth: 312
Contact: Paul Fisk
Phone: 508-754-0417
Fax: 508-754-0418
E-mail: paul.fisk@ndtcorporation.com
Website: www.ndtcorporation.com
NDT Corporation provides nondestructive and geophysical testing services for civil engineering projects. Our experience includes over 400 projects throughout the United States and Caribbean. Geophysical methods are used to characterize soil and bedrock conditions for bridge scour, seismic retrofit and other foundation studies. Nondestructive testing methods are used to determine the condition of bridge decks, piers and abutments as well as assessing post tensioning ducts for great voids.
Non-Destructive Testing Services .................................Booth: 724

Contact: Mike Forbes
Phone: 616-891-3570
Fax: 616-891-3565
E-mail: mforbes@ndtg.net
Website: www.nondestructivetesting.com

Non Destructive Testing Services provides bridge fabrication inspections for steel and concrete prestressed bridges, NDT inspections on existing bridges, and bridge paint inspections. NDTS has developed and performs a complete sign structure inspection program. NDTS’s mechanical laboratory provides weld procedure qualifications, bridge bearing pad testing, and numerous other testing services.

North American Galvanizing Co. ....................................Booth: 324

Contact: Mike Stroia
Phone: 330-327-2080
E-mail: mstroia@nagalv.com
Website: www.nagalv.com

The Company’s galvanizing and coating operations are composed of ten facilities located in Colorado, Kentucky, Missouri, Ohio, Oklahoma, Tennessee, and Texas. In addition, the Company is constructing a new hot dip galvanizing plant in Benwood, West Virginia which is expected to be operational in late April, 2009.

NX Infrastructure ..........................................................Booth: 219

Contact: Seth Fischer
Phone: 888-692-5231
E-mail: info@nxinfrastructure.com
Website: www.nxinfrastructure.com

NX Infrastructure manufactures NX-SCR™, a carbon steel core rebar product clad with a stainless steel outer layer; and NX-SCD™, a stainless clad dowel bar. Both products possess corrosion resistance equivalent to solid stainless steel and Grade 60 equivalent mechanical properties. They offer the lowest life cycle cost in the industry.

Olson Engineering, Inc. ...............................................Booth: 214

Contact: Eugenia Roman
Phone: 201-933-8777
Fax: 201-933-8050
E-mail: eroman@olsonengineering.com
Website: wwwolsonengineering.com

Olson Engineering, Inc. has provided state of the art non-destructive testing and evaluation services since 1985. Our continuous involvement in the NDT industry has enabled us to offer our clients the full range of testing techniques in order to assess the internal condition of existing structures and roadways.

OSMOS-USA ............................................................Booth: 602

Contact: John F. Graham, Jr. P.E.
Phone: 412-977-1999
E-mail: fgraham@osmosusa.com
Website: www.osmosusa.com

OSMOS USA is a Structural Health Monitoring Company for bridges, buildings, dams, towers, Railroads, etc. We provide continuous readings on your monitor using a web-base system at the site. We also provide warning and then alarms so that observation need only be done when an event takes place.
within the cast parameter of the project.

Polycoat is a market leader within the product areas of focus. A leader in urethane adhesive systems and corrosion resistant primers for many years. Additionally, we are the technology leader in cationic chemistry. Much of our new product development is based on new proprietary advanced materials, catalysts, and associated formulations that deliver unsurpassed functionality. In these endeavors we focus on new level manufacturing and interconnect assembly incorporating both electronic and optical packaging material. Additionally, we have developed novel 100% solid coating formulations for the coil coating industry that allows for the elimination of solvent based coating. Polycoat provides contract manufacturing services of resins, prepolymer, adhesives, and related components for diverse companies including Fortune Fifty corporations.

Portland Cement Association .............................................Booth: 728
Contact: Susan N. Lane
Phone: 202-408-9494
Fax: 202-408-0877
E-mail: slane@cement.org
Website: www.cement.org
Where cement and concrete are concerned, so is the Portland Cement Association: in manufacturing, in raising the quality of construction, in improving our product and its uses, in contributing to a better environment. In practice, this mandate means well-rounded programs of market development, education, research, technical services, and government affairs on behalf of PCA members-cement companies in the United States and Canada.

Power Team .................................................................Booth: 306
Contact: Rick Swansbro
Phone: 815-873-3868
Fax: 815-873-3391
E-mail: rick.swansbro@fluidpower.spx.com
Website: www.powerteam.com
POWER TEAM is a world leader in hydraulic special service tools and equipment for global construction markets. We manufacture precision quality high pressure hydraulic products including pumps, jacking cylinders/rams, post tension jacks, and valves. Products are sold through a worldwide network of stocking industrial distributors.

Prestressed Concrete Association of Pennsylvania ...........Booth: 716
Contact: Heinrich O. Borststedt
Phone: 610-395-2388
Fax: 610-395-8478
E-mail: borststedt@pcap.org
Website: www.pcap.org
The Prestressed Concrete Association of Pennsylvania is a non-profit industry organization of prestressed concrete bridge beam manufacturers approved by the Pennsylvania Department of Transportation as a material source and located in the Commonwealth of Pennsylvania.

Pro-Bel Group of Companies .................................................Booth: 235
Contact: Gerry Lachapelle
Phone: 800-461-0575
Fax: 905-427-2545
E-mail: gerryl@pro-bel.ca
Website: www.pro-bel.ca
Pro-Bel Group of Companies and Sky Man International Supply Bath Standard, custom and engineered solution for any rigging requirements for bridge work. Permanent installation of gantries, horizontal and vertical cable restraint, harness, lanyards, safety audits and training can also be offered.
Remote Access Technology ..................................................Booth: 729
Contact: Michel Okoh
Phone: 902-488-4405
E-mail: michel@rat.ca
Website: www.rat.ca
Remote Access Technology is North America’s premier (Rope Access) Inspection, Maintenance and Repair Service Contractor. Also known as RAT, Remote Access Technology has been servicing the Transportation (Bridge) sector for over 14 years and has been involved in various bridge rehabilitation and mega construction projects such as the iconic Confederation Bridge located in PEI Canada. The true benefits of Rope Access are realized when the cost to access the bridge is disproportionate to the inspection or repairs. Our integrated mechanism for difficult access and service delivery serves to reduce downtime, mitigate critical path work & provide asset integrity management solutions where it makes good business sense. Through the utilization of composite teams made up of multi-discipline IRATA & SPRAT certified technicians, we can achieve more with less. For more information about our services visit us at: http://www.rat.ca/services/transportation/

Richard Goettle, Inc .........................................................Booth: 830
Contact: Ralph Pagone
Phone: 412-635-7155
Fax: 412-635-7156
E-mail: goettlejr@aol.com or rpagone@goettle.com
Website: www.goettle.com
Design/Build specialty deep foundation and retaining wall contractor, specializing in various cof-ferdams, sharing systems, and deep foundation designs for bridges, power plants, and buildings.

Roads & Bridges Magazine ..............................................Booth: 314
Contact: Rick Schwer
Phone: 847-391-1000
Fax: 847-390-0408
E-mail: rschwer@sgcmail.com
Website: www.roadsbridges.com
As the leading monthly trade publication for the transportation construction market, Roads & Bridges Magazine reaches over 60,000 engineers, contractors, DOT and other public officials (local, county, state & federal). Our readers design, build and maintain the roads, highways, bridges, and viaducts across the US and Canada.

Roctest, LTD .........................................................................Booth: 730
Contact: Jean Archaubault
Phone: 450-445-1113
Fax: 450-445-1938
E-mail: jarchaubault@roctest.com
Website: www.roctest.com
Roctest designs, manufactures and markets sensors and high-precision measuring instruments for the civil engineering market and applications in the energy, healthcare and process control industries. We are recognized for our leading-edge technology, the quality of our technical expertise and our product development capabilities for challenging and demanding environments.
Sherwin-Williams ................................................................. Booth: 310
Contact: Customer Service
Phone: 800-524-5979
Fax: 440-826-1989
E-mail: shewin@ultleads.com
Website: www.sherwin-williams.com/protective
Sherwin-Williams Protective and Marine Coatings group serves North America with a broad line of high-performance coatings, comprehensive technical service and the industry’s largest distribution system. We can assist in product specification, corrosion control and development of maintenance programs that can add years to the service lives of bridge and highway applications.

Shotblast, Inc. ................................................................. Booth: 741
Contact: Tom Rupnicki
Phone: 610-494-1330
Fax: 610-494-1870
E-mail: tom@shotblast.com
Website: www.shotblast.com
Shotblast, Inc. provides the following concrete preparation services: Shotblasting, Scarifying, Diamond Grinding. Shotblasting provides superior adhesion for concrete and polymer overlays on bridge deck surfaces.

Sika Corporation ............................................................. Booth: 603
Contact: David White, P.E.
Phone: 201-933-8800 ext. 6678
Fax: 201-933-6205
E-mail: white.d@Sika-corp.com
Website: www.sikaconstruction.com
Sika Corporation Construction Products Division, Lyndhurst, NJ, is a technology leader with over 90 years of experience in concrete materials and restoration technology. Sika’s product line includes concrete admixtures, sealants, adhesives, total corrosion management products, specialty mortars, epoxy resins, structural strengthening systems, grouts, protective coatings and industrial flooring.

Silica Fume Association .................................................... Booth: 434
Contact: Tony Kojundic
Phone: 412-299-7229
Fax: 412-299-7238
E-mail: tony@silicafume.org
Website: www.silicafume.org
The Silica Fume Association, through a cooperative agreement with the FHWA, provides high-performance concrete technology transfer to transportation departments and the design community.

Simulia ................................................................................ Booth: 204
Contact: Ramachandra Balasubramania
Phone: 216-378-1070 x104
E-mail: ramachandra.balasubramaniam@3ds.com
Website: www.simulia.com
SIMULIA is the Dassault Systèmes brand that delivers an extensive portfolio of Realistic Simulation solutions including the Abaqus product suite. By building on an established technology, respected quality, and superior customer service, SIMULIA makes realistic simulation an integral business practice that improves product performance, reduces physical prototypes, and drives innovation.

SiGrma SRL ................................................................. Booth: 118
Contact: Mauro Quieti
Phone: 39 02 95764130
Fax: 39 02 95762011
E-mail: info@sigeo.com
Website: www.sisgeo.com
SiGrma is one of the world leaders in the field of geotechnical and environmental monitoring. The realization of a modern monitoring system is important to guarantee the safety of the structure, controlling the potential factors of failures and guarantee the safety of the population living near the structures.

Skala, Inc. ........................................................................... Booth: 113
Contact: Todd Keams
Phone: 775-747-2244
Fax: 775-794-7128
E-mail: mail@teamskala.com
Website: www.skalagroup.com
Skala specializes in bridge inspection and maintenance using rope access throughout North America. Rope access capabilities allow Skala’s FHWA-certified bridge inspectors to work on structures otherwise inaccessible or too expensive to reach using other means.

Snap-Tite ............................................................................. Booth: 230
Contact: Bruce Larson
Phone: 800 233 1305
Fax: 866 580 8991
E-mail: brucsl@isca-pipe.com
Website: www.culvert-rehab.com
The Snap-Tite Lining System is ideal for failing metal and concrete culverts. Today there’s an economical, no-dig solution with field-tested benefits, proving that rehabilitation is a better solution with the Snap-Tite Culvert Lining System.

Safis Company, Inc. ......................................................... Booth: 601
Contact: William J. Safis, Jr.
Phone: 724-378-2670
Fax: 724-378-3719
E-mail: wsafis@safiscompany.com
Website: www.safiscompany.com
Safis Company, Inc. has been a General Contractor for 50 years. We are DOT prequalified. We have earned a reputation for knowledge and reliability specializing in Bridge Repairs, Inspection and Support Services. Supplying top of the line Snoopers, Cable Rigging, Traffic Control and all related services, with an exemplary safety record.

Suprema In ................................................................. Booth: 317
Contact: Rick Allen
Phone: (814) 449-8801
Website: www.sup-antirock.com
Antirock has been protecting bridge decks worldwide since 1976 with its first installation still in place 33 years later. The bond created between the bridge deck and Antirock is unsurpassed by any waterproofing product in use today.
EXHIBITORS

Sound Fighter Systems, LLC ............................Booth: 311
Contact: Matt Harding
Phone: 412-279-1540
Fax: 318-865-7373
E-mail: mharding@soundfighter.com
Website: www.soundfighter.com

Sound Fighter® Systems (SFS) has been designing, engineering and manufacturing highly-effective absorptive sound walls since 1973 making us the oldest established manufacturer of absorptive noise barrier wall systems in America. Our LSE Wall System has been the go-to noise abatement tool of DOT’s, Acoustic Engineers & Consultants, Developers, Architects, Oil & Gas Companies and Contractors around the world in countless different applications.

Specialty Diving, Inc. ......................................Booth: 436
Contact: Marshall Whitmer
Phone: 985-542-8770
Fax: 985-345-7602
E-mail: marshallmdw@aol.com
Website: www.sdive.com

Specialty Diving offers expertise in the inland and offshore commercial diving industry. Services include: inspections, maintenance and repairs, with a complete range of underwater and topside services.

Splice Sleeve North America, Inc. .....................Booth: 719
Contact: Stan Kunoki
Phone: 949-861-8393
Fax: 949-861-8419
E-mail: ssnskk@msn.com
Website: www.splicesleeve.com

Splice Sleeve North America markets the NMB Splice-Sleeve System, a grouted coupler for rebar used primarily to connect precast concrete elements like bridge piers and abutments, sound walls and retaining walls. Couplers exceed the requirements of ACI-318 and AASHTO for type 2 performance. Also rated 18-KSI in NCHRP 10-35, a 5 Million cycle fatigue test.

SSI/Dow Corning .............................................Booth: 218
Contact: Scott Fowler
Phone: 918-587-5567
Fax: 918-586-4910
E-mail: scott.fowler@ssicm.com
Website: www.ssicm.com

SSI offers Contractors and Owners innovative products for new and remedial construction. In today’s competitive marketplace we hope to bring more than a take an order mentality. SSI currently serves the construction in two primary areas: Commercial Construction and Highway Construction. SSI has 6 office/warehouse locations and one sales office only location.

Stagnito Media ............................................Booth: 326
Contact: Ned Baric
Phone: 312-368-6013
Fax: 312-628-5878
E-mail: nbaricc@stagnitomedia.com
Website: www.stagnitomedia.com

Stagnito Media, the nation’s leading resource for civil and structural engineers, has recently launched REBUILDING AMERICA’S INFRASTRUCTURE — a magazine and website dedicated to engineering for bridges and roads. Stagnito Media publishes CE NEWS, and STRUCTURAL ENGINEER magazines, and embraces an integrated media platform including events, electronic media and custom media.

Stirling Lloyd Products, Inc. .............................Booth: 706
Contact: Simon Greensted
Phone: 860-666-5008
Fax: 860-666-5106
E-mail: northamerica@stirlingloyd.com
Website: www.stirlingloyd.com

‘Eliminator’ is the world’s most widely-specified sprayed bridge deck waterproofing system, for highways with asphalt overlay and railroads without protection board. Over 75 million square feet and 5,000 bridges have been protected worldwide, installed and operating in every climatic condition. Very high performance anti-skid systems and polymer concrete overlays are also offered.

Structural Bridges .........................................Booth: 437
Contact: Dominique Teteault
Phone: 418-683-2561
Fax: 418-688-8512
E-mail: dominique.teteault@canam.ws
Website: www.structuralbridges.ws

Structural Bridges is the Canadian leading manufacturer of steel bridges, structural bearings and expansion joints for the highway, railway and forestry industries. With an annual production capacity of 52,000 tons, Structural-Bridges is recognized for the quality of its products and the reliability of its service.

Structural Integrity Systems, LLC ........................Booth: 412
Contact: Monica Syty
Phone: 316-634-1396
Fax: 316-631-2995
E-mail: sidlci@southwind.net
Website: www.structuralintegritysys.com

Structural Integrity Systems, LLC (SIS) provides patented electronic wireless sensor solutions for In-situ bridge evaluation. SIS has the ability to provide NBIS reports and complete bridge engineering solutions for rehabilitation at a significant cost savings.

Suzhou Dafang Construction Vehicle .....................Booth: 202
Contact: Lan Mnd
Phone: 212-845-9500
Fax: 212-697-1100
Website: www.sdfz.com

An ISO9001 Certified manufacturer (China) of heavy lifting & transport vehicles such as hydraulic transporter, self-propelled trailer (SPMTs) and rubber tire gantry crane etc. International market includes: S.Korea, Malaysia, Singapore, Vietnam, Bangladesh and Philippines etc.

T-Wall Retaining Wall System ..........................Booth: 101
Contact: John Dalpain
Phone: 703-913-7858
Fax: 703-913-7859
E-mail: info@neelco.com
Website: www.neelco.com

The Neel Company provides complete engineering support to owners, consultants and contractors for the T-Wall Retaining Wall System. The DOT approved design, comprising of units with a monolithic precast reinforced concrete face and perpendicular stem, is backfilled with a select fill and no additional soil reinforcements. Also available to meet railroad loading. Contact The Neel Company directly for pricing or design assistance.
The QuikDeck™ Platform System can provide the solution to reduce labor costs and enhance access for bridge construction, rehabilitation and maintenance. QuikDeck™ can significantly reduce man-hours and overall project costs. Safety is our number one goal. All QuikDeck™ components are designed to meet or exceed OSHA safety regulations.

*ERMEX Technologies* .....................................................Booths: 103/105
Contact: Dustin Hamburg  
Phone: 405-491-2049  
Fax: 405-491-2417  
E-mail: dustin.hamburg@terex.com  
Website: www.terex.com

At Terex, we are focused on producing quality capital equipment that delivers the productivity, return on investment and cost-effectiveness that today’s value-conscious customers demand. Terex markets more than 50 diverse and well-respected brands, which cover a broad range of equipment for the construction, infrastructure, quarrying, recycling, mining, shipping, transportation, refining, utility, and maintenance industries.

*Termarust Technologies* ...............................................Booth: 707
Contact: Wayne Senick  
Phone: 888-279-5497  
Fax: 514-354-2799  
E-mail: wsenick@termarust.com  
Website: www.termarust.com

Termarust Technologies manufactures cost effective, high performance anti-corrosive coatings for steel/metal structures. The Termarust® RAVCS® High Ratio Calcium Sulfonate system stops the corrosion process specifically in crevice corroded and pack rust joints and connections and is ideal for flexible steel structures like bridges, towers, cables, high mast light poles, etc.

*Thyssenkrupp Safway, Inc.* ...........................................Booths: 318/319
Contact: Jerry Dolly  
Phone: 518-381-6000  
Fax: 518-381-4613  
E-mail: jerry.dolly@safway.com  
Website: www.safway.com

The QuikDeck™ Platform System can provide the solution to reduce labor costs and enhance access for bridge construction, rehabilitation and maintenance. QuikDeck™ can significantly reduce man-hours and overall project costs. Safety is our number one goal. All QuikDeck™ components are designed to meet or exceed OSHA safety regulations.

*Transpo Industries Inc.* ..................................................Booth: 406
Contact: John B. Karponek  
Phone: 914-536-1000  
Fax: 914-536-1282  
E-mail: jkarponek@transpo.com  
Website: www.transpo.com

Transpo manufactures Polymer Concrete for repairing and preserving concrete structures and HAWKIN™ for sealing cracked concrete. Our Thin (1/8”-1/2”) Polymer Concrete Overlay Systems have been used on Concrete, Steel and FRP bridge decks throughout the US and Canada. Transpo’s Castek Division precasts Polymer Concrete Safety Barrier Panels that are available in Jersey and F shapes, Flat single slope, and custom designs for bridge railing stay-in-place forms.

*TRC* ..........................................................................Booth: 323
Contact: Terry Maechler  
Phone: 916-366-0632  
Fax: 916-366-1501  
E-mail: tmaechler@trcsolutions.com  
Website: www.trcsolutions.com

TRC provides engineering services in support of the transportation and bridge industries with proven excellence in federal, state and local agency projects. Another service TRC provides is the selling, supporting and maintenance of multiple engineering design and analysis programs.

*Trinity Highway Products, LLC* ......................................Booth: 121
Contact: Gwendolyn Samuels  
Phone: 330-539-7305  
Fax: 330-545-3718  
E-mail: gwen.samuels@tin.net  
Website: www.highwayguardrail.com

Trinity Highway Products, LLC, headquartered in Dallas, Texas, is a leading manufacturer of highway guardrail, highway guardrail end treatments, temporary and permanent crash cushions, truck-mounted attenuators, and cable barrier systems. Offering a full line of standard and proprietary products, Trinity Highway Products is a recognized innovator of highway safety products. Trinity Highway Products manufactures products that have been tested, approved, and accepted as meeting established federal and state safety guidelines.

*U.S. Bridge International* ...............................................Booth: 225
Contact: Ian Howard  
Phone: 740-432-6334  
Fax: 740-439-7349  
E-mail: ianhoward@usbridge.com  
Website: www.usbridge.com

It’s how we’ve been doing it for over 70 years. With thousands of vehicular and pedestrian bridges across America, we continue to pay scrupulous attention to detail while focusing on custom designs for every installation. Our experience has provided us with a wealth of information that allows us to effectively communicate with public officials, consultants, engineers, architects and contractors to deliver excellence, on time and within budget. At U.S. Bridge we believe that steel bridges are better – more durable, more practical, more beautiful. With a name and heritage to be proud of, we ensure that your bridge is the finest designed and manufactured bridge available today.

Analysis including Creep and Shrinkage, Pushover Analysis, Nonlinear Time History Analysis and Heat of Hydration analysis.


**UnibridgeUSA**

Contact: Jean-Pierre (JP) Patriot  
Phone: 678-428-1047  
Fax: 770-420-9201  
E-mail: unibridgeusa@gmail.com  
Website: www.unibridgeusa.com

Modular Steel Bridges, Permanent or Temporary for General Traffic either Road or Rail, Alining Applications and Maritime Applications for RO-RO Terminals.

---

**Viathor, Inc.**

Contact: Clark Verkler  
Phone: 916-987-0248  
Fax: 916-987-0248  
E-mail: vinfo@viathor.com  
Website: www.viathor.com

Viathor, Inc. is dedicated to the development of top quality, user friendly, bridge design and analysis software. Our substructure program, VBent, is a fully interactive design tool for pier caps, columns and footings in integral (monolithic) and non-integral (drop-cap) piers. Our new superstructure tool, VBridge, integrates with VBent and designs reinforced or cast-in-place post-tensioned concrete bridges, and computes live load for any bridge configuration and support type.

---

**WavesinSolids LLC**

Contact: Thom Hay  
Phone: 814-237-0311  
E-mail: thomhay@wavesinalls.com  
Website: www.wavesinalls.com

WavesinSolids LLC, offers traditional nondestructive testing and advanced long range ultrasound and acoustic emission inspection products and services for the railroad, petrochemical, oil and natural gas, defense, aerospace, power generation and marine industries. Our field technicians provide professional Nondestructive Testing Services and follow-up technical reports that are clearly written and easy-to-interpret. Our engineers and scientists are actively engaged at the highest level of Research and Development to ensure that our clients receive tomorrow’s technology today.

---

**Wheeling Corrugating Company**

Contact: Mike Benson  
Phone: 304-234-2326  
Fax: 304-234-2378  
E-mail: bensonmw@wheelingcorrugating.com  
Website: www.wheelingcorrugating.com

Wheeling Corrugating Company specializes in permanent metal bridge deck forms. Form depths range from 2 inches through 4.5 inches accommodating girder spans up to 15’-0”.

---

**Whitman, Requardt & Associates, LLP**

Contact: Eric Meyer  
Phone: 724-779-7940  
Fax: 724-779-7943  
E-mail: emeyer@wrallp.com  
Website: www.wrallp.com

Established in 1915, Whitman, Requardt and Associates, LLP, a multi-disciplinary engineering, architectural, and planning firm, successfully serves both private and public sectors throughout the Mid-Atlantic. With a wide range of expertise readily available, the WR&A team confidently faces the most difficult design challenges. Offering a full spectrum of engineering, architectural, and planning services, WR&A has been recognized and awarded for creative solutions, innovative designs, and engineering excellence.
Williams Form Engineering ................................................Booth: 223
Contact: Ryan Williams
Phone: 616-822-1851
Fax: 616-822-1890
E-mail: williams@williamsform.com
Website: www.williamsform.com
Williams Form Engineering Corporation has been offering high capacity Ground Anchors, Concrete Anchors, Post Tensioning Systems, and Concrete Forming Hardware to the construction industry for over 80 years.

WireCo WorldGroup ...........................................................Booth: 300
Contact: Richard Humiston
Phone: 908-233-4874
Fax: 816-270-4707
E-mail: richardhumiston@wirecoworldgroup.com
Website: www.wirecoworldgroup.com
WireCo WorldGroup, the largest wire rope manufacturer in North America, leads in the production of structural bridge rope and strand. Our reputation for quality and service is unmatched. Each aspect of our engineering, manufacturing and fabrication process is monitored and controlled to assure the highest quality.

Wireropeworks, Inc. .........................................................Booth: 435
Contact: Bill Austin
Phone: 570-327-4206
Fax: 570-327-4274
E-mail: w.austin@wireropeworks.com
Website: www.wireropeworks.com
We have a full (GP) General Purpose product line including spin resistant crane ropes. We are also capable of producing the largest diameter strand in the country, as well as having the longest prestretching track.

WSP Sells ............................................................................Booth: 823
Contact: Michael Mangione
Phone: 914-747-1120
Fax: 914-747-1956
E-mail: michael.mangione@wsp sells.com
Website: www.wsp sells.com
An award winning transportation engineering firm, WSP SELLS provides a wide range of bridge consulting services. Our expertise ranges from local bridges to the inspection and design of the most complex bridges in the US. Our firm is part of WSP Group, a global engineering firm that provides innovative solutions for bridges throughout the world.

ZPMC / Busch Industries .....................................................Booth: 731
Contact: John H. Busch
Phone: 616-957-3737
Fax: 616-957-9951
E-mail: tech@buschindustries.com
Website: www.zpmc.com & www.buschindustries.com
The Shanghai Zhenhua Port Machinery Company, ZPMC, is one of the world’s largest and most respected crane manufacturer and steel fabricator. ZPMC has established itself as a world class fabricator on large scale projects such as the San Francisco Oakland Bay Bridge, the Incheon Bridge and the Donghai Bridge.