



the 24th Annual
**INTERNATIONAL
BRIDGE CONFERENCE**[®]

June 4-6, 2007

**Hilton Pittsburgh
Pittsburgh, PA
USA**

**CONFERENCE
PROGRAM GUIDE**

Featured Country:
People's Republic of China



*Bridging Continents...
Sharing Ideas*



跨接各洲 共享理念



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-Willa A. Foster

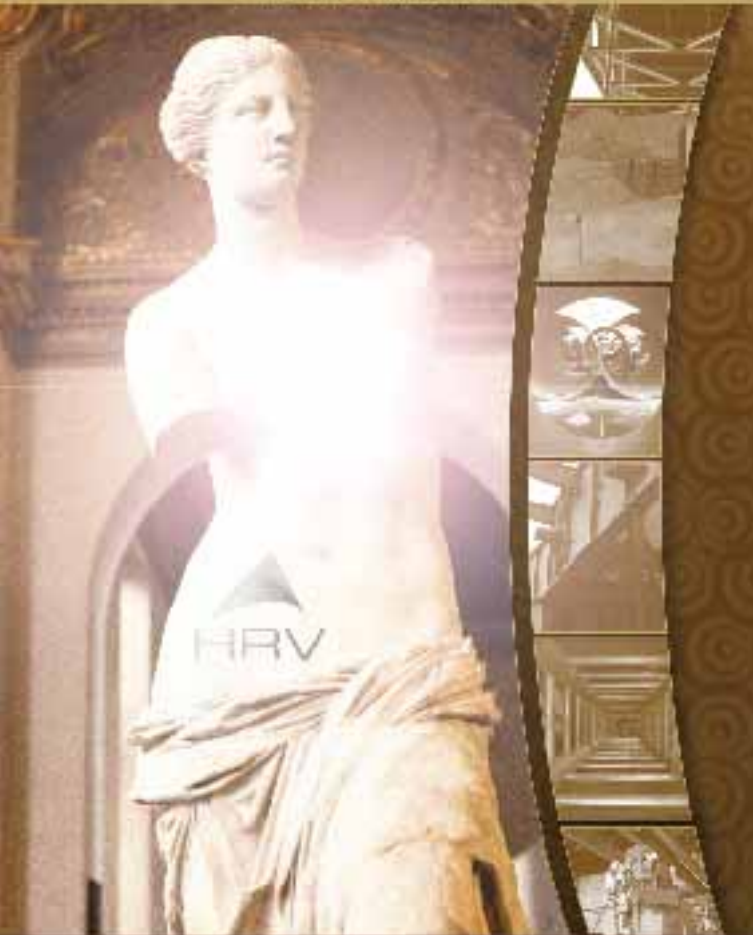
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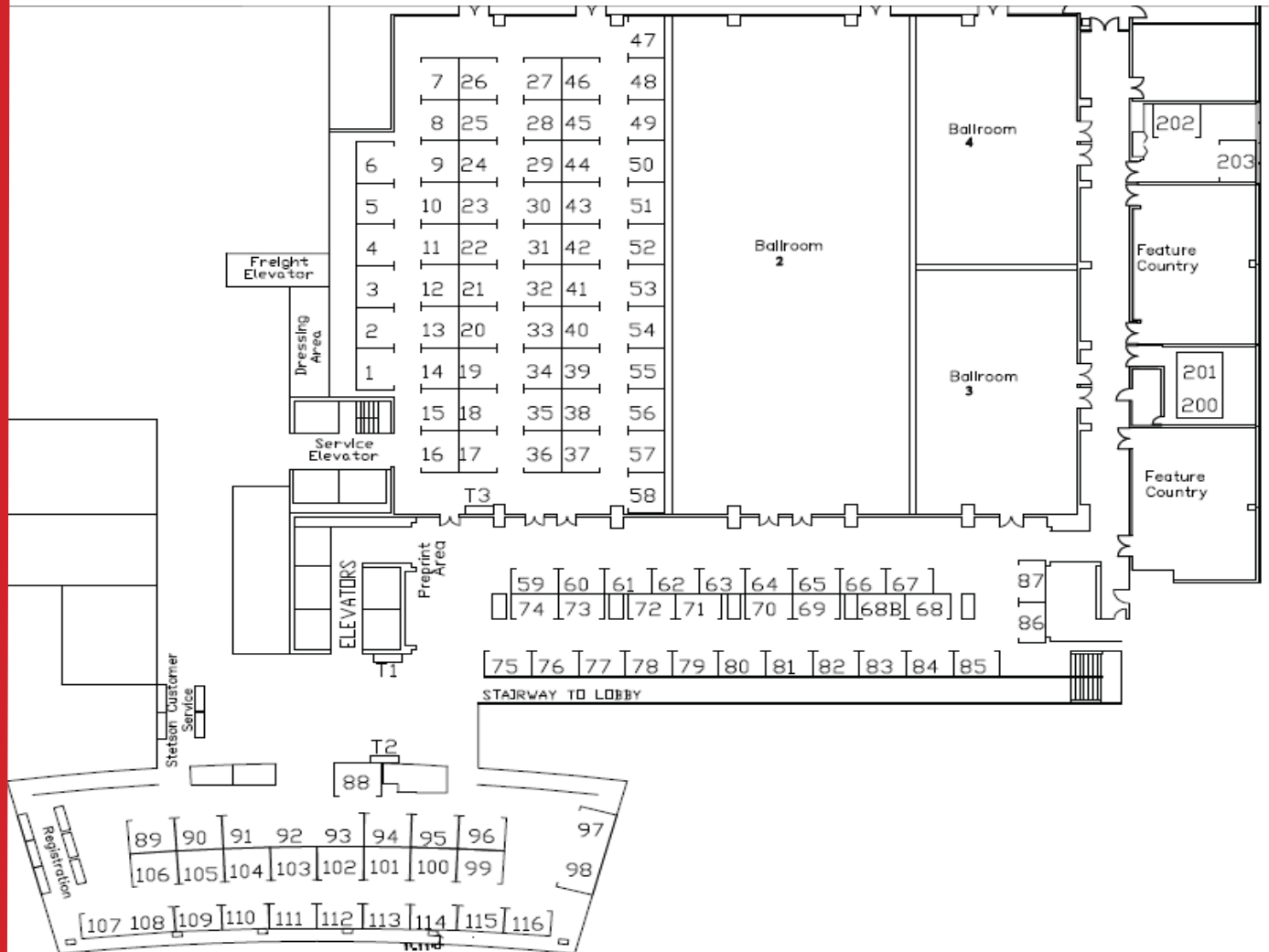
Prestressed Concrete Association of Pennsylvania (PCAP)
www.pcap.org

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www.sspc.org

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Bridge design and engineering; www.bridgeweb.com
Bridges Magazine; www.gobridges.com
CoatingsPro Magazine; www.coatingspromag.com
JPCL; www.paintsquare.com
Roads & Bridges Magazine; www.roadbridges.com

MEZZANINE FLOOR PLAN



REMINDER

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.

Please wear your IBC-issued name badges at all times during conference activities. Your name badge is your passport to all conference activities, and lists several important telephone numbers on the back.

1st FLOOR PLAN

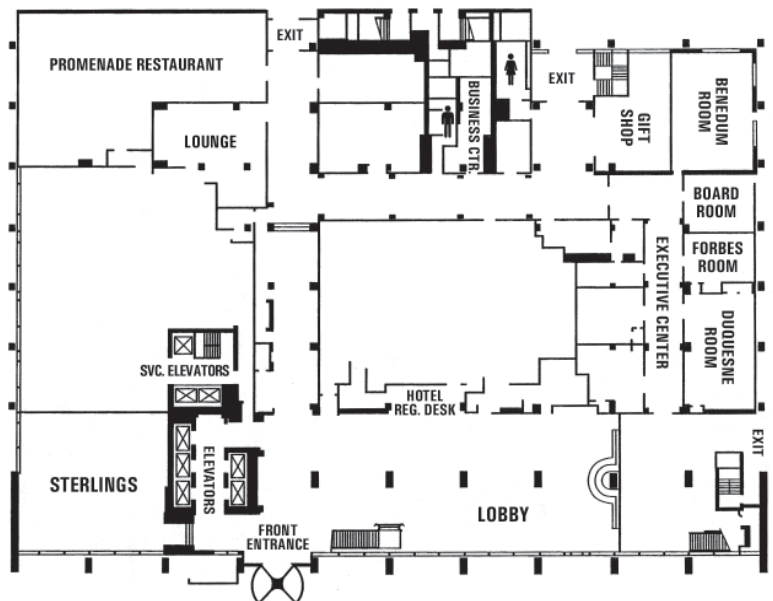


TABLE OF CONTENTS

General Information	4-7
Chairman's Welcome.....	2-3
Bridge Awards Luncheon	9
Bridge Bus Tour	24
Executive Committee Listing.....	1
Exhibit Info & Listings.....	45-75
Featured Country Session.....	10
Floor Plan	Inside Cover
Monday Morning Sessions	8-9
Monday Afternoon Session	10-12
Monday Welcome Reception.....	12
Tuesday Morning Sessions	13-22
Tuesday Breakfast	13
Tuesday Afternoon Sessions	23-30
Wednesday Morning Sessions.....	31-41
Wednesday Buffet Lunch	41
Wednesday Afternoon Sessions ...	41-44
Schedule at a Glance	38-39

FUTURE DATES

Date: June 1-4, 2008
Location: David L. Lawrence
Convention Center,
Pittsburgh, PA
Hotel: Westin Convention Center

The International Bridge Conference is sponsored by the Engineers' Society of Western Pennsylvania. The opinions expressed in this program are not necessarily those of the International Bridge Conference® Executive Committee or the Engineers' Society of Western Pennsylvania. Speakers and program content are subject to change.



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2007 Chairman's Message



M. Myint Lwin, P.E., S.E.
2007 IBC General Chairman

As this year's General Chairman, I am pleased to invite all of you to the 24th. Annual International Bridge Conference® (IBC) in Pittsburgh, Pennsylvania. The Executive Committee has worked diligently to develop an outstanding

conference program to cover a broad spectrum of practical highway, railway and pedestrian bridge engineering – design, construction, inspection, testing, preservation, replacement, rehabilitation and much more. The conference provides many opportunities for participants to share and learn from each other in all aspects of practice and specialty. Educational seminars have been selected to provide participants with timely learning in constructability of steel bridges, construction practices for concrete segmental bridges and in the application of the AASHTO Manual on Load and Resistance Factor Rating (LRFR) of highway bridges. You will find this conference informative, educational, practical and enjoyable. Capture the opportunity!

The IBC continues to be the preeminent forum covering activity in the bridge industry. Last year's conference attracted approximately 1,100 bridge professionals from North America, Europe and Asia. Primarily sponsored by the Engineers' Society of Western Pennsylvania (ESWP), the Conference is guided by the volunteer members of the IBC Executive Committee, which is comprised of bridge owners, designers, constructors, manufacturers, suppliers and educators. The IBC Executive Committee has spent many hours in developing the program in order to provide a conference of the highest quality and practical value to all attendees.

We are pleased to be able to kick off this year's conference by offering an outstanding group of Keynote speakers for the **Opening Session**. The **Monday Awards Luncheon**, held immediately following the Opening Session, is generally a sold out event, so be certain to register early to reserve your spot. It is complimentary, but limited to 300 on a first-come first-served basis.

We are honored to have China as the **"Featured Country"** at the 24th Annual IBC. In the past 15 years, China has been investing unprecedented resources in the construction of roads and bridges for highways and expressways. The National Trunk Highway System (NTHS) in China will be completed in 2007, 13 years ahead of schedule. In the next phase of the highway infrastructure expansion, China will focus on the new National Expressway Network, estimated at 53,000 miles in total length. Their goals are to reach 34,000 miles of expressway by the year 2010, and 53,000 miles by the year 2020. Highway road and bridge construction is expected to continue at an unprecedented pace and to meet new challenges in bridging valleys, large rivers, bays and straits. As the "Featured Country", China will showcase the country, its people

and its bridges throughout the conference in the "Featured Country" Session on Monday afternoon, and in the oversized exhibit area. Mr. Maorun Feng, former Chief Engineer, Ministry of Communication, China, will lead a relatively large delegation to Pittsburgh to show exhibits and make presentations on the technical, financial, environmental and social challenges and opportunities of high-visibility and record-setting projects. Please come to Pittsburgh for the 2007 IBC and join me in welcoming the Chinese delegates and in exchanging ideas with them in advancing the bridge industry internationally.

The theme of this year's conference is **Bridging Continents – Sharing Ideas**. The theme reflects the many outstanding papers that we have received from authors from many countries. We thank the authors for bridging the continents through sharing their ideas, experiences, and sound practices, so we all can benefit from them. Our Technical Program this year has been expanded and is packed with exciting presentations that will benefit all attendees. In addition to the presentations on a number of signature bridges, we have a wide variety of presentations in the program including a number of very timely presentations on innovations for improving durability and cost-effectiveness, prefabrication and accelerated bridge construction to improve safety and minimize congestion, systematic preservation to extend service, and several leading edge academic papers that may have a positive impact on the practice of bridge design and analysis. There are also several papers that focus on developing context-sensitive designs, and how aesthetics can be incorporated economically into bridge structures.

We will also have **Seminars** and **Special Interest Sessions** to keep you current with the latest technology advancements in the world of bridge engineering. Over **120 Exhibitors** are expected to attend and showcase the latest products and services. We encourage you to take the time to visit with them and see what they have to offer. We will again be offering our annual **Bus Tour** on Tuesday afternoon, and it will highlight some current bridge construction projects in the Pittsburgh area.

Please take a moment to peruse the information in this brochure. For those of you who are attending the IBC for the first time, we trust that you will find the Conference a rewarding and exciting educational experience, as have many thousands before you. For those who have attended the IBC previously, we welcome you back to Pittsburgh - the City of Bridges - and hope you make this Conference truly memorable. Come and learn about the latest developments in the bridge industry and take advantage of the networking opportunities that occur at the IBC and its related functions.

M. Myint Lwin, P.E., S.E.
Director, FHWA Office of Bridge Technology
2007 IBC General Chairman

GENERAL INFORMATION

Meeting Information

All IBC functions are located in the Hilton Pittsburgh. Please check individual listings in the program for specific locations and times for all technical sessions, seminars and social functions. Any changes in the program schedule will be posted or announced.

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.

Registration

The IBC registration is located in the Kings Garden area of the Hilton Pittsburgh. Registration hours are as follows:

Sunday:	5:30pm to 7:30pm
Monday:	7:00am to 6:00pm
Tuesday:	7:00am to 5:00pm
Wednesday:	7:00am to 1:30pm

Registration Lists

Registrations received prior to May 25 have been compiled in the IBC PRE-REGISTRATION LIST, and is distributed free to all registered attendees.

An addendum to the registration list will be available Wednesday morning of the conference and reflects those attendees who registered after May 26 or on-site during the conference.

An electronic copy of the entire list is available for \$25 following the conference.

Message Board

As a service to Conference registrants, a Message Board will be located in the Kings Garden area of the Hilton Pittsburgh. The board will be available on June 3, 4, 5 & 6. Messages will be retained until the end of each day.

IBC Exhibition

One of the main attractions of the Conference is the IBC Exhibit Hall. As you stroll through over 120 exhibits, you will be able to explore the latest technologies, products and services the bridge industry has to offer.

The IBC Exhibit Hall is located in Ballroom 1, the Ballroom Foyer, Kings Garden and the Boardwalk. You will be able to view the exhibits during the following hours:

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

GENERAL INFORMATION

Badge Identification

Please wear your IBC name badge at all times during the conference. Not only is the badge your passport to all Conference activities, but it also lists several important local phone numbers on the back. ESWP has authorized 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 hotel property.

Hotel Information

Hilton Pittsburgh	Renaissance Pittsburgh
Gateway Center	107 Sixth Street
Pittsburgh, PA 15222	Pittsburgh, PA 15222
Tele: (412) 391-4600	Tele: (412) 562-1200
Fax: (412) 471-4485	Fax: (412) 562-1644

Pre-prints

Pre-prints for all technical presentations are available at the Pre-Print area located in the Ballroom 1 Foyer. Pre-prints can be purchased for just \$3.00 per copy. Also, you can find copies of previous years' IBC Proceedings (for \$55 per volume). The Pre-Print Booth will be open:

Sunday:	5:30pm to 7:30pm
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, Sweatshirts, and Hats. These items are high quality and feature the popular IBC logo. The Gift Item Table is located at the Preprint desk where you can make your purchases throughout the Conference until Wednesday at 2:00pm. Please be sure to stop by and see them 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 24th Annual International Bridge Conference will be available in late Summer 2007 and mailed to you at that time.

Coffee Stand

Complimentary coffee and breakfast breads are available throughout the Exhibit Hall hours in the Le Bateau

GENERAL INFORMATION

Pittsburgh Recreational Highlights

The **Three Rivers Arts Festival** is an annual Pittsburgh tradition marking the beginning of the summer season. The Festival, is a showcase for every imaginable craft in the exhibit booths surrounding the Hilton Pittsburgh, Gateway Center and Point State Park. In addition to the artists market, a wide variety of ethnic foods can be found across the street from the main entrance to the Hilton. Live performances of music and dance are scheduled throughout the day and evening. A world of cultural activity is right outside your door.

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

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

Whether you are in Pittsburgh for business or pleasure, **Station Square** offers the most attractions combined into one location. Locals will tell you that Station Square is always happening featuring some of the area's top entertainment. See a show from rock to blues to jazz or comedy. Take a tour and sightsee Pittsburgh on a boat, on the historic inclines, a horse drawn carriage, or tour the town on a duck (yea it's not a typo...see Just Ducky Tours). Plus, you'll want to pick up some souvenirs from your adventures too. Learn more at www.stationsquare.com.

GENERAL INFORMATION

Area Museums

Three hundred years of Pittsburgh history come alive at the **Senator John Heinz Pittsburgh Regional History Center** in the Strip District. Located in what was formerly the Chautauqua Lake Ice House, The Senator John Heinz History Center is an affiliate of the Smithsonian Institution and the largest history museum in the state of Pennsylvania. Devoted to the history and heritage of Western Pennsylvania, the History Center is a 275,000-square-foot museum and research facility that is located in the city's historic Strip District. The History Center's home combines the former Chautauqua Lake Ice Company building with the five-story Smithsonian wing that opened November 13, 2004. This museum offers a variety of exhibits that tell the story of the people who built and influenced Pittsburgh's evolution from industrial megaforce to a center for technology, medicine, robotics and tourism. For more information, visit www.pghhistory.org or phone 412-454-6000

From downtown, a short walk across one of Pittsburgh's many bridges over the Allegheny River takes you to the **North Shore**, where visitors can experience the work of the pop art prince and Pittsburgh native Andy Warhol at **The Andy Warhol Museum**, the most comprehensive single-artist museum in the world. The Warhol was recently "in the news" when an original sold for more than \$70 million at auction! Learn more at www.warhol.org

Another North Side "must see" is the **Carnegie Science Center**, an interactive amusement park for the mind, which features over 250 hands-on exhibits, including the largest science and sports exhibition in the world.

Please visit the **Greater Pittsburgh Convention & Visitors Bureau** information table located on the 2nd floor Mezzanine Level for more information regarding these attractions and many more.

Pittsburgh Pirates — www.pittsburghpirates.com

A short walk from the IBC, just across the Allegheny River on Pittsburgh's North Shore you'll find PNC Park, the home of the Pittsburgh Pirates. This 38,000-seat classic baseball stadium has been designed with masonry arches, a terra cotta front, and a center field that opens to a dramatic view of Pittsburgh's skyline and has been called the "perfect blend of location, history, design, comfort and baseball." (<http://espn.go.com/page2/s/ballparks/pncpark.html>)

The Pittsburgh Pirates will take on the Los Angeles Dodgers on Friday, June 1 (7:05 pm), Saturday, June 2 (7:05 pm), Sunday, June 3 (1:35 pm) and Monday, June 4 (7:05 pm). Single game tickets are now available online at www.pittsburghpirates.com or by calling 1-800-Buy-BUCS.

MONDAY, JUNE 4

OPENING SESSION

Time: 8:30 – 11:30am
Room: Ballroom 2
Chair: M. Myint Lwin, PE, SE,
IBC 2007 General Chairman –
*Federal Highway Administration (FHWA),
Washington, D.C.*

Alex G. Sciulli, PE, *Engineers' Society of Western Pennsylvania 2007 President, Mellon Financial Corporation, Pittsburgh, PA*

Thomas E. Donatelli, PE, *Director of Public Works, Allegheny County, Pittsburgh, PA*

Maorun Feng, *Chairman of Technical Consultative Committee and Former Chief Engineer Ministry of Communications, People's Republic of China*

Stephen Allen, *CEO, Macquarie Infrastructure Group, Sydney, Australia*

John R. Schmidt, *Partner, Mayer, Brown, Rowe and Maw LLP, Chicago, IL*

Randell H. Iwasaki, *Chief Deputy Director, California Department of Transportation, Sacramento, CA*

MONDAY, JUNE 4

BRIDGE AWARDS

Time: 11:30am - 12:45pm
Room: Ballroom 2
Chair: Carl Angeloff, PE
Bayer Material Science, LLC, Pittsburgh, PA

ESWP, in association with Roads and Bridges Magazine, Bayer Corporation, bridge design and engineering Magazine and the International Bridge Conference®, invites you to join us at the Twenty-First Annual IBC Bridge Awards Luncheon. SEATING IS STRICTLY LIMITED to the first 300 people at this complimentary event. You must select the "Awards Luncheon" option on the Registration form (and be registered to attend the Conference on Monday) to receive a ticket. Requests are honored on a first-come, first-served basis. Honorees will be recognized in the following categories:

John A. Roebling Medal – For Lifetime Achievement in Bridge Engineering, awarded to William B. Conway, PE, Chairman, Modjeski and Masters, New Orleans, LA

George S. Richardson Medal – For a Single Recent, Outstanding Achievement in Bridge Engineering awarded to the Maine Department of Transportation, for the Penobscot Narrows Bridge and Observatory, Waldo and Hancock Counties, ME

Gustav Lindenthal Medal - For an Outstanding Achievement that demonstrates innovation coupled with aesthetic merit, harmony with the environment or successful community participation awarded to Construction Command Office of Nanjing No. 3 Yangtze River Bridge for the Nanjing No. 3 Yangtze River Bridge, Nanjing, P.R. China

Eugene C. Figg Jr., Medal for Signature Bridges – For a Single, Recent, Outstanding Achievement in bridge engineering that, through vision and innovation, provides an icon to the community for which it was designed, awarded to Florida Department of Transportation for the Royal Park Bridge Replacement, West Palm Beach, FL

Arthur G. Hayden Medal - A Single, Recent Outstanding Achievement in bridge engineering demonstrating Innovation in Special Use Bridges such as Pedestrian, People-mover, or Non-traditional Structures, awarded to Project Bureau Ijburg for Nesciobrug, Ijburg, The Netherlands

James D. Cooper Student Award - An annual competition available to all graduate and undergraduate students at tending an accredited college or university that offers a civil engineering major awarded to Jessica T. Newlin, Department of Civil and Environmental Engineering, and K. Sham Bhat, Department of Statistics, The Pennsylvania State University, University Park, PA for their paper: Identification and Prioritization of Stream Channel Maintenance Needs at Bridge Crossings (IBC 07-18)

FEATURED COUNTRY: CHINA

中国主题年

Time: 1:30 – 5:00pm

Room: Ballroom 2

Co-Chairs: Maorun Feng,

Chairman of Technical Consultative Committee and Former Chief Engineer Ministry of Communications, People's Republic of China

King W. Gee, PE

Associate Administrator for Infrastructure Federal Highway Administration (FHWA) U.S. Department of Transportation

IBC 07-01-润扬长江大桥 1:30pm

Runyang Yangtze River Bridge

Feng Zhaoxiang, *Director of Yangtze River Bridge Construction Headquarters of Jiangsu Province*

IBC 07-02-巫山长江大桥 1:55pm

Wushan Yangtze River Bridge in Chongqing

Gu AnBang, *Professor, Chongqing Jiaotong University*

IBC 07-03-南京长江第三大桥 2:20pm

No. 3 Nanjing Yangtze River Bridge

Wang Chengjiang, *Vice Director of No. 3 Nanjing Yangtze River Bridge Construction Headquarters*

IBC 07-04-苏通大桥 2:45pm

Sutong Bridge

You QingZhong, *Vice Director General of Jiangsu Provincial Communications Department; General Director of Sutong Bridge Construction Headquarters*

BREAK 3:15-3:45pm

IBC 07-05-杭州湾跨海大桥 3:45pm

Hangzhou Bay Long Bridge

Fang Mingshan, *Vice Chief Engineer of Hangzhou Bay Long Bridge Construction Headquarters*

IBC 07-06-西堠门大桥 4:10pm

Xihoumen Bridge of Zhou Shan Island-Link Project

Xu Hongliang, *Division Chief Engineer, China Highway Planning and Design Institute (HPDI) Consultants, Inc.*

IBC 07-07-长大跨度铁路桥梁 4:35pm

Four Long and Large Span Railway Bridges Being Designed and Studied in China

Xu Gongyi, *Vice Chief Engineer, China Zhongtie Major Bridge Reconnaissance & Design Institute*

PROPRIETARY SESSION

Time: 4:00 – 6:00pm

Room: Ballroom 3 & 4

Chair: Eric S. Kline

KTATator, Inc., Pittsburgh, PA

IBC 07-08 4:00pm

Innovative Engineering & High Performance Precast Concrete Superstructure

Robert Brunner, PE, *NYS Thruway Authority, Albany, NY*; Scott Harrigan, PE, *The Fort Miller Co., Inc., Schuylerville, NY*

This presentation will explain the Spaan Span Bridge System; a concrete structure with a depth of less than 21" for a span of almost 100'. The presentation will discuss the criteria for selecting the system; the system will be explained; and the manufacturing and erection processes will be described in detail.

IBC 07-09 4:25pm

Use of Filled Grid Deck Panels on Rapid Reconstruction Projects

Mark Kaczinski, *Bridge Grid Flooring Manufacturers Association, North Baltimore, OH*

Filled grid decks have a long history of use on bridge projects to help reduce dead load. Over the past 10 years many projects have also been completed with prefabricated grid deck panels to reduce construction schedules. This method of deck reconstruction will be reviewed and several case studies presented.

IBC 07-10 4:50pm

Summary and Analysis of Effective Bridge Inspection Efforts: Looking back over the 40 years since the Silver Bridge Collapse

Jeremy Shaffer, Michael Schellhase, *InspectTech, Pittsburgh, PA*

This presentation will highlight some of the different approaches and philosophies toward bridge inspection that currently exist in the United States. The historical background will be covered along with a more detailed look at how technology can be effectively applied to enhance the inspection and management process.

IBC 07-11 5:15pm

Major Developments in the Waterproofing and Surfacing of Structures

John Hammond, *Pavement Innovations Limited, Newington, CT*

In the United Kingdom over the last 10 years there have been major advances in the bridges industry with the waterproofing and surfacing of structures, in both the development and use of new materials and the performance-based criteria demanded by clients. Following two years of research, and the investigation over 20 highly-stressed structures, it

MONDAY, JUNE 4

was concluded that, while many systems failed prematurely, there was a waterproofing/surfacing system that could perform satisfactorily and increase bridge sustainability, and reduce the future maintenance needs of bridges by as much as 50%.

IBC 07-12

5:40pm

Long Term Protection for Concrete Bridges

Doug Zuberer, *Chase Specialty Coatings, Taunton, MA*

Significant problems associated with Bridge Deck (Full depth design) and concrete overlays involve a 21 step process according to the current FHWA Guidelines. The Transportation Research Boards web site has noted over the years many of the early deck cracking problems, and the need for a fast track maintenance program. This can all be eliminated should the designers make a choice to provide a wearing course that is also a waterproofing system. One alternative method used by many states on several Interstate projects is discussed.

ATTENDEE WELCOME RECEPTION

Time: 5:00 – 7:00pm

Room: Exhibit Hall

Hosted by the IBC Exhibitors: join all registered attendees for the Annual Welcome Reception, located throughout the Exhibit Hall, from 5:00-7:00pm. All attendees will receive two tickets for complimentary beverage service, and enjoy light appetizers offered thru the Exhibit Hall. Renew old acquaintances and make new friends at this annual event enjoyed by all!

TUESDAY, JUNE 5

ATTENDEE BREAKFAST

Time: 7:00 – 8:00am

Room: Exhibit Hall

Hosted by the IBC Exhibitors: join all registered attendees for the Tuesday morning breakfast, located throughout the Exhibit Hall, from 7:00-8:00am. Coffee, danish, fruit and juice will be placed thru the Exhibit Hall. Get your day started right with a great breakfast! As a registered conference attendee, there is no cost to attend.

Seminar: Construction Practices for Concrete Segmental Bridges

Time: 8:00-12:00noon

Room: Sterling's (1st Floor)

Presenters: ASBI

Overview of Segmental Construction 8:00-8:30am

M. Myint Lwin, *Federal Highway Administration* and Cliff Freyermuth, *American Segmental Bridge Institute*

Construction of Precast Segmental Span-by-Span Bridges 8:30-9:15am

William Jay Rohleder, P.E. *Figg*

Construction of Precast Balanced Cantilever Bridges 9:15-10:00am

David Jeakle, *URS Corporation*

Break 10:00-10:15am

Construction of Cast-in-Place Balanced Cantilever Bridges 10:15-11:00am

John Crigler, *VSL*

Production of Precast Segments with an Overview of Equipment for Handling, Transporting, and Erecting Precast Segmental Bridges 11:00-12:00noon

Elie Homsy, *Flatiron Constructors, Inc.*

Special Interest Session : Coatings

Time: 8:00am - 12:00noon
 Room: Benedum (1st Floor)
 Presenters: SSPC

Bridge Coatings in China 8:00-8:30am
 Bayer MaterialScience LLC

The 12 Most Common Deficiencies in Bridge Painting 8:30-9:00am
 Lloyd Smith, CCC&L

The use of Analytical Instrumentation in the Failure Analysis of Coatings 9:00-9:30am
 Dwight Weldon, Weldon Labs

Break 9:30-9:45am

The Completion of Phase I of the Single Coat Research Program 9:45-10:00am
 Eric Kline, KTA-Tator, Inc.

Bridge Painting Challenges in New York City 10:00-10:30am
 Ron Rauch, New York City DOT

Fabrication Shop and Polyaspartic: A Perfect Fit 10:30-11:00am
 Gary Gardner, The Sherwin-Williams Company

Painting of the Olympic Village 11:00am-12:00noon
 Bayer MaterialScience LLC

Lunch 12:00-1:00pm

Tour 1:00-3:00pm
 Pittsburgh's Historic Incline and New Wabash Tunnel

SSPC will take attendees on a tour of the Pittsburgh's Historic Incline and New Wabash Tunnel. The first stop will take us to the Pittsburgh Duquesne Incline which has been providing public transportation, via funicular railway, since May 20, 1877. Utilizing two original, 1877 cable cars, the Duquesne Incline is a working museum. Additionally, the spacious Observation Deck overlooks the beautiful Golden Triangle of Downtown Pittsburgh, and surrounding area including the upper Ohio River valley and lower Allegheny River Valley, ranked the second most beautiful view in America by USA Weekend Magazine!

The second stop on the tour will take us to the New Wabash Tunnel where 30,000 square feet of concrete was coated. The tunnel received a durable coating for the concrete ramp supports walls – one that allows for easy removal of graffiti, as well as long-lasting protection against rain, sun, wind, and cold. Come join us on this tour to take a look at the aliphatic acrylic polyurethane coating system specification that was used for both the color coat and clear coat.

Extreme Events

Time: 8:30am - Noon
 Room: Ballroom 2
 Chair: Lisle E. Williams, PE, PLS
 T.W. Consultants, Inc., Pittsburgh, PA

IBC 07-13 8:30am

Performance of Bridges During the Sumatra
 Tsunami and Hurricane Katrina

Mark Yashinsky, Caltrans, Sacramento, CA

The American Society of Civil Engineering sent investigation teams to study bridge damage after the December 26, 2004 Sumatra Tsunami and the August 29, 2005 Hurricane Katrina. This paper presents the results of these investigations.

IBC 07-14 8:55am

Replacing I-10 Bridge Over Lake Potchartrain After
 Hurricane Katrina

Arthur D' Andear, Hossein Ghara, Louisiana Department
 Of Transportation & Development, Baton Rouge, LA

The challenges of replacing the interstate 10 Twin Spans over Lake Pontchartrain which entailed combining new bridge design specifications, LRFD, with a coastal engineering impact analysis. The management of this effort took place in a difficult construction environment, including uncertain funding scenarios combined with the public demand for speed and accountability. The presentation will also cover the repairs and operational maintenance to the existing structure heavy usage of SPMTs and temporary ACROW spans.

IBC 07-15 9:20am

Hurricanes Katrina & Rita- Louisiana's Response
 and Recovery

Ray Mumhrey, Hossein Ghara, Louisiana Department
 Of Transportation & Development, Baton Rouge, LA

This presentation will introduce the audience to the transportation infrastructure damage Louisiana experienced as a result of two major hurricane events striking along the coast of Louisiana in 2005. We will also describe how Louisiana responded to the disaster and our road to recovery. During hurricane Katrina a major interstate link between New Orleans and Slidell, Louisiana was destroyed by the wave forces. We will provide information on the temporary emergency repair of the bridges and our current efforts at reconstruction of the I-10 Twin Span Bridge.

The Replacement of the I-10 Bridges over Escambia Bay

John Poulson, Victor Ryzhikov, *Parsons Brinckerhoff, Tampa, FL*

Hurricane Ivan struck Florida's coast near Pensacola on September 16, 2004. The Category 4 storm packed winds of over 120 MPH, produced a 20 foot storm and waves which devastated the existing 2.6 mile long bridges carrying I-10 over Escambia Bay. The Tidewater Skanska/Flatiron Constructors/Parsons Brinckerhoff Team developed an approach to the project which will produce over 5 miles of bridge structure in approximately two years; an average of 2,000 square feet of bridge constructed per day. The DVB Team developed innovative design and construction methods to make the construction schedule achievable.

BREAK

10:10-10:30am

Did London Bridge Fall Down?

Charles Seim, *Consulting Bridge Engineer, El Cerrito, CA*
London Bridge was falling down! Bridges should not fall down; but they have! This paper examines historic and contemporary bridge failures and reasons for the failures. Perhaps studying past bridge failures will aid the bridge engineering profession to help prevent future bridges from falling down.

James D. Cooper Student Paper Award Winner: Identification and Prioritization of Stream Channel Maintenance Needs at Bridge Crossings

Jessica T. Newlin, *Department of Civil and Environmental Engineering*; K. Sham Bhat, *Department of Statistics, The Pennsylvania State University, University Park, PA*

Maintenance of bridge crossings over streams require consideration of both the state of the bridge structure itself and the state of the stream channel that it is crossing. The objective of this paper is to apply decision-making tools to stream stability assessment data to prioritize and identify stream channel maintenance needs at bridge crossings. The methods that are presented allow a manager or decision-maker to prioritize sites based on overall condition and to reduce a large data set to a manageable list of alternatives for stream channel improvement at the sites in the worst condition.

Time: 8:30am - 12:00noon
Room: Ballroom 3
Chair: Kent A. Harries, PhD, FACI, PEng
University of Pittsburgh, Pittsburgh, PA

Stress Ribbon Pedestrian Bridges Supported or Suspended on Arches

Jiri Strasky, *Consulting Engineer, Greenbrae, CA*; Gary Rayer, *OBEC Consulting Engineers, Eugene, OR*

A new system that combines arches with the stress-ribbon is described in terms of the architectural and structural solution, static and dynamic analyses and a process of construction. The advantage of the structural system is demonstrated on examples of several structures built in Oregon, USA and in the Czech Republic.

Integrated Abutment Technology for Simple Bridges

Michael T. Adams, William Wright, *Federal Highway Administration, McLean, Va*; Warren Schlatter, *Defiance County*

The concept of a Geosynthetic Reinforced Soil Integrated Bridge System" was developed by the Federal Highway Administration to meet the demand for new common, single-span bridges. This simple method of bridge support is quick to build and blends superstructure with the approach way to create an efficient, jointless bridge system

Nano Technology and Bridges

Ken P.Chong, P.Balaguru, *National Science Foundation, Arlington, VA*

A futuristic bridge using nanotechnology is proposed. State of the art composites with sensing and control elements, self-healing materials, anti-graffiti and self-cleaning surfaces, smart paint, geothermal energy [to de-ice bridge decks], seismic design and other features will be incorporated in this futuristic concept. A preliminary design of this has appeared in the USA Today based on the interview with the author.

New Stainless Steels for Bridge Applications

Fred Fletcher, *Mittal Steel USA, Coatesville, PA*; Jean-Christophe Gagnepain, *Industeel Arcelor, le Creusot, France*

Innovative bridge designers and engineers who are open to new materials can provide owners significant life cycle cost savings. Selecting the right bridge steel for special localized environmental conditions involves knowing and understanding the design strength and corrosion properties of the steels to be described in this presentation.

BREAK

10:10-10:30am

IBC 07-23

10:30am

Crossing Hangzhou Bay

Beile Yin, *Hardesty & Hanover, New York, NY*; Lu Zhongda, Fang Minshan, *Engineering Headquarters of Hangzhou Bay Bridge, Ningbo, China*

Due to the complicated construction circumstance and large engineering scale of bay bridge, the design and construction of Hangzhou Bay Bridge will encounter numerous obstacles and challenges during construction inevitably. The paper presents a series of studies and their applications on key techniques, such as the GPS-based all-weather survey and control technique, the prefabrication, transit, and erection of large scale pre-stressed concrete box girder, the design, manufacturing, preservation and construction of large-diameter over-length steel tube pile, the durability of concrete structure in the marine environment, the influences of catastrophic weather on traffic safety, and the corresponding application methods are proposed.

IBC 07-24

10:55am

The Second Wujiang Bridge in Fulin, China

Gulei Ren, *T.Y. Lin International, Chongqing, China*; Man-Chung Tang, *T.Y. Lin International, San Francisco, CA*

This is an asymmetrical 3-span cable stayed bridge with spans of 100m, 340m and 150m. Because the uneven side span lengths, the two towers are of different heights. The main girder carries a single cell concrete box girder. Suspended by a single plane of cables.

IBC 07-25

11:20am

Unique Bridge Type Selection for Two New Ohio River Bridges

James B. Williams, *Michael Baker Jr., Inc., Louisville, KY*; Daniel Carrier, *Parsons Brinkerhoff, Louisville, KY*; Aaron L. Stover, PE, SE, *Michael Baker Jr., Inc., Louisville, KY*

The Ohio River Bridges Project in Louisville, Kentucky and Southern Indiana is one of the nation's major mega transportation projects, and it included two new bridges over the Ohio. This paper describes the four step Bridge Type Selection process that used public involvement to create informed public consent along with meeting the budget, engineering, and environmental requirements.

DESIGN, PART 1

Time: 8:30am - 12:00noon

Room: Ballroom 4

Chair: Gerald Pitzer, PE

GAI Consultants, Inc., Homestead, PA

IBC 07-26

8:30am

Construction Engineering for the World's Longest Cable-Stayed Bridges

Robin Sham, *Maunsell AECOM, Shatin, Hong Kong*

The work conducted for Sutong and Stonecutters Bridges, the world's two longest cable-stayed bridges, is the finest example of the application of construction engineering to tackling the technical challenges in large bridge construction. The very significant construction engineering activities include contractor's design; development of construction methodology; stage-by-stage erection analyses; bridge geometry monitoring and control; bridge aerodynamics and wind tunnel testing; vibration mitigation measures/devices, substantial falsework and cofferdam design; navigation studies and marine traffic management; marine jetty design; temporary traffic management; geotechnical engineering; together with research and development, amongst many other coordinated strands of work.

IBC 07-27

8:55am

Cable Stay Acceptance Testing Program for the Stonecutters Bridge

Thomas Weinmann, *CTLGroup, Skokie, IL*; Brian West, *Maeda, Hitachi, Yokogawa, Hsin Chong J.V., Kowloon, Hong Kong*; Gary Gan, PE, PhD, *CTL Group, Skokie, IL*

The Stonecutters Bridge in Hong Kong spans a record 1018m and will contain more than 100 stay cables. This paper discusses the approach taken by the owner and engineer to determine applicable cable-stay acceptance testing specifications for the Stonecutters Bridge and presents in detail the actual test program and results.

IBC 07-28

9:20am

Seismic Design of a Base Isolated Arch Bridge with Complex Site Soil Conditions

Paul Chung, Jason Fang, *Caltrans, Bridge Design Office, So.2, Diamond Bar, CA*

The paper describes the analytical studies and design solution to a proposed concrete arch bridge on a uniquely complex site geological condition. The proposed bridge is located in Los Angeles and crosses over the 405 freeway. The proposed structure measures 175.5 m in length and stands 25 m over the canyon which the 405 freeway passes under. The existing concrete box bridge will be replaced by a longer span structure to accommodate lane widening of the 405 freeway. The replacement will be a concrete arch bridge to symbolize a doorway to the Beverly Hills/Santa Monica community.

IBC 07-29

9:55am

The Creation of a Culturally Significant BridgeBradley Touchstone, *The DodStone Group, Tallahassee, FL*; Faith Baum, *Illumination Arts LLC, Bloomfield, NJ*

A community's social goals for major bridge projects can become manifest through integration of lighting and aesthetics. Faith Baum and Bradley Touchstone will discuss how to successfully integrate these design components into the development of bridge projects without negatively impacting cost, constructability and maintenance.

BREAK**10:10-10:30am**

IBC 07-30

10:30am

Perry Street Bridge ReplacementJames O'Leary, Richard Walters, *HNTB, Cleveland, OH*

The Ohio Department of Transportation wanted to replace the only bridge crossing the Maumee River in Napoleon, Ohio, during a one year period. They called upon HNTB to develop a methodology enabling the replacement. The use of innovative construction techniques facilitated the successful replacement in nine months.

IBC 07-31

10:55am

Allegheny River Bridge ReplacementBrian Ranck, PE, *PA Turnpike Commission, Harrisburg, PA*; Gregory D. Stiles, PE, *FIGG, Exton, PA*

The Pennsylvania Turnpike plans to replace its Allegheny River crossing near Pittsburgh. Dual cast-in-place concrete box girder bridges using balanced cantilever construction will replace the existing bridge. Either pipe pile or drilled shaft foundations will support 100-foot high piers with curved sides that reflect the arching superstructure shape.

IBC 07-32

11:20am

Design Alternatives of Liberty Memorial BridgeJimin Huang, Theunis van de Veen, *HDR Engineering, Inc., Tampa, FL*; Todd Lang, *HDR Engineering Inc., Minneapolis, MN*

This paper introduces and compares concrete and steel design alternatives of the 2369-foot-long Liberty Memorial Bridge in Bismark, ND. The concrete alternative did not have a cost advantage over the steel alternative for many reasons, including a unique pier design, the increase of concrete unit prices, and construction staging challenges.

Special Interest Session: Bridge Inspection and Management Software**Time: 8:30 – 11:00am****Room: Allegheny (1st Floor)****Presenters: Marty Neaman, Michael Schellhase, Jeremy Shaffer**
InspectTech, Pittsburgh, PA

InspectTech has worked with bridge owners and engineering firms in several states to develop a powerful and easy to use software package that benefits both inspectors and managers. We will be discussing experiences and observations on best practices for using computer technology in conducting inspections and managing bridge data.

Two sessions will be presented; the first will address problems and solutions for organizations performing inspections. The second covers challenges that bridge managers and owners face. A demonstration of relevant components of InspectTech's BridgeInspect™ software suite will be given in both sessions.

Bridge Inspection Software

8:30-9:30am

Learn how inspectors are using computer software to improve report quality and achieve significant time savings in data collection and report generation. The software has been used on several thousand structures ranging from 3000' bridges to simple spans to culverts to mass transit supports.

Bridge Management Software

10:00-11:00am

This presentation describes a popular bridge management system that places all bridge information (pictures, sketches, inspection data, etc.) just a click away via a powerful web-accessible interface. Owners and managers can now easily generate standard and custom reports, search across all fields, automatically flag problem areas, and compare data and trends from past inspection years.

Special Interest Session: FRP Composites – Proven Performance in Bridge Construction

Time: 9:00am – 12:00noon
Room: Duquesne Room (1st Floor)

FRP composites used in new bridge construction and rehabilitation provide bridge engineers with innovative solutions for today's infrastructure problems. Composites benefits such as light weight, high strength, and corrosion resistance contribute to easy transportation, offsite construction, modular assembly, rapid installation, and long-term durability. These benefits provide cost-effective solutions and value to the bridge owner. Composites multiple strengths and wide ranging design possibilities are illustrated through case histories of decks and structural rehabilitation of bridges. Session attendees will learn of new products and applications, how to design and specify composites, and installation techniques using examples from field applications.

Composites Multiple Strengths and Infinite Possibilities

John P Busel, *American Composites Manufacturers Association*

Tangier Island, VA: Site of the First Installation for an Innovative FRP Bridge Deck System

Dan Richards, Ph.D., PE., *ZellComp, Inc.*

Strengthening Steel Bridges with Composites

Sami H. Rizkalla, PhD, PE., *North Carolina State University*

Durability is in the Details for Successful FRP decks

Mark Henderson, PE., *LJB, Inc.*

Renovation of a Historic Bridge Using an FRP Decking System

Ron Watson, *R J Watson, Inc*

Hybrid-Composite Beams - The Sensible Bridge Alternative

John R. Hillman, PE, SE, *TENG*

Seminar: Constructability of Steel Bridges: Smart, Safe, and Fast (NSBA)

Time: 1:00 – 5:00pm
Room: Sterling's (1st Floor)
Presenters: The National Steel Bridge Alliance (NSBA)

Field construction activities have been receiving much more consideration in recent years; both to deliver bridge projects with less impact on the motoring public and also to avoid accidents which can endanger both construction workers and the public.

This session would be a series of presentations on "Best Practices" in the Construction of Steel Bridges; focusing on design for fast construction, along with case studies of successful construction projects, from the contractor perspective.

Special Interest Session: The Archtec System: A Unique Bridge Reinforcement System

Time: 1:00 – 5:00pm
Room: Benedum (1st Floor)
Presenters: Cintec America, Inc.

In North America, there are over 1,000 masonry arch bridges. Most are well over 100 years of age and many are registered as historical structures. Virtually every state in the U.S. has programs to upgrade, rehabilitate and/or widen many of these bridges for safety purposes as well as to accommodate the larger, heavier vehicles that use public roads today. The Archtec system, a product of Cintec America, Inc., provides a unique bridge reinforcement system. This system is a complete diagnostic, design and installation system designed to strengthen masonry arch bridges.

Archtec provides optimum level of strengthening while causing virtually no change to the appearance of the bridge, and can be installed without closing the bridge to traffic. In addition, the Archtec system can be installed in approximately one-fourth the time of the conventional concrete saddling method of reinforcement.

In this session, we will discuss all aspects of bridge evaluation and strengthening as well as discuss several bridges that were strengthened with this unique, cost effective system.

Special Interest Session: RSA Floating Bridge

Time: 1:00 – 5 :00pm
Room: Duquesne (1st Floor)
Presenters: RSA and HNTB

The invention describes a factory prefabricated floating vehicular and pedestrian bridge of long lengths (typical 2,200') which can be easily and quickly re-assembled at site and connected to pre-constructed concrete footings to produce a safe four lane causeway with an additional center lane for service vehicles or pedestrian walkway. The floating bridge also has means to open from its middle to angle outwards allowing boat traffic through the center opening and then be pulled back and instantly reassembled as a safe floating vehicular roadway.

The invention can be freighted in equal sized pieces to the site via standard trucks or barged as a floating element to be floated into place at the site.

Distinct elements of the bridge include series of winch motors mounted to concrete blocks at or near the shore with cables connected to portions of the connected floating bridge elements. These programmed winch cables both stabilize the bridge against currents, tides, wind, etc. when connected as a single roadway length. Then as the center of the bridge is transitioned open one side cables are pulled in one direction as those connected floating elements curve away from the middle to allow for boat passage. The winch motors then reverse the cables to pull the bridge back to center as the center transition bridge automatically reconnects the bridge for vehicular traffic. Means to guide upstream floating debris and ice to the shore by use of floating booms with connected floating fence elements protect the bridge before debris can contact the bridge. Afterwards means to "self clean" the debris by opening both the floating boom and bridge are part of the maintenance operations.

RSA developed this bridge concept with HNTB Corporation.

IBC BUS BRIDGE TOUR

Time: 1:00 to 5:00pm
Presenter: John Nedley, PE
Robson Forensic, Inc
Cranberry Twp., PA

Pittsburgh is the city of bridges, and the IBC is pleased to once again offer our tour of unique bridges. The tour this year includes stops at the Mossie Blvd. Bridge and the historic Hot Metal Bridge over the Monongahela River. These two structures are scheduled to be under construction in 2007. We also plan to visit the historic George Westinghouse Memorial Bridge, which when built included the longest concrete arch span in the world. This guided tour departs from the main entrance of the Hilton Hotel at 1 pm, please arrive 15 minutes early to board the bus. An additional fee of \$40 is required - please make your reservation at the Registration Desk.

LONG SPAN BRIDGES

Time: 1:30 - 5:00pm
Room: Ballroom 2
Chair: Herbert M. Mandel, PE
GAI Consultants, Inc., Homestead, PA

IBC 07-33 **1:30pm**

Construction of the New Tacoma Narrows Bridge

Thomas Spoth, Augusto Molina, Seth Condell, Joe Viola,
Parsons, New York, NY

The new Tacoma Narrows suspension bridge will consist of a 2,800 ft. main span supported by reinforced concrete towers founded on caissons of open-dredge construction. Gravity anchorages will secure the main cables. An integral truss / orthotropic deck system was designed to include an option for future lower roadway or LRT system.

IBC 07-34 **1:55pm**

Design and Construction of the Chao Phraya River Cable-Stayed Bridge

Ruchu Hsu, *PB Americas, New York, NY*

This paper will discuss the design and construction of a cable-stayed bridge, which has a 500 m (1640') main span. The bridge is located in Bangkok, Thailand. Total 8 gantries in 4 pairs are erecting bridge deck segments simultaneously. The bridge has been designed for easy and ready access to all major components.

IBC 07-35 **2:20pm**

Cable-Stayed Bridges- Discovering Alarming Distress and Damages

Armin Mehrabi, *Bridge Engineering Solutions, Lewiston, NY*; Christopher Ligozio, *Construction Technology Laboratories, Skokie, IL*

A series of shortcomings related to design, fabrication, and erection of stay cable systems, alarmingly common in many bridges are described, providing useful feedback to designers and contractors for deficiencies in some common details and methods, and for avoiding similar problems for future bridges. New inspection methods are also discussed.

IBC 07-36 **2:45pm**

Design Build of a 350m long LNG Pipeline Suspension Bridge in Africa

Andreas Felber, David Queen, *Buckland & Taylor, North Vancouver, BC, Canada*

In a period of 20 months, Buckland & Taylor Ltd. Designed and Bechtel built a 350 m main span suspension bridge in Africa. The bridge carries a LNG pipeline and other utilities from a plant at an elevation of 60 m to a loading facility in the ocean.

BREAK **3:15-3:45pm**

Construction of Tied Arch Bridge Across Ohio River and Blennerhassett Island

Gregor Wollmann, *Michael Baker Jr. Inc., Blacksburg, VA*; Ben Beerman, Julie Hartman, *West Virginia Department of Transportation, Charleston, WV*; Scott Benjamin, *Walsh Construction Company*

Construction of a new crossing of the Ohio River and Blennerhassett Island near Parkersburg, West Virginia is currently under way. The structure comprises an 878.5-ft long steel tied arch bridge over the main navigational channel of the river and plate girder approach bridges on Ohio and West Virginia side. The total length of the structure is 4,008 ft, which will make it the longest bridge in West Virginia. With a bid price of \$120 Mill. it is also the largest highway project ever awarded by the West Virginia Department of Highways. A unique feature of the tied arch span is its network hanger arrangement, ranking it among the longest span structures of this type in the world.

High Tech Cable Stayed Bridge creates Economic Development Opportunities

Chris Burgess, SE, PE, *FIGG, Denver, CO*; Tom Doe, PE, *Maine Department of Transportation, Bucksport, ME*

Maine's first cable-stayed bridge is an extraordinary transportation asset. This 2,120' emergency replacement bridge opened 40 months after the need was identified and includes state of the art cable technology, unique aesthetics and the world's tallest public bridge observatory.

Toledo's Newest Landmark

Manuel Carballo, PE, SE, *FIGG, Toledo, OH*; Michael Gramza, PE, *Ohio DOT, Toledo, OH*

Toledo's I-280 Veterans' Glass City Skyway bridge is the largest single project undertaken to date by Ohio DOT and consists of approximately 27,000 linear feet of precast concrete segmental construction and a unique cable-stayed main span unit that includes innovative structural components and aesthetic features.

Time: 1:30 - 5:00pm
Room: Ballroom 3
Chair: Kenneth J. Wright, PE
HDR Engineering, Inc., Pittsburgh, PA

New Developments In Precast Prestressed Concrete Bridge Systems In Washington State

Bijan Khaleghi, *Washington State DOT, Tumwater, WA*

As the trend towards long-span girders continues, the need for an optimum girder section becomes greater. To meet this need, WSDOT has developed new girders to expand the use of precast prestressed girders in bridge construction. A comprehensive review of WSDOT long-span prestressed girders are presented in this article.

Lateral Cantilevered Bridge for the Hillside Roadway Construction in Steep-Sloped Mountainous Area

Fang Li, *Chongqing Jiaotong University / TRC Imbsen, Folsom, CA*; Zhixiang Zhou, *Chongqing Jiaotong University, Chongqing, China*

For steep-sloped hillside roadway construction, an integral cantilevered frame system with ground tieback anchors was introduced as an alternative to the deep cuts and high fills approach, which would often lead to potential slope instability problems and initiate new landslides during service life, as well as increase the life cycle cost of the project.

Evaluation and Prediction of Lateral Load Distribution and Dynamic Behavior for the Sandwich Plate System In Bridge Applications

Devin Harris, Tommy Cousins, Thomas Murray, Elisa Sotelino, *Virginia Polytechnic Institute and State University, Blacksburg, VA*

An innovative solution on the market, the Sandwich Plate System (SPS), has been utilized in a series of bridges in Canada and is being implemented in two bridges in the United States. SPS is comprised of a rigid polyurethane core bound by steel face; the system is typically cast as prefabricated panels that serve as the bridge deck. The system lightweight, simple to construct, and can be tailored for both new construction and repair/rehabilitation applications.

IBC 07-43

2:45pm

Mechanical Behaviour of Reactive Powder Concrete Bridge Beams

Ri Gao, *Beijing Jiaotong University, Beijing, China*;
Chenggen Li, *First Railway Survey & Design Inst. Lanzhou, China*

A new type of bridge beam, which is made of reactive powder concrete (RPC) precast segment prestressed by external tendons, is presented. The structural concept is based on the combination of the advantages of RPC and prestress technology. Based on the optimal mixture proportion of RPC, eight simply supported RPC beams are made and tested. The mechanical properties of RPC beams, including section deformation, load-displacement relationship, failure forms, crack distribution, crack extension and ultimate flexural capacity, are discussed.

BREAK

3:15-3:45pm

IBC 07-44

3:45pm

Unique Features of the Michigan Modified Twin Arches

Muthiah Kasi, *alfred benesch and company, Chicago, IL*;
George Horas, *alfred benesch and company, Allentown, PA*;
Ihab Darwish, *alfred benesch and company, Lansing, MI*

A first of its kind, the Gateway Bridge in Detroit, Michigan offers several unique structural accomplishments to the field of engineering. Uneven arch lengths, pressurized ribs, an underground concrete tie and even Super Bowl XL inspired football-shaped braces were all incorporated in this state-of-the-art design.

IBC 07-45

4:10pm

Deck Replacement of the Port Authority Bus Ramps

David M. Marcic, PE, *Hardesty & Hanover, LLP, Annapolis, MD*

This paper presents the technical challenges and solutions for performing complex deck replacement work using pre-cast concrete deck panels, as well as working in a congested urban environment where traffic demand is high, and impact to local residents is of concern.

IBC 07-46

4:35pm

Innovative Arch Span

Richard Beaupre, Christoph Dilger, *URS Corp, Tampa, FL*; Cliff Hall, *URS Corp, Dallas, TX*

The Arapaho Road Bridge in the town of Addison, Texas was not only designed to relieve traffic but become a signature bridge for the Town. The challenge was to come up with a solution that met the Town's desire to create a unique landmark yet was still economically feasible.

INSPECTION

Time: 1:30 - 5:00pm

Room: Ballroom 4

Chair: Jeffrey J. Campbell, PE

Michael Baker Jr., Inc., Moon Twp., PA

IBC 07-47

1:30pm

Inspection and Retrofit of a Segmental Concrete Box Girder Bridge

Steven Kaufman, PE, Michael Abrahams, PE, *PB Americas, Inc., New York, NY*

The Jamestown-Verrazano Bridge features a 4,950-foot-long pre-stressed segmental box girder main bridge. The paper will discuss in some detail inspection findings and repairs that are underway including tendon voids and the use of a carbon-fiber reinforced polymer reinforcement system for the cracked webs of the pier tables.

IBC 07-48

1:55pm

Post Fatigue Evaluation for Existing Steel Bridges Rehabilitation and Strengthening

Wang Chunsheng, Hao Xianwu, *Chang'an University, Xi'an, China*

Post fatigue evaluation is very necessary for existing steel bridge strengthening in order to make their continued safe use while at the same time avoiding unnecessary repairs. According to post fatigue life evaluation results using fracture mechanics, strengthening effectiveness and maintenance strategies for Wubao Yellow River Bridge are determined.

IBC 07-49

2:20pm

Active Fatigue Crack Inspection, Detection, and Analysis on Three Steel Pennsylvania Bridges Using the Electrochemical Fatigue Sensor

Marybeth Miceli, *Sam Schwartz, PLLC, New York, NY*;
Brent Phares, PE, PhD, *Material Technologies, Los Angeles, CA*; Monty Moshier, PhD, *MAKStride, LLC, Washington, UT*

The paper will briefly discuss the technical background of the EFS system, several case studies with a specific interest in testing completed in October 2006 on three Pennsylvania Interstate steel bridges with documented cracks at fatigue sensitive details. Using EFS, the engineering team determined that some of the cracks were continuing to actively grow while other retrofitted locations were not exhibiting growth, allowing for deferment of repair funds. Also, the engineering team identified additional active cracking locations not previously documented.

IBC 07-50 2:45pm**Re-evaluation of Weight Limits for Six Bridges in Montgomery County Maryland**Ed Zhou, *URS Corporation, Hunt Valley, MD*; Tim Cupples, *Montgomery County DPWT Maryland, Rockville, MD*

Montgomery County of Maryland owns and maintains 266 bridges. As a pilot program for re-evaluating weight postings, 6 of their 74 weight restricted bridges were selected for an advanced analysis through combined field load testing and finite element modeling. The project was successfully completed in 2005 and the work procedure and results are summarized in this paper. As a result of this project, weight postings of all six bridges have been removed.

BREAK 3:15-3:45pm**IBC 07-51** 3:45pm**Remote Structural Monitoring for Asset Management**Raymond Hartle, *Michael Baker Jr. Inc., Moon Township, PA*; Paul Majoris, *PennDOT, Indiana, PA*

This paper will demonstrate how the application of current sensor technology combined with remote data transfer using wireless technology, and the integration of a 3D finite element modeling, will save bridge owners money and simultaneously illustrate management solutions for safe bridge operations and a longer service life.

IBC 07-52 4:10pm**Findings of the Initial Inspection of the CA/T Segmental Bridges in Boston- Successes and Shortcomings**Firooz Panah, Reed Brockman, *DMJM Harris, Boston, MA*

This paper provides a summary of the inspection results and performance of a number of bridge components including wearing surfaces, superstructure boxes, longitudinal and transverse closure pours, seismic restrainers, and bearings. With over 40,000 ft of segmental bridges, the project is one of the largest applications of precast concrete segmental construction in an urban setting.

IBC 07-53 4:35pm**City of Baltimore - From Paper to Electronic in Bridge Management and Inspection**Tony Grant, *City of Baltimore, Baltimore, MD*; Jeremy Schaffer, *InspectTech, Pittsburgh, PA*

This presentation covers a background on the city bridge program and discusses a new approach taken by a team of consultants and the city on the latest inspection cycle. An integrated software system was used to enhance and streamline the process both within the consultant team and the city.

SEMINAR: AASHTO Load and Resistance Factor Rating Workshop (LRFR)

Time: 8:00am – 12:00noon
Room: Sterling's (1st Floor)
Presenters: Dr. Firas Sheikh Ibrahim, PE
FHWA - Chair;
 Mr. Bala Sivakumar, PE,
Lichtenstein Engineers - Instructor

The American Association of State and Highway Officials (AASHTO) and the Federal Highway Administration (FHWA) have set a transition date of October 1, 2007 after which all new bridges shall be designed by the LRFD Bridge Design Specifications. This has created an opportunity for rating engineers to convert their practice to the new Load and Resistance Rating (LRFR) Methodology when rating these newly designed bridges, and when rating existing bridges designed with the Standard Specifications.

To assist the bridge community in a successful transition to LRFR, this workshop will serve as an introduction level portion of a series of educational seminars and training courses that will be available through the FHWA over the next few years. The workshop will provide an overview of LRFR and will include an introduction to load rating, loads, load factors, and load rating process. Two simple rating examples of steel and concrete bridges will be discussed.

Special Interest Session: Western Pennsylvania Transportation Research Forum

Presented by the University of Pittsburgh Department of Civil and Environmental Engineering

Time: 8:00 am – 12:00 noon
Room: Benedum Room, 1st Floor
Presenters: Kent A. Harries, PhD, University of Pittsburgh, Pittsburgh, PA

The forum will highlight both research-in-progress and recently completed bridge and transportation research funded largely by PennDOT and NCHRP. The forum will be focused on technology transfer and will be of interest to DOT engineers, consultants and practitioners. Brief presentations will be followed by questions. The forum will close with a panel discussion consisting of the presenters and other invited representatives. Following the IBC, Forum attendees will receive a CD consisting of the presented papers and a transcript of the questions, responses and panel discussion. The forum is open to all IBC attendees.

CONSTRUCTION

Time: 8:00am - 12:30pm
Room: Ballroom 2
Chair: Mary Lou Ralls, PE
Ralls Newman, LLC, Austin, TX

IBC 07-54 8:00am**Design and Construction of World Longest Rail and Highway Tie-Arch - Chongqing Yangtze River Crossing**

Man-Chung Tang, *T.Y. Lin International, San Francisco, CA*; Junling Sun, *Sun Engineering Consultants International, Inc., Guangzhou, China*; Hua Yusheng, Li Huaji, *Chongqing City Construction and Investment Co., Chongqing, China*

Currently under construction, the Chongqing Caiyuanba Bridge will carry six lanes of highway and two pedestrian walkways on its upper deck plus two tracks of monrails on its lower deck. Scheduled to be open to traffic in 2007, this 420 m. span tied arch will be a world record of its type.

IBC 07-55 8:25am**Demolition Study of 300-ft Truss Incorporated in Bridge Replacement Bid Documents**

John Shanks, PE, Ed Cinadr, PE, *Burgess & Niple, Inc., Columbus, OH*

Alerting Contractors of demolition complexity, a study for dismantling a 300-foot truss over the Mahoning River and two active railroad bridges in proximity of high-voltage transmission lines was incorporated in the bridge replacement bid documents including one feasible demolition scheme with crane sizes, configurations, positions, picks, clearances, and shoring/causeway locations.

IBC 07-56 8:50am**Overnight Delivery - The Story of NJDOT's US 1 Freeway Bridge Reconstruction Project**

Xiaohua Cheng, *New Jersey Department of Transportation, Trenton, NJ*; Harry Capers, *Arora and Associates, PC, Lawrenceville, NJ*

Our highway bridges are subjected to increasing traffic volumes and structural deficiency, and must be continuously renewed while maintaining traffic flow. This paper presents the application of prefab construction technology that involved replacing bridge superstructures over weekends. It shows an example supporting the FHWA's accelerated bridge construction decision making framework.

IBC 07-57 9:15am**Advances and Trends in Implementing HPC in the Western States**

Tarif Jaber, *Jaber Engineering Consulting, Inc., Scottsdale, AZ*

This presentation reviews western states programs, policies and approaches in extending the service life of their bridge decks. While some states are designing and building their bridges for 120 years service life, others are in the early stages of such programs, exploring new technology and materials for their bridges.

IBC 07-58 9:40am**Accelerated Concrete and Maturity Testing for Rapid Replacement of Bridge Decks**

Walid Najjar, Steven Smith, *Chas. H. Sells, Inc., Briarcliff Manor, NY*

Strength development of accelerated concrete in re-constructed deck slabs of an elevated steel viaduct is monitored through maturity loggers inside the slabs. Early-opening-to-traffic is based on field data and pre-established strength-maturity correlation. Laboratory testing of accelerated concrete and field application of the maturity method are presented.

BREAK 10:05-10:20am**IBC 07-59** 10:20am**National Perspective on Accelerated Bridge Construction**

Gary S. Jakovich, PE, Vasant Mistry, *Federal Highway Administration, Washington, DC*

This paper will provide information on the state of the art practices of the 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.

IBC 07-60 10:45am**Ramp H of the E-470/I-70 Interchange**

Kenneth C. Saindon, PE, Chuck Agins, PE, Dave Holst, PE, *DMJM Harris, Denver, CO*

Ramp H of the E-470/I-70 Interchange is a direct connector of 1616' overall length. This complex structure is composed of precast/curved/spliced/post-tensioned concrete tub girders. The challenge of designing this structure within the context of design/build is presented along with innovative solutions developed as well as lessons learned from construction.

IBC 07-61 **11:10am**

Accelerated Bridge Construction in Areas of High or Moderate Seismicity

Bijan Khaleghi, *WSDOT, Tumwater, WA*

In recent years, there has been an increasing public demand for accelerated bridge construction using precast members. This paper examines the applicability of the AASHTO LRFD Specifications to precast bridges in areas of high or moderate seismicity. It discusses the different seismic design methodologies and their application to precast bridges.

IBC 07-62 **11:35am**

Design Practices for Lagging used with Soldier Pile Walls

Stuart Bennion, *WSDOT Bridge and Structures, Olympia, WA*

A comparison of AASHTO LRFD Bridge Design Specifications (3rd edition, 2004), Washington State Bridge Design Manual (LRFD 2006), and the FHWA Table of "Recommended Thickness of Timber Lagging" (Report No. FHWA-RD-75-130) shows why the timber lagging thicknesses vary from state contracts to those designed by contractors.

REHABILITATION

Time: 8:00am - 12:30pm
Room: Ballroom 3
Chair: Louis J. Ruzzi, PE

Pennsylvania Dept. of Transportation, Bridgeville, PA

IBC 07-63 **8:00am**

Ebey Island Viaduct Bridge: Pilot Project to Comprehensive Carbon Fiber Rehabilitation

Ralph Dornsife, *Washington State Dept. of Transportation - Bridge & Structures Office, Olympia, WA*

This 6,850' long bridge comprising deteriorating precast concrete super-structure elements is being rehabilitated to extend its service life. Capacity loss assessment, structural design, work sequencing, and traffic control issues will be presented with construction photographs, durability observations, and lessons learned from a pilot project completed several years ago.

IBC 07-64 **8:25am**

Design for Main Structures - Alexander Hamilton Bridge

Martin Kendall, Chih Ping, *Edwards and Kelcey Inc, New York, NY*

The analysis and design of the main bridge structures carrying the Cross Bronx Expressway over the Harlem River is described. This includes the linking together and upgrading of two parallel hingeless arch bridges and the rehabilitation of the approach span multi-girder structures for increase in redundancy and seismic upgrade.

IBC 07-65 **8:50am**

Widening and Rehabilitation of Homestead Grays Bridge

Dan Wills, *ms consultants, inc., Coraopolis, PA*

This paper will present the unique design solutions and innovative construction techniques required to widen and rehabilitate this 3100 foot-long Wichert Truss bridge with two intersecting ramps. While maintaining two lanes of traffic at all times through girders, floorbeams, expansion dams and bearings were replaced. The reuse of the existing 70-year-old concrete filled grid deck and pedestrian railing will also be discussed.

IBC 07-66 **9:15am**

Rehabilitation of the Haverhill-Bath Covered Bridge

Robert Durfee, *DuBois & King, Inc., Nashua, NH*

A detailed analysis was performed to determine the load sharing relationship between the two primary structural systems (trusses and arches). The analysis identified design deficiencies in the trusses and the arches. Modifications were designed that did not affect the aesthetic or historic fabric of the bridge, an important requirement as part of the rehabilitation.

IBC 07-67 **9:40am**

Preserving Our Nation's Transportation Heritage (Restoring the Blaine Hill Stone-Arch Bridge)

Ronald Bovetsky, *KCI Technologies, Inc., Akron, OH*; Wade Rider, *Lichtenstein Consulting Engineers, Inc., Langhorne, PA*

A case history will be presented illustrating the rehabilitation of Spans 2 and 3 of the Blaine Hill stone arch bridge, constructed in 1828 in Ohio, utilizing traditional repair measures along with the construction of a load bearing reinforced concrete arch inside the existing masonry structure.

BREAK **10:05-10:20am**

IBC 07-68 **10:20am**

Heat Straightening and Heat Shortening of Truss Eyebars to Repair Flood Damage

Roger Stanley, PE, MSCE, *DMJM Harris, Philadelphia, PA*; Michael J. Abrahams, PE, *PB Americas, New York, NY*; Roy W. Little, PE, *Delaware River Joint Toll Bridge Commission, Morrisville, PA*

In June of 2006, a near-record flood damaged 21 eyebar members of the 1040 foot truss bridge crossing the Delaware River between New Hope, Pennsylvania and Lambertville, New Jersey. Heat straightening was undertaken to remove flood-induced eyebar deformations. Heat shortening was also performed to equalize the loads and restore capacity in these 100 plus year old components.

IBC 07-69

10:45am

Development History, Specifications, and Case Studies of Polyester Polymer Concrete Overlays for Bridge Deck Protection

Paul D. Krauss, *Wiss Janney Elstner Associates, Northbrook, IL*; Al Klail, *Kwik Bond Polymers, LLC, Ramon, CA*

An overlay system of HMWM methacrylate primer and flexible polyester resin polymer concrete has been in continuous use since 1981. Returns traffic within 2 hours of paving down to 40 F. While used over 25 years, plastic concrete remains new to most agencies making writing quality specifications difficult. Agencies need to adopt quality overlay specifications, test and evaluate specific systems in the field, and develop a quality control and acceptance program based on performance results.

IBC 07-70

11:10am

Emergency Pier Repairs to the Liberty Memorial Bridge, Bismarck, North Dakota

Michael Marks, *Kadrmars, Lee & Jackson, Inc., Fairfield, NJ*; Wade Frank, *Kadrmars, Lee & Jackson, Inc., Moorhead, MN*

This paper describes innovative design and construction techniques utilized to repair severe cracking and deterioration found on river pier columns supporting 480 foot truss superstructures. These deficiencies eventually required closure of the structure. Using a design-build concept, repairs were designed, constructed and the bridge re-opened within 7 weeks.

IBC 07-71

11:35am

Bronx-Whitestone Bridge Redecking

Genaro Velez, *Weidlinger Associates, New York, NY*; Omar Fernandez, *MTA Bridges and Tunnels, Bronx, NY*

The Bronx-Whitestone Bridge has put on a lot of weight from additions tacked on to widen the bridge from four to six lanes. Engineers determined that the extra pounds, which were placing undue strain on the aging structure's suspension cables, could cause complications. In response, a new deck-stiffening system was constructed that shed some of the bridge's weight and extend its lifespan.

DESIGN, PART 2

Time: 8:00am - 12:30pm

Room: Ballroom 4

Chair: Matthew P. McTish, PE

McTish, Kunkel and Associates, Allentown, PA

IBC 07-72

8:00am

Revised New Recommended Seismic Design Guide Specifications of The U.S. Highway Bridges

W. Phillip Yen, *FHWA, McLean, VA*; Richard Pratt, *Alaska DOT, Juneau, AK*

This Paper briefly discussed the major changes of revised recommendations for AASHTO's New Bridge's Seismic Design Guide Specifications. The revised specifications were completed by a National Cooperative Highway Research Program project in May, 2006. NCHRP 2007 / Task 193 will be considered for adoption by AASHTO in 2007.

IBC 07-73

8:25am

Seismic Response of Long Span Bridges Subjected to Near Fault Ground Motions

George Lee, *Multidisciplinary Center for Earthquake Engineering Research(MCEER), Buffalo, NY*

In this paper, three types of long span bridges are selected as the model bridges for study under the selected near fault ground motions (which has dominate velocity pulse and large displacement): the first one is a suspension bridge which has longest period, the second one is a cable stayed bridge with less longer fundamental period, and the third one is a steel arch bridge with the least longer fundamental period. Their seismic responses are compared with that from a well used near fault ground motion record 1940 EL Centro (which does not contain any of these pulses). The different effects of such near fault ground motions on the responses of the three selected typical long span bridges are discussed.

IBC 07-74

8:50am

The Replacement of the US 98 Bridge over Mexico Beach Canal

Tom Romanowich, *Parsons Brinckerhoff, Jacksonville, FL*; John Poulson, *Parsons Brinckerhoff, Tampa, FL*

The project is located in Mexico Beach, Florida; a coastal resort community located in the Florida panhandle. The medium span precast concrete arch alternate was selected after consideration of the improved vertical and horizontal clearance for marine traffic and the superior aesthetics.

IBC 07-75

9:15am

Transportation Infrastructure Design-Build at APM Terminal, Portsmouth, VA.

Greg Lassiter, PE, Tyson Rosser, PE, *Vanasse Hangen Brustlin, Inc., Boston, MA*

The first Design-Build contract awarded by the Virginia Department of Transportation (VDOT) was propelled by the private sector. When A.P.Moeller-Maersk (APM) of Denmark sought to expand its facilities in Portsmouth, Virginia and build the first privately developed U.S. container terminal, the roads and bridges leading to the site were found to be inadequate. The state of Virginia quickly responded to this need by using the Design-Build delivery system. Critical to the success of the APM-Maersk port operations is an aggressively timed construction to extend access from Route 164 to the port site. Expediently solving the significant infrastructure, right-of-way, and permitting challenges was tailor-made for the Design-Build partnership.

IBC 07-76

9:40am

Probabilistic Damage Control Approach (PDCA) for Seismic Design of Bridges

Amir Malek, Abbas Tourzani, Sam Ataya, Mark Mahan, *California Department of Transportation, Sacramento, CA*

Probabilistic Damage Control Approach (PDCA) is a new assessment procedure to quantify damage to bridge columns subjected to various probabilistic seismic events. The level of damage is represented by Damage Index coefficient. This paper provides general information on application of PDCA in seismic design and also post-event evaluation of bridges.

BREAK

10:05-10:20am

IBC 07-77

10:20am

Breathing Life into Dreams

Nedim Alca, P.Eng., Hisham H. Ibrahim, Peter G. Buckland, *Buckland & Taylor Ltd., North Vancouver, Canada*

Today, signature bridges are more popular than ever with both the public and bridge owners. Many authorities are therefore looking for bridge crossings that "make a statement". The questions that immediately arise then are: what is the statement, why do public and owners want signature bridges, what does it take to build one?

IBC 07-78

10:45am

Context Sensitive Segmental Design Over the Northeast Cape Fear River in North Carolina

Satrajit Das, PhD, PE, *URS Corporation - North Carolina, Morrisville, NC*; Santiago Rodriguez, *T.Y. Lin International, Raleigh, NC*

Context sensitive solutions played a prominent role in the successful completion of this award winning six-lane bridge project on US-17 over the Northeast Cape Fear River, NC. The bridge consists of 6,300 feet of pre-stressed concrete girder approach spans and a 1,037 - foot concrete segmental unit with a 479-foot channel span.

IBC 07-79

11:10am

A Study on Extradosed Bridges for Road and Railway Traffic

Wouter De Corte, *Ghent University, Ghent, Belgium*

Extradosed bridges are post-tensioned concrete bridges with post tensioning cables reaching beyond the physical boundaries of the concrete section. Although its appearance resembles a cable stay bridge with shorter towers, an extradosed bridge functions rather as a normal post-tensioned bridge resisting vertical loads primarily by bending rather than by the vertical component of the cable force creating flexible intermediate supports. The paper provides initial design guidelines for a continuous multi-span extradosed bridge, and this for road bridges as well as railway bridges.

IBC 07-80

11:35am

Behavior of Integral Abutments with Tall Back walls

Faheem Ahmad, Nasser Zoubi, *E. L. Robinson Engineering Co., Charleston, WV*; Ahmed N K Mongi, *West Virginia Division of Highways, Charleston, WV*

This paper presents studies conducted on the height of abutment back wall and its influence on the behavior of integral abutments. Factors investigated included wall height, abutment skew, pile orientation and type of backfill. Based on the studies, upper limit for the height of integral abutment back wall is presented.

ATTENDEE BUFFET LUNCH

All Registered Attendees of the IBC are welcome to enjoy lunch served throughout all of the IBC Exhibit Hall. Enjoy this opportunity to browse the Exhibits while finding different buffet items at each booth. The Attendees Buffet Lunch will begin at 12:00noon and is available until 1:30, at the closing of the Exhibit Hall!

SPECIAL STRUCTURES

Time: 1:30 – 3:45pm
Room: Ballroom 2
Chair: Donald W. Herbert, PE

Pennsylvania Dept. of Transportation, Uniontown, PA

IBC 07-81

1:30pm

Replacing The MLK Bascule Bridge

David Rogowski, *Genesis Structures, Inc., Kansas City, MO*; Jeff Kracun, *National Engineering and Contracting Company, Canonsburg, PA*

The MLK Replacement Project required removal of four delicately balanced bascule leaves followed by installation of four new bascule frames, all performed on the Maumee River. This paper highlights the innovative erection process developed to carefully choreograph a combination of large deck barges, heavy duty mobile transports, erection gantries, lifting towers and auxiliary counterweights.

IBC 07-82 1:55pm

A New Concept For A Vertical Lift Bridge In Rouen

Michel Moussard, *Arcadis, Savres, France*

A large new lift bridge is being completed over the River Seine in Rouen (France). To fit into the city, engineers and architects have designed an innovative structure, which combines efficiency, reliability, and elegance. Its masterpiece is the lifting system, located in between the two independent spans.

IBC 07-83 2:20pm

Two Steel Bridges for the High Speed Railway line Madrid-Barcelona-French Border

Juan Sobrino, *Pedelta, Barcelona, Spain*

The two first steel bridges for the High Speed Railway line Madrid-Barcelona-France have been recently completed near Barcelona. Both viaducts were designed according to a similar concept: composite steel-concrete deck suspended on structural steel tied members. Bridges have been incrementally launched. The main span is 75 m (250 ft)

IBC 07-84 2:45pm

Designing Bridges For Aircraft

Ted Bush, *HDR Engineering, Inc., Boise, ID*; Rob Turton, *HDR Engineering, Inc., Phoenix, AZ*

This presentation will provide attendees with useful guidance on the design and detailing of major airside structures. An overview of typical airside design considerations will be followed by a presentation of a case study - the design and construction of the Taxiway Sierra Underpass at Phoenix's Sky Harbor International Airport.

IBC 07-85 3:10pm

Design and Construction of the World Longest Girder Bridge - The New Chongqing ShiBanPo Yangtze River Crossing

Junling (John) Sun, *Sun Engineering Consultants International, Inc., Guangzhou, China*; Yusheng Hua, *Chongqing City Construction Investment Co., Chongqing, China*

The New Chongqing ShiBanPo Yangtze River Crossing is a segmental frame girder bridge with a main span of 330 meters. Open to traffic in Sept. 2006, this bridge sets the new span length records for all girder bridges. This paper presents some of the critical issues both in design and construction.

PEDESTRIAN BRIDGES

Time: 1:30 – 3:45pm
Room: Ballroom 3
Chair: Arthur W. Hedgren, Jr., PhD, PE
Consultant, Pittsburgh, PA

IBC 07-86 1:30pm

Design of a Curved, Self-Anchored Suspension Bridge for the New San Diego Ballpark

Tomás Kompfner, PhD, PE, Jiri Strasky, PhD, PE, *Strasky+Anatech, San Diego, CA*; Joseph Tognoli, PE, Daniel Fitzwilliam, PE, *T.Y. Lin International, San Diego, CA*

A pedestrian bridge will link the San Diego Ballpark with a parking garage. It will be a curved suspension bridge supported on only one side with a span of 353' and a 20' width. The structural behavior of this structure will be explained, and some innovative details required will be shown.

IBC 07-87 1:55pm

Construction of the Wichita Riverfront Cable-Stayed Pedestrian Bridges

David Byers, John Boschert, *Genesis Structures, Inc., Kansas City, MO*; Matt Inlow, *Dondlinger & Sons Construction Co., Wichita, KS*

As part of Wichita's four-phase riverfront development program, two pedestrian bridges located at the confluence of the Arkansas and Little Arkansas rivers are being constructed. The bridges will connect Exploration Place, a modern, interactive science museum, with the Mid-America All-Indian Center, surrounding lands that lie between the rivers and bicycle and hiking trails on the banks of both rivers. The city of Wichita, Kansas authorized a cable-stayed bridge design concept with asymmetrical tower locations. The focus of this presentation will be to present the very unique aspects of pedestrian bridge construction.

IBC 07-88 2:20pm

Stabilization of a Two-Girder Pedestrian Bridge During Construction

Brian Kozy, Shawn Tunstall, *HDR Engineering, Inc., Pittsburgh, PA*

This paper discusses stability analysis and bracing of a two-girder pedestrian bridge during construction in Newport, Minnesota. Analysis showed the bridge may be unstable during the deck pour due to "system buckling". FE buckling analyses were performed to develop a bracing scheme that minimized the construction costs and delays.

IBC 07-89

2:55pm

Omaha Pedestrian Bridge - Deck Aerodynamics and Derivation of Wind Loads via 3D Force Balance Testing

Jamieson K. Robinson, PEng, *Motioneering Inc., Guelph, Ontario, Canada*; Ted Zoli, H. Hutton, C. Brown, *HNTB Corporation, New York, NY*; Stoyan Stoyanoff, *RWDI, Canada*

The 3000 ft Missouri River Pedestrian Bridge will be one of the longest pedestrian spans ever constructed, and features a unique, horizontally curved, cable-stayed main span. As such, it poses many structural, architectural, and wind engineering challenges. These will be discussed, including wind tunnel sectional model tests to confirm stability, a novel 3D Force balance wind tunnel method that was devised to study three-dimensional wind effects on the curved superstructure, and pedestrian-induced vibration engineering assessments.

IBC 07-90

3:20pm

Walkway over the Hudson

Peter Melewski, PE, *Bergmann Associates, Albany, NY*; Mal McLaren, Dave Thurnherr, *Walkway over the Hudson, Poughkeepsie, NY*

The 1.25 mile long Poughkeepsie Railroad Bridge was an engineering wonder when it opened in 1888. Design is underway to establish it as a public park and walkway, as well as a bridge engineering educational resource. The walkway will connect 30 miles of recreational trails, and provide breathtaking views.

The IBC Exhibit Hall features more than 120 different firms and organizations who are part of the bridge industry. Attendees are encouraged to browse the entire Exhibit Hall - Ballroom 1, Foyer, Kings Garden and Rooms 200-204 - during each day of the IBC. Exhibit Hall hours are:

- Monday, June 4 from 11:00am until 7:00pm,
- Tuesday, June 5 from 7:30am until 5:00pm, and on
- Wednesday, June 6 from 7:30am until 1:30pm.

Special events are scheduled each day during the IBC, and include

- the Opening Welcome Party on Monday from 5:00-7:00pm,
- the Tuesday morning Continental Breakfast at 7:30am, and
- the Wednesday Luncheon Buffet from 12:00-1:30pm.

Acrow Corporation of America

Booth: 84

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Advitam, Inc.

Booth: 113

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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. Advitam'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.

American Bridge Manufacturing

Booth: 23

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 Web Site: www.americanbridge.net

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EXHIBITORS

American Composites Manufacturers Association

Booth: 97 & 98

Contact: John P. Busel
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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. Manufacturers products on display include structural profiles, bridge decks, pedestrian bridges, rebar, piling, and concrete repair/strengthening systems. More information at www.acmanet.org.

American Galvanizers Association

Booth: 33

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Serving the needs of specifiers, architects, engineers, contractors, and fabricators throughout North America since 1935, the American Galvanizers Association (AGA) provides information on the most innovative applications and state-of-the-art technological developments in hot-dip galvanizing for corrosion protection. Created to educate and train in the specification and use of hot-dip galvanized steel, the AGA maintains a large technical library, distributes numerous industry publications, offers free educational seminars, and provides toll-free technical support to the specifying community.

Applied Foundation Testing

Booth: 96

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Arcadis

Booth: 100

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EXHIBITORS

Automatic Power, Inc.

Booth: 43

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Axim Concrete

Booth: 31

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Bar Splice Products, Inc.

Booth: 18

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Manufacturer of mechanical splices for rebar.

Barnhart Crane & Rigging

Booth: 116

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EXHIBITORS

BendTec, Inc.

Booth: 12

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Bridge design & engineering magazine

Booth: 71

Contact: Liz Akers
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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 Manufacturers Association (BGFMA)

Booth: 64

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Web Site: 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 Exodermic™ decking. The role of the association is to promote the use of grid reinforced concrete bridge decks through data collection, research/development and education.

Bridges Magazine

Booth: 15

Contact: Kevin Carmody
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EXHIBITORS

Bridon

Booth: 73

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Bureau Veritas

Booth: 110

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Booth: 57

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Web Site: www.burgessniple.com

Burgess & Niple's 50 bridge engineers perform new design, rehabilitation, plan review, load rating and inspection. In the last 5 years, we've designed 200 bridges and inspected over 3,000 bridges. Our national inspection expertise covers 30 states and 50 bridges with main spans of more than 500 feet.

Campbell Scientific, Inc.

Booth: 105

Contact: Ken Stevens
Phone: 435-753-2342
Fax: 435-750-9540
E-mail: kstevens@campbellsci.com
Web Site: www.campbellsci.com

Campbell Scientific, Inc. manufactures data acquisition systems for bridge monitoring and testing. Proven on many of the world's premier bridges, our rugged, stand-alone, DC powered instrumentation features multiple telemetry options, low power use, non-volatile data storage, rainfall histograms, real-time FFTs, and rugged reliability even in harsh, remote environments.

EXHIBITORS

Cargill - SafeLane

Booth: 13

Contact: Bob Persichetti
Phone: 717-757-5823
Fax: 717-755-3336
E-mail: bob_persichetti@cargill.com
Web Site: www.cargill.com

SafeLane Surface Overlay system is a patented polymer pavement overlay that reduces ice of frost formation on its surface while protecting infrastructure from corrosion and chloride intrusion. A polymer epoxy is mixed with aggregate and applied to pavement surfaces. This aggregate has the unique ability to store deicing liquids and releases them when weather conditions demand it. The result is safer, more durable roads and bridges that are easier to maintain.

Carolina Stalite Company

Booth: 67

Contact: Dr. Reid W. Castrodale, PE
Phone: 704-637-1515
Fax: 704-642-1572
E-mail: rcastrsdale@stalite.com
Web Site: www.stalite.com

Stalite is a high performance lightweight aggregate manufactured by expanding slate in a rotary kiln at high temperatures. Lightweight concrete produced using Stalite has reduced density that improves structural efficiency and reduces handling costs for precast elements, enhanced durability and design compressive strengths of 10,000 psi or more.

Chase Construction Products

Booth: 81

Contact: Doug Zuberer
Phone: 800-356-6007
Fax: 518-346-1110
E-mail: dzuberer@chasecorp.com
Web Site: 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 Capital Services, E-poxy Engineered Materials and Royston brands of innovative products have been specified for use on major projects in the transportation, industrial and architectural markets.

ChemCo Systems

Booth: 10

Contact: John Bors
Phone: 650-261-3790
Fax: 650-261-3799
E-mail: bors@chemcosystems.com
Web Site: www.chemcosystems.com

Epoxy Asphalt by ChemCo Systems has a 35-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 2) as a paving surface for orthotropic steel decks where toughness and elastic composite behavior are critical.

EXHIBITORS

Cintec

Booth: 5

Contact: Michael Ferrell
Phone: 1-800-363-6066
Fax: 1-800-461-1862
E-mail: mferrell@cintec.com
Web Site: www.cintec.com

The Cintec Anchor System is a versatile method of structural reinforcement that is tailored to meet the specific strengthening and repair requirements of individual projects. Cintec anchors are used in; masonry bridges, retaining walls, masonry bridge piers, wing walls, harbor walls, and historical buildings. These are just some of the areas a Cintec anchor can be used. Cintec anchors can stabilize and strengthen an un-reinforced masonry structure with out the need of external and internal steel bracing.

Clodfelter Bridge & Structures Int'l, Inc. (CBSI) Booth: 107 & 108

Contact: Jerry V. Clodfelter
Phone: 713-675-1180
Fax: 713-678-7610
E-mail: jvclodfelter@cbsii.com
Web Site: www.cbsiusa.com

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 both 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.

CoatingsPro Magazine

T1

Phone: 858-490-2708
Fax: 858-272-0622
Web Site: www.coatingspromag.com

CoatingsPro Magazine is the broad-based magazine reaching professionals at all levels in the world of protective paint and coatings. Our readers define the market of concrete and steel applications as they span key industries. Including Pipeline and Petrochemical Processing, Roofing and Waterproofing, Water and Wastewater, Industrial Building and Maintenance, Power Generation, Bridge Structures, Marine and Shipyard, and Military Applications

Computers & Structures, Inc.

Booth: 50

Contact: Asif Halmbullah
Phone: 646-546-5994
Fax: 646-330-5471
E-mail: info@csiberkeley.com
Web Site: www.csiberkeley.com

Software solutions for structural and earthquake engineering for bridges and other structures; bridge templates for generating bridge models, automated bridge live load analysis, design with influence lines at surfaces; segmental bridge construction analysis (including creep and shrinkage), post-tensioned concrete box girder design, cable supported/stayed bridge analysis, base isolation and pushover analysis features.

EXHIBITORS

Concrete Reinforcing Steel Institute (CRSI)

Booth: 60

Contact: Darren Szrom
Phone: 847-517-1200
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E-mail: dszrom@crsi.org
Web Site: www.crsi.org

Founded in 1924, the Concrete Reinforcing Steel Institute (CRSI) is a trade association that stands as the authoritative resource for information related to steel reinforced concrete construction. Serving the needs of architects, engineers and construction professionals, CRSI offers many technical publications, design aids, software programs, educational seminars, and award programs. Visit www.crsi.org

Con-Serv, Inc.

Booth: 69

Contact: Richard Drummond
Phone: 800-541-1044
Web Site: www.con-servinc.com

CON-SERV Inc. manufactures support bearing systems, including multi-rotational bearings such as pot and spherical bearings for the transportation, pollution, power, petrochemical, industrial and commercial industries. Headquartered in Georgetown, SC, CON-SERV Inc. also manufactures specialty expansion devices for sports stadiums, arenas and convention centers, as well as private projects.

Consolidated Systems Inc.

Booth: 49

Contact: Jonathan Causey
Phone: 803-251-5034
Fax: 803-744-6287
E-mail: jonathan.causey@csisteel.com
Web Site: www.csisteel.com

With 50 years of service to the construction industry, the Csi - Metal Dek Group™ designs and manufactures various Bridge Dek™ profiles that can accommodate design spans ranging from 18" to over 13'. Csi offers permanent forming systems that can be utilized in both non-aggressive and extremely aggressive environments. Csi sales, engineering, and project management personnel work collectively to provide Engineered Solutions™ for its customers.

CONTECH Bridge Solutions, Inc.

Booth: 59

Contact: Shirley Cultice
Phone: 800-526-3999
Fax: 937-254-8365
E-mail: cultices@contechbridge.com
Web Site: www.contechbridge.com

CONTECH Bridge Solutions offers a comprehensive line of vehicular and pedestrian bridge products to suit any application need. A variety of plate, precast and truss products include CONTECH Structural Plate, CON/SPAN Bridge System, the BEBO Arch System, Steadfast Bridges and Continental Bridge. More than 65,000 structures are installed worldwide.

EXHIBITORS

Corrpro Companies, Inc.

Booth: 16

Contact: Clem Firlotte, PE
Phone: 330-723-5082
Fax: 330-722-7606
E-mail: cfirlotte@corrpro.com
Web Site: corrpro.com

Corrpro offers complete cathodic protection and coating services to protect your structures, whether steel or concrete, from corrosion.

CTLGroup

Booth: 80

Contact: Adrian Ciolko
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E-mail: aciolko@CTLGroup.com
Web Site: 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

D.S. Brown Company, The

Booth: 83

Contact: Bob Rose
Phone: 732-451-0070
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E-mail: brose@dsbrown.com
Web Site: www.dsbrown.com

Design and manufacture engineered bridge construction materials including expansion joint systems, structural bearing assemblies (elastomeric, HLMR and spherical), Cableguard™ elastomeric wrap (corrosion protection for bridge cables), FRP (Fiber Reinforced Polymers) and Exodermic™ (composite, unfilled steel grid) Bridge Decks.

D'Appolonia

Booth: 29

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Fax: 412-856-9535
E-mail: cleitze@dappolonia.com
Web Site: 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 foundations, earth retention and excavation support structures, slope stabilization, ground improvement, subsidence mitigation, dewatering, instrumentation, geophysical reconnaissance and LRFD training for highway bridge substructures.

EXHIBITORS

Dayton Superior Corp.

Booth: 95

Contact: Ben Rivera
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E-mail: benrivera@daytonsuperior.com
Web Site: www.daytonsuperior.com

Dayton Superior, concrete accessories for all your needs including Aztec composites and plastic rebar chairs, Bar-Lock mechanical couplers for rebar splices, The Taperlock System of tapered thread for rebar splicing, a full line of Pre-cast products, and construction chemicals.

DeAngelo Brothers, Inc.

Booth: 47

Contact: Fred Grant
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Fax: 570-459-5500
E-mail: fgrant@dbiservices.com
Web Site: www.dbiservices.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: 77

Contact: Wally Smith
Phone: 800-227-4059 or 970-858-3678
Fax: 970-858-3679
E-mail: w.smith@deeryamerican.com
Web Site: www.deeryamerican.com

Manufacturer and Distributor of the FlexAble Bridge Joint System, mastic deck repair products in black or gray, waterproofing membranes and crack and joint sealants.

Degussa / Cyro Industries

Booth: 104

Contact: Laura Torsiello
Phone: 973-541-8242
Fax: 973-541-8447
E-mail: laura.torsiello@degussa.com
Web Site: www.cyro.com

CYRO Industries offers transparent PARAGLAS SOUNDSTOP® Noise Barrier Sheet, the aesthetic solution for noise control. PARAGLAS SOUNDSTOP® TL-4 System is a lightweight noise barrier system for bridges and elevated roadway applications. It has been successfully tested under NCHRP 350 Level 4 conditions. This system incorporates PARAGLAS SOUNDSTOP GS CC, which meets the EN1794 Standard for the performance of noise barriers. CYRO Industries is a wholly-owned subsidiary of Degussa.

EXHIBITORS

DMJM Harris

Booth: 38

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Web Site: www.dmjmharris.com

DMJM Harris is a full-service engineering firm with offices in Pittsburgh, Philadelphia, Horsham and Harrisburg, PA, as well as in 25 other states. DMJM Harris offers professional services in Highway Design, Structural Engineering, NBIS and Structural Inspection, Traffic Studies and Engineering, Planning, ITS Design, Electrified Railroad Design, Mass Transit Systems Design, Program Management, Construction Management and Construction Inspection. DMJM Harris is one of 14 operating companies of AECOM, and is responsible for AECOM's ranking as the #1 firm in Transportation on ENR's current list of the Top 500 Design Firms. AECOM is also ranked #1 by ENR among "Pure" Designers in the engineering industry.

Dow Corning / SSI

Booth: 11

Contact: Frank Chiles PE
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Fax: 918-582-7510
E-mail: frankchiles@ssicm.com
Web Site: www.ssicm.com

Dow Corning / SSI manufactures and supplies silicone joint sealants, the 'XJS' Expansion Joint System and repair products for bridges, highways, airports and parking structures.

Dynamic Surface Applications

Booth: 103

Contact: Mike Stachowicz
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E-mail: mstachowicz@dsa-ltd.com
Web Site: www.dsa-ltd.com

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

Enerpac

Booth: 200 & 201

Contact: Roberta Moring
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Web Site: 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.

EXHIBITORS

ERICO

Booth: 35

Contact: Lou Colarusso
Phone: 440-248-0100
Fax: 440-248-0723
Web Site: www.erico.com

ERICO is a leading designer, manufacturer and marketer of precision-engineered specialty metal products serving global niche product markets in a diverse range of electrical, construction, utility and rail applications. LENTCON: Rebar splicing systems and other reinforcing products utilized to connect steel reinforcement rods in concrete.

Eriksson Technologies, Inc.

Booth: 54

Contact: Cathy Shoemaker
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E-mail: shoemaker@lrfd.com
Web Site: www.eriktech.com

Eriksson Technologies develops, markets, and supports bridge design software for the AASHTO LRFD and AASHTO Standard Specifications. Eriksson also offers technical training, engineering consulting services, and technical publications, and is the under writer and maintainer of LRFD.com.

Euclid Chemical Company, The

Booth: 62

Contact: Steve Scarpinato
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Fax: 815-522-2323
E-mail: sscarpinato@euclidchemical.com
Web Site: www.euclidchemical.com

The Euclid Chemical Company is a leading manufacturer of polymer bridge deck overlay systems, epoxy adhesives and coatings, concrete and masonry admixtures, curving and sealing compounds, cementitious and epoxy grouts, joint fillers and sealants, as well as a complete line of concrete repair and restoration materials. These products are available world wide.

Figg Engineering Group

Booth: 2

Contact: W. Jay Rohleder, Jr., PE, SE
Phone: 610-594-2460
Fax: 610-594-6690
E-mail: jrohleder@figgbridge.com
Web Site: www.figgbridge.com

The FIGG Team is exclusively focused on the design, construction engineering and inspection of major bridges across America, creating landmarks and enhancing communities in which those bridges are located. FIGG's Bridge Design Charette process encourages public involvement in the design, building consensus as participants vote for elements of the design. FIGG-designed bridges have been honored with 253 awards for aesthetics, innovation and efficiency. The FIGG Team's passion is creating bridges as art, through visions inspired by owners and communities.

EXHIBITORS

Fort Miller Company, Inc., The

Booth: 44

Contact: Scott Harrigan
Phone: 518-695-5000
Fax: 518-695-4970
E-mail: sharrigan@fmgroup.com
Web Site: www.fortmiller.com

The Fort Miller Co., Inc., a Northeastern United States Based precast concrete company, manufactures a broad spectrum of precast concrete products for the transportation industry. This includes such bridge related products as precast concrete box culverts, both three and four sided, bridge deck panels, pier caps, parapets, piers and segmental box girders. It also includes concrete and steel composite products such as Precast Concrete Steel Composite Superstructure Units (formerly Inverset) and light-weight bolt-down Effideck units.

FreeSpan Systems, Inc.

Booth: 112

Contact: Michael Swalling
Phone: 907-272-3461
Fax: 907-2746002
E-mail: mswalling@swalling.com
Web Site: www.swalling.com

FreeSpan Systems, Inc. provides design/build services for construction of ultra long span light duty bridges throughout North America.

Geotechnics, Inc.

Booth: 22

Contact: Randy O'Rourke
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Fax: 412-823-8999
E-mail: rorourke@geotechnics.net
Web Site: www.geotechnics.net

Geotechnics is an independent accredited laboratory that is nationally recognized for providing high quality geotechnical and geosynthetic testing services. Geotechnics has been accredited by The American Association of State Highway and Transportation Officials (AASHTO), The United States Army Corps of Engineers (COE) and The Geosynthetics Accreditation Institute-Laboratory Accreditation Program (GAI-LAP). Geotechnics also provides Dynamic Pile Testing with a Pile Driving Analyzer® (PDA) to quickly and confidently assess the capacity and integrity of driven piles. Geotechnics currently has operations in Pittsburgh, Pennsylvania and Raleigh, North Carolina.

Gerdau Ameristeel

Booth: 78

Contact: Andy Marquardt
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Web Site: www.gerdauameristeel.com

Major steel producer in the United States. Also major fabricator and coating operations for concrete reinforcing steel in North America.

EXHIBITORS

Greenman-Pedersen, Inc./SG Pinney & Assocs. Instrument Sales, Inc. Booth: 58

Contact: Pat Marazzi
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Fax: 772-337-0294
E-mail: pmarazzi@gpinet.com
Web Site: www.sginstrumentsales.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 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 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 CCC&L a (new) GPI Company specializes in expert witness testimony, coating conditions survey, including a full service laboratory.

Harcon Corporation Booth: 87

Contact: Harry Stoltzfus
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Fax: 717-687-9296
E-mail: harry@harconcorp.com
Web Site: www.harconcorp.com

Harcon Corporation provides bridge access equipment and rigging services to consultants performing bridge inspections and contractors performing bridge maintenance. Our focus is on eliminating lane closures. Since 1988 we've provided our services on thousands of structures all over the eastern half of the United States.

Hardesty & Hanover, LLP Booth: 92 & 93

Contact: Hank C. Pokigo
Phone: 410-573-1999
Fax: 410-573-0650
E-mail: hpokigo@hardesty-hanover.com
Web Site: www.hardesty-hanover.com

Hardesty & Hanover, a world renowned bridge engineering firm, boasts 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.

EXHIBITORS

Hatch Mott MacDonald Booth: 79

Contact: Tom Jaworski
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Web Site: www.hatchmott.com

Hatch Mott MacDonald is an award winning full service consulting engineering firm offering public and private clients multi-disciplined expertise and comprehensive capabilities in planning, environmental assessments, studies and analysis, design, architecture, procurement, construction engineering and inspection, project, program and construction management and facility maintenance and operations in the fields of bridges, highways, rail/transit, tunnels, aviation/airports, water conveyance, wastewater/cso, environmental, gas pipelines, building and utilities. With roots that date back more than 100 years and a world-wide pool of nearly 10,000 employees to draw from, Hatch Mott MacDonald has earned a reputation for technical excellence, innovation and client responsiveness on some of the most prominent and challenging projects.

Hilman Rollers Booth: 32

Contact: Jeff Hill
Phone: 732-462-6277
Fax: 732-462-6355
E-mail: sales@hilmanrollers.com
Web Site: 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.

Houston Structures Booth: 48

Contact: Mike Ulven
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E-mail: mikeu@ulvencompanies.com
Web Site: 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.

EXHIBITORS

Illumination Arts

Booth: 115

Contact: Faith Baum
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Web Site: www.illuminationarts.com

Illumination Arts collaborates with bridge engineers, architects, owners and communities to develop aesthetic lighting solutions for signature bridges across the United States and around the globe. Their designs help to create night time signatures for the communities in which they are located, while being mindful of energy, maintenance and dark sky concerns.

InspectTech

Booth: 42

Contact: Jeremy Shaffer, PhD
Phone: 412-681-1521
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E-mail: shaffer@inspecttech.com
Web Site: www.inspecttech.com

InspectTech provides easy to use software solutions that streamline the inspection process from onsite to back-office. The BridgeInspectT 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.

IVS Hydrodemolition Services

Booth: 90

Contact: Ron Ferdig
Phone: 724-335-2829
Fax: 724-335-4756
E-mail: ron.ferdig@ivsgroup.com
Web Site: www.ivsgroup.com

Providing the best hydrodemolition services in the nation.

JPCL

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Phone: 1 (800) 837-8303
Fax: 412 431 5428
Web Site: www.paintsquare.com

For 22 years, JPCL has been the leader - "the Journal of Record" for the protective and marine coatings market. As the official journal of SSPC, the Society for Protective Coatings, JPCL provides a reliable, non-biased voice for good practice and new technology, delivering sound technical guidance and painting a coherent and comprehensive picture of developing trends, regulations, standards, management strategies, economics, and other issues facing industry professionals.

EXHIBITORS

KTA-Tator, Inc.

Booth: 61

Contact: Eric Kline
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Fax: 412-788-1306
E-mail: info@kta.com
Web Site: 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, and distributes inspection and monitoring equipment. An independent and unbiased philosophy has permitted KTA to provide expert professional services to its clients for over 50 years.

LARSA Inc.

Booth: 72

Contact: Ali Karakaplan
Phone: 212-736-4326
Fax: 631-206-3610
E-mail: ali@larsausa.com
Web Site: www.larsausa.com

LARSA's flagship product, LARSA 2000/4th Dimension, brings two decades of experience in the structural analysis of bridges and structures to the new millennium. Based on a rock-solid, truly 3D, nonlinear analysis engine, LARSA 2000/4D boasts staged construction analysis, tendons, influence-based live load analysis, time-dependent materials, dynamic analyses for earthquake analysis, and a completely new user interface with a lean learning curve. LARSA is located in New York and is partnered with Research Engineers (STAAD) offices world-wide to provide unbeatable support services.

LEAP Software, Inc.

Booth: 65

Contact: Lee Tanase
Phone: 813-985-9170
Fax: 813-980-3642
E-mail: lee.tanase@leapsoft.com
Web Site: www.leapsoft.com

LEAP Software is the Nation's leading developer of bridge analysis and design software solutions. Our new LEAP Bridge Suite with Integrated Bridge Software Technology eliminates repetitive data entry, reduces errors, and allows users to retrieve bridge components as often as needed. LEAP Bridge is available in many configurations including precast/prestressed concrete beam, precast spliced/post-tensioned girders, and CIP concrete post-tensioned box girders or slabs.

Lehigh University - ATLSS Research Center

Booth: 30

Contact: Robert .P. Alpago
Phone: 610-758-6107
Fax: 610-758-5902
E-mail: rpa2@lehigh.edu
Web Site: www.atlss.lehigh.edu

The Lehigh University ATLSS Research Center has extensive experience in laboratory and field instrumentation, testing, and fatigue and strength evaluation of bridges.

EXHIBITORS

LiquidConcrete, Inc.

Booth: 102

Contact: Tom Hippensteel
Phone: 800-201-9300 x717
Fax: 866-349-1922
E-mail: tomh@liquidconcrete.com
Web Site: www.liquidconcrete.com

LiquidConcrete, Inc. is a Seattle-based industrial coatings manufacturer focused on delivering high-performance solutions for bridge/highway pavement maintenance and repair. 10 Minute Traffic Ready pavement repair, Penetrating Deck Sealers, Expansion Joint Headers, Pothole and Spall Repair.

LUSAS

Booth: 82

Contact: Terry Cakebread
Phone: 1-800-97-LUSAS (ext. 1)
Fax: 212-295-2121
E-mail: terry.cakebread@lusas.com
Web Site: 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 optimisation facility simplifies worst-case loading patterns. AASHTO and other design codes supported. Extensive results processing facilities are provided.

McClain & Co., Inc.

Booth: 55

Contact: Valerie Ellington
Phone: 540-423-1110
Fax: 540-423-1066
E-mail: sales@mcclainandcompany.com
Web Site: 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: 68

Contact: Chris Douty
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E-mail: support@mdxsoftware.com
Web Site: www.mdxsoftware.com

Developer of curved and straight steel bridge design and rating software for AASHTO ASD, LFD, and LRFD.

EXHIBITORS

Michael Baker Jr., Inc.

Booth: 63

Contact: Jeffrey J. Campbell
Phone: 412-269-7948
Fax: 412-375-3998
E-mail: jcampbell@mbakercorp.com
Web Site: www.mbakercorp.com

At Baker, we take pride in designing and maintaining bridges both large and small. Our broadbased experience allows us to offer diverse services from design and design management of bridges, to bridge inspection and training, to developing specialty software. From steel to concrete, from cable-stayed to truss - Baker knows bridges.

Moffatt & Nichol

Booth: 86

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Web Site: www.moffatnichol.com

Moffatt & Nichol's structural capabilities encompass all aspects of highway and railroad bridge design including planning, inspections, widening, rehabilitation and final design of new structures. Specialty capabilities include navigation crossings, deep marine foundations, vessel collision analysis, pier protection systems, scour analysis, seismic analysis and retrofit, and security assessments.

Monotube Pile Corporation

Booth: 27

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E-mail: monotube@raex.com
Web Site: 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: 26

Contact: Jody Lovsness
Phone: 402-758-9099
Fax: 402-778-9499
E-mail: lovsness@nsbaweb.org
Web Site: 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.

EXHIBITORS

Neel Company, The

Booth: 4

Contact: John Dallain
Phone: 703-913-7858
Fax: 703-913-7859
E-mail: info@neelco.com
Web Site: 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.

Non-Destructive Testing Group

Booth: 56

Contact: Mike Forbes
Phone: 616-891-3570
Fax: 616-891-3565
E-mail: mforbes@ndtg.net
Web Site: www.ndtg.net

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

Olson Engineering, Inc.

Booth: 203

Contact: Larry Olson
Phone: 303-423-1212
E-mail: cathys@olsonengineering.com
Web Site: www.olsonengineering.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.

Palmer Engineering

Booth: 53

Contact: Jim Gallit
Phone: 859-744-1218
Fax: 859-744-1266
E-mail: palmer@palmernet.com
Web Site: www.palmernet.com

Palmer Engineering has served the public for over thirty years in the areas of highway and bridge design, surveying, land development, and environmental services.

EXHIBITORS

Paxton-Mitchell Company

Booth: 21

Contact: Mark Pfeffer
Phone: 402-345-6767 x128
Fax: 402-345-6772
E-mail: mpfeffer@paxton-mitchell.com
Web Site: www.paxton-mitchell.com

Manufacturer of the Snooper® Bridge Inspection and Maintenance Crane. Snooper®, the most widely used bridge inspection crane in the world, is capable of under bridge reaches from 30' to 60' and available in basket, platform, or combination configurations.

Pedelta

Booth: 202

Contact: Brian Revuelta
Phone: 305-648-0010
Fax: 305-648-0018
E-mail: brevuelta@pedelta.com
Web Site: www.pedelta.com

International Structural Engineering company specialized in bridges since 1994, headquartered in Barcelona with branches in Bogota and Miami. With more than 300 bridges designed to date, using new materials such as fibers and stainless steel, we believe innovation is the essence of our work, provoking an encounter between appearance and strength.

Pennoni Associates Inc.

Booth: 9

Contact: Jennifer Laning, PE
Phone: 302-655-4451 ext. 3629
Fax: 302-654-2895
E-mail: jlaning@pennoni.com
Web Site: www.pennoni.com

Pennoni Associates is a multi-disciplined consulting engineering firm with 21 offices throughout the eastern United States. Pennoni, ranked as a best place to work in PA and NJ, offers services in Transportation, Underwater Inspection, Civil/Municipal, Environmental, Inspection and Testing, Surveying, Site Design and Landscape Architecture, MEP, Geotechnical and Structural Engineering.

Poly-Carb, Inc.

Booth: 68B

Contact: Dan Patacca
Phone: 440-248-1223
Fax: 440-248-1513
E-mail: dan@poly-carb.com
Web Site: www.poly-carb.com

Manufacturer of 1/4" - 3/8" water & chemical resistant, anti-skid epoxy-urethane copolymer bridge deck overlay system; gravity fed crack welding systems; box beam waterproofing membranes; concrete coatings & sealers; grouts and adhesives; polyurea type membranes; RPM adhesives; and long life pavement marking systems.

EXHIBITORS

Portland Cement Association

Booth: 99

Contact: Shri B. Bhide, Phd, PE, SE
Phone: 847-972-9100
Fax: 847-972-9101
E-mail: sbhide@cement.org
Web Site: 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: 6

Contact: Rick Swansbro
Phone: 815-873-3868
Fax: 815-873-3391
E-mail: rick.swansbro@fluidpower.spx.com
Web Site: 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.

Precast / Prestressed Concrete Institute (PCI)

Booth: 17

Contact: John S. Dick
Phone: 312-786-0300
Fax: 312-786-0353
E-mail: j.dick@pci.org
Web Site: www.pci.org

PCI is a unique association of producers, suppliers and professionals. It is dedicated to fostering greater understanding of the design and use of precast and prestressed concrete. It also encourages and recognizes excellence in the manufacture and use of these materials. Our professional members guide the Institute's efforts in product innovation, new technology adaptation, design methods development, training and quality assurance.

Prestressed Concrete Association of Pennsylvania

Booth: 14

Contact: Heinrich O. Bonstedt
Phone: 610-395-2338
Fax: 610-395-8478
E-mail: bonstedt@pcap.org
Web Site: 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.

EXHIBITORS

Q.B. Associates, Inc.

Booth: 28

Contact: Neil Brown
Phone: 207-743-8885
Fax: 207-743-0598
E-mail: neil@spg-antirock.com
Web Site: www.spg-antirock.com

Antirock has been protecting bridge decks world wide since 1976 with it's first installation still in place 30 years later. The bond created between the bridge deck and Antirock is unsurpassed by any waterproofing product in use today.

R.J. Watson, Inc.

Booth: 40

Contact: Marc D. Stafford
Phone: 716-691-3301
Fax: 716-691-3305
E-mail: mstafford@rjwatson.com
Web Site: www.rjwatson.com

R.J. Watson, Inc. specializes in the design manufacture and testing of high load multirotational bearings, seismic isolation devices, joint sealing systems, waterproofing membranes and high strength fiber composite materials used to strengthen and rehabilitate structural members such as columns, beams, walls, piles, girders and slabs. In addition, R.J. Watson is now involved in the design and supply of FRP bridge deck and girder systems.

RADCON Formula #7

Booth: 39

Contact: Edward L Byrne
Phone: 612 9362 3511
Fax: 612 9362 3244
E-mail: sales@radcrete.com.au
Web Site: www.radcrete.com.au

Radcrete Pacific is global distributor for RADCON #7 - an advanced biochemical technology that waterproofs concrete for life by penetrating concrete and creating a gel within cracks, pores, and capillaries - sealing cracks to 0.08" and resealing hairline cracks 0.012" that develop after treatment. This US-invention, with a proven 30-year track record, suits new and existing structures.

Rampart Hydro Services

Booth: 106

Contact: Beth W. Newbold
Phone: 412-262-4511
Fax: 412-262-6188
E-mail: sales@rampart-hydro.com
Web Site: www.rampart-hydro.com

Rampart is the world leader in ultra-high pressure (UHP) Hydrodemolition and HydroCleaning. Ultra high pressure Hydrodemolition uses less water; is environmentally friendly; provides a superior bond; and is fast and cost effective. Rampart has used Hydrodemolition on bridge surfaces and substructures, dams, tunnels, and parking garages. Rampart now offers complete vacuum cleanup of the water and debris creating Dry Hydrodemolition. We look forward to helping you with your demanding projects.

EXHIBITORS

Reinforced Earth Company, The **Booth: 19**

Contact: Alicia Olson
Phone: 703-821-1175
Fax: 703-821-1815
E-mail: nfo@reinforcedearth.com
Web Site: www.reinforcedearth.com

The Reinforced Earth Company is a world leader in the design and supply of proprietary retaining wall system and earth-related technologies. Recognized as the supplier to some of our nation's largest highway construction projects, working as a subcontractor/material supplier on Department of Transportation and privately owned projects, we perform all duties associated with our jobs from sales, marketing, engineering, design, supply and construction assistance.

RJD Industries, Inc. **Booth: 76**

Contact: Randall Decker
Phone: 949-582-0191
Fax: 949-582-0995
E-mail: r-decker@pacbell.net
Web Site: www.rjdindustries.com

Manufacturer of products that avoid corrosion in concrete: SuperTie, fiberglass formtie systems; SpliceSeal, concrete reinforcement protection system; and FiberDowel, corrosion proof joint restraint system.

Roads & Bridges Magazine **Booth: 36**

Contact: Rick Schwer
Phone: 847-391-1000
Fax: 847-390-0408
E-mail: rschwer@sngmail.com
Web Site: 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.

Safway Services, Inc. **Booth: 45**

Contact: Jerry Dolly
Phone: 518-381-6000
Fax: 518-381-4613
E-mail: j.thomas@safway.com
Web Site: 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. At Beeche safety is our number one goal. All QuikDeck™ components are designed to meet or exceed OSHA safety regulations.

EXHIBITORS

Salit Specialty Rebar **Booth: 52**

Contact: Kevin R. Cornell
Phone: 716-299-1990
Fax: 716-299-1993
E-mail: kcornell@stainlessrebar.com
Web Site: www.stainlessrebar.com

Salit Specialty Rebar (SSR) is North America's stainless rebar specialist. At SSR we offer shipping across North America, fabricated rebar, dedicated equipment, on time delivery, cut to length, and shrink wrapped to avoid contamination. SSR offers all sizes in both metric and Imperial from our vast inventory.

SAS Suite LLC **Booth: 41**

Contact: Lubin Gao
Phone: 443-280-3155
Fax: 703-644-9360
E-mail: lgao@sassuite.com
Web Site: www.sassuite.com

SAS Suite is a progressive company dedicated to delivering software solutions to bridge engineers. Its flagship SNAPBridge™ Suite is a powerful and easy-to-use software for analysis and design of bridges. Bringing cutting-edge software technology and extensive bridge design expertise to customers, SAS Suite ensures that every solution meets specific requirements.

Scougal Rubber **Booth: 1**

Contact: Rob Anderson
Phone: 206-763-2650
Fax: 206-764-4984
E-mail: roba@scougalrubber.com
Web Site: www.scougalrubber.com

Manufacturer of Steel Reinforced and Plain Elastomeric Bearings, PTFE Slide Bearings, Vibration Isolators as well as Cable Dampers and Sealing Boots. In business since 1916 Scougal Rubber has been a supplier to the bridge industry for over 40 years.

Seismic Energy Products, L.P. **Booth: 85**

Contact: Steve Bowman
Phone: 903-677-4318
Fax: 903-677-3993
E-mail: steve.bowman@sepbearings.com
Web Site: www.sepbearings.com

Nation's largest manufacturer of seismic isolation bridge bearings, elastomeric bridge bearings, and Fluorogold® Teflon® slide bearings.

EXHIBITORS

Sherwin-Williams Company

Booth: 66

Contact: Customer Service
Phone: 800-524-5979
Fax: 440-826-1989
E-mail: sherwin@ultlead.com
Web Site: www.sherwin-williams.com/im

Developing the smartest industrial and marine coatings takes a lot of experience. Delivering them as complete, unique solutions in your industry takes even more. At Sherwin-Williams, we've worked hard to become the leader. We're more than a coatings manufacturer. We're a strategic source helping you stay on top of your industry.

SIKA Corporation

Booth: 7

Contact: David White, PE
Phone: 201-933-8800
Fax: 201-933-6225
E-mail: white.dave@sika-corp.com
Web Site: 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, anchoring adhesives, overlays, and protective coatings. Full Service sales and technical offices support customers nationwide.

Silica Fume Association

Booth: 114

Contact: Tony Kojundic
Phone: 412-299-7229
Fax: 412-299-7238
E-mail: tony@silicafume.org
Web Site: 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.

Sofis Company, Inc.

Booth: 20

Contact: William J. Sofis, Jr.
Phone: 724-378-2670
Fax: 724-378-3719
E-mail: wsofis@sofiscompany.com
Web Site: www.sofiscompany.com

Sofis Co., Inc. has been a DOT prequalified General Contractor for over 45 years. We have earned a reputation for knowledge and respectability specializing in Bridge Repair, Inspection and Support Services. Supplying top of the line Snoopers, Cable Rigging, Traffic Control and all related services; with an exemplary safety record.

EXHIBITORS

Sound Fighter Systems, LLC

Booth: 46

Contact: Patrick Harrison
Phone: 318-861-6640
Fax: 318-865-7373
E-mail: pharrison@soundfighter.com
Web Site: 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.

Stirling Lloyd Products, Inc.

Booth: 3

Contact: Simon Greensted
Phone: 860-666-5008
Fax: 860-666-5106
E-mail: northamerica@stirlinglloyd.com
Web Site: www.stirlinglloyd.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 Integrity Systems, LLC

Booth: 25

Contact: Monica Svaty
Phone: 316-634-1396
Fax: 316-744-8284
E-mail: sisllc@southwind.net
Web Site: www.structuralintegritysys.com

SISllc applies patented wireless, sensor, and computer technologies to help engineers determine how a structure is reacting to its dynamic loading. Projects have ranged from an arena to a laminated glass deck cable stayed pedestrian bridge to a filled concrete arch to a rolling lift bascule railroad bridge.

T.Y. Lin International

Booth: 91, 92, 88

Contact: Leslie Jenkins
Phone: 415-291-3802
E-mail: ljenkins@tylin.com
Web Site: www.tylin.com

T.Y. Lin International (TYLI) is the world leader in the design of major bridges and transportation infrastructure projects. Our firm is recognized for award-winning, innovative, cost-effective, and constructible designs around the world. TYLI offers clients a full spectrum of consulting services from site analysis and conceptual design to the development of final plans, specifications, and cost estimates. We offer complete inspection services, structural investigations, feasibility and constructability reviews, value engineering studies, and engineering for the rehabilitation, repair, and seismic retrofit of existing structures.

EXHIBITORS

Termarust Technologies

Booth: 89

Contact: Wayne Senick
Phone: 888-279-5497
Fax: 514-354-2799
E-mail: wsenick@termarust.com
Web Site: 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.

TNO DIANA North America

Booth: 8

Contact: David Begg
Phone: 734-779-4850
Fax: 734-779-4858
E-mail: d.begg@tnodiana.com
Web Site: www.midas-diana.com

TNO DIANA and MIDAS IT have entered into a strategic alliance. Both companies have successful histories of developing Finite Element Analysis (FEA) software. Many structures around the world have been analyzed and designed using their products. In the alliance, TNO Diana and MIDAS IT are cooperating in technical areas based on the strengths of both companies. Extending the technologies of each company will result in new advanced analysis programs. The state of the art Pre- and Post-processor, MIDAS/FX+ will be integrated with DIANA. TNO DIANA will also become the distributor of co-developed products and MIDAS bridge design and geotechnical engineering products in Europe and the US.

Transpo Industries Inc.

Booth: 101

Contact: John B. Karlson
Phone: 914-636-1000
Fax: 914-636-1282
E-mail: jkarlson@transpo.com
Web Site: www.transpo.com

Transpo manufactures Polymer Concrete for repairing and preserving concrete structures and HMWM 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.

EXHIBITORS

TranSystems

Booth: 51

Contact: John G. Zuccarella
Phone: 203-866-9221
Fax: 203-838-2436
E-mail: jgzuccarella@transystems.com
Web Site: www.transystems.com

TranSystems is comprised of more than 1,100 professionals in 36 offices throughout the U.S. Professionals who are committed to providing clients in all modes of transportation architecture, engineering, planning, real estate, security, and management consulting services. TranSystems believes no industry impacts the quality of everyday life, and the success of business, more than transportation. The way we see it, bridges, highways, ships, warehouses, hangars, and ports are more than concrete and steel. We envision them as a living entity; a vast circulatory system designed not only to be utilized, but also to inspire and energize the people it serves.

TRC

Booth: 34

Contact: Terry Maechler
Phone: 916-366-0632
Fax: 916-366-1501
E-mail: tmaechler@trcsolutions.com
Web Site: 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 maintaining of multiple engineering design programs through IMBSEN Software Systems.

Vector Corrosion Technologies

Booth: 94

Contact: Chris Ball
Phone: 813-830-7566
Fax: 813-830-7565
E-mail: chrisb@vector-corrosion.com
Web Site: www.vector-corrosion.com

Vector Corrosion Technologies provides products and services for concrete corrosion protection. Our innovative solutions include; electrochemical chloride extraction, impressed current cathodic protection, and an array of galvanic protection systems including; embedded galvanic anodes, galvanic jackets and activated arc spray zinc metallizing. Vector also provides corrosion evaluation, and mitigation of post-tension corrosion. Contact us (813)830-7566 or visit www.vector-corrosion.com.

Viathor, Inc.

Booth: 111

Contact: Clark Verkler
Phone: 916-987-0246
Fax: 916-987-0248
E-mail: cww@viathor.com
Web Site: www.viathor.com

Viathor, Inc. is dedicated to the development of top quality, user friendly, bridge design and analysis software. Our flagship software, Vbent, is a fully interactive, all-in-one bridge substructure program for designing pier caps, columns and footings in integral (monolithic) and non-integral piers.

EXHIBITORS

Watson Bowman Acme Corp. Booth: 75

Contact: Debbie Steiger
Phone: 800-677-4WBA
Fax: 716-716-564-2609
E-mail: debbie.steiger@basf.com
Web Site: www.wbacorp.com

Watson Bowman Acme Corp. is an ISO9001:2000 certified company and industry leader in developing, manufacturing and delivering expansion control and specialty products to the transportation market. Products include Fabricated Expansion Control Systems, Armorless Expansion Control Systems, Seismic Expansion Control Systems, Specialty Metal Fabrication

Westfall Company, Inc. Booth: 24

Contact: Garland R. Westfall
Phone: 636-938-3113
Fax: 636-938-3120
E-mail: gwestfall@westfallcompany.com

Web Site: www.westfallcompany.com
Fiberglass drain systems and other corrosion resistant products for elevated highways, bridge approaches and bridges. Come see new solutions for age-old problems. Website: www.westfallcompany.com/bridgedrain.html.

Wheeling Corrugating Company Booth: 74

Contact: Mike Benson
Phone: 304-234-2326
Fax: 304-234-2378
E-mail: bensonmw@wpsc.com
Web Site: 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 spacings up to 15'-0".

Williams Form Engineering Corp. Booth: 37

Contact: Ryan Williams
Phone: 616-866-0815
Fax: 616-866-1890
E-mail: ryan@williamsform.com
Web Site: 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.

EXHIBITORS

Wire Rope Corp. of America, Inc. Booth: 109

Contact: Richard Humiston
Phone: 908-577-1477
Fax: 908-233-4874
E-mail: richard.humiston@wrca.com
Web Site: www.wrca.com

Wire Rope Corporation of America, Inc., 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.

Wirerope Works, Inc. Booth: 70

Contact: Bill Austin
Phone: 570-327-4206
Fax: 570-327-4274
E-mail: w.austin@wireropeworks.com
Web Site: 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.

NOTES...