

2015 NEW YORK CITY BRIDGE CONFERENCE

NEW YORK MARRIOTT EAST SIDE HOTEL
AUGUST 24TH-25TH, 2015

PLENARY SESSION

Lessons learned and the future of Orthotropic bridge deck in the United States **John W. Fisher**, Professor Emeritus, Lehigh University, USA

Long Span Bridges - Inspection, Maintenance and Rehabilitation **Barry Colford**, Vice President, Preservation Practice Leader - Complex Bridges, AECOM, USA

Working beyond International Standards to assess the quality of concrete in old bridges, without coring **Michael C. Forde**, Carillion Professor, School of Engineering, University of Edinburgh, Scotland, UK

The Bayonne Bridge – progress towards an increased vertical shipping clearance **Joseph LoBuono, P.E.**, Vice President, HDR Engineering, USA

CABLE-SUPPORTED BRIDGES I

Structural characteristics of multi-span cable-stayed bridges with hybrid, RC and steel towers **I. Amiri** & **S. Nakamura**, Tokai University, Japan

Suspension bridge main cable dehumidification – an active system for cable preservation **S. Beabes**, **D. Faust**, AECOM, USA; **C. Cocksedge**, AECOM, Ltd., UK

Impact of secondary fault findings to the design of Izmit Bay Bridge in Turkey **O.T. Cetinkaya**, **M. Yanagihara**, **T. Kawakami**, IHI Infrastructure Systems, Japan, **J. Chacko**, Fugro, Turkey

Construction of the Nhat Tan Bridge superstructure **K. Matsuno** & **N. Taki**, IHI Infrastructure Systems, Japan

Experimental and analytical study on fatigue strength and stress concentration of corroded bridge wires **K. Miyachi** & **S. Nakamura**, Tokai University, Japan

Chesapeake Bay Bridge dehumidification design **M. Nader**, **G. Baker**, **J. Duxbury**, **C. Choi**, T.Y. Lin International, USA; **E. Gundel**, Kiewit Infrastructure Co., USA; **A. Tamrat**, Maryland Transportation Authority, USA

CABLE-SUPPORTED BRIDGES II

ASTM A354 grade BD rods: Case study of the SFOBB self-anchored suspension bridge **M. Nader** & **H. Tazir**, T.Y. Lin International, USA; **B. Maroney**, CADOT, USA; **H.E. Townsend**, Townsend Corrosion Consultants, USA; **L. Raymond**, L. Raymond & Associates, USA; **K.H. Frank**, Hirschfeld Industries, USA; **J. Fisher** & **A. Pense**, Lehigh University, USA

Static behavior of cable-stayed bridges with new stay systems **F. Samim** & **S. Nakamura**, Tokai University, Japan

Measurable Metrics for the assessment of remaining strength of bridge cables **K. Mahmoud**, BTC, USA

Fracture analysis of steel cable-stayed bridges **B. Soule** & **B. Tappen**, International Bridge Technologies, CA

Repair project on cable stayed bridge “Binh Bridge” damaged by ship collision in Vietnam **T. Tokuchi** & **S. Kaifuku**, IHI Infrastructure Systems, Japan

Hydrogen embrittlement testing and results of full-size ASTM A354 grade BD rods in the SFOBB **H.E. Townsend**, Townsend Corrosion Consultants, USA; **K.H. Frank**, Hirschfeld Industries, USA; **B. Brignano**, CADOT, USA; **C. Choi**, T.Y. Lin International, USA

CABLE SUPPORTED BRIDGES III

Vehicle stability in strong winds on long-span bridges **S. Stoyanoff**, and **P.-O. Dallaire**, Rowan Williams Davies & Irwin Inc., Canada; **T. Zoli** & **G. Daly**, HNTB, USA

Current condition and improvement of dry air injection system for main cables **S. Kusuhara**, **A. Moriyama**, **N. Toyama**, **A. Kagawa**, Honshu-Shikoku Bridge Expressway, Japan; **M. Yamamoto**, Bridge Engineering, Japan

Roll in, roll out of South-South Detour of San Francisco-Oakland Bay Bridge **M. Wahbeh** & **J. Mehta**, Alta Vista Solutions, USA

Mechanical testing & post fracture analysis of ASTM A354 grade BD Rods in the SFOBB **M. Wahbeh** & **R. Boundouki**, Alta Vista Solutions, USA; **T. Langill**, American Galvanizers Association, USA; **G. Thomas** & **K. Hoffman**, CADOT, USA

Izmit Bay Suspension Bridge – Project overall and schedule **M. Yanagihara** & **T. Kawakami**, IHI Infrastructure Systems, Japan; **A.N. Oztruk** & **F. Zeybek**, NOMAYG Joint Venture, Turkey

BRIDGE ANALYSIS & DESIGN I

Limit analysis for steel beams connection nodes **M. Arquier** & **X. Cespedes**, Strains Civil Engineering, France

Application of hot spot modeling and analysis guidelines for a web gap detail **U. Attanayake**, Western Michigan University, USA

Comparison of high speed railway bride foundation design **H.Y. Aziz**, Muthanna University, Iraq

Preliminary investigation of composite steel box girder bridges in fire **N.L. Braxtan**, **R. Whitney**, **Q. Wang** & **G. Koch**, Manhattan College, USA

Integral abutment bridges and the modeling of soil-structure interaction **S. Rhodes**, LUSAS, UK; **T. Cakebread**, LUSAS, USA

BRIDGE ANALYSIS & DESIGN II

Design of the new bridge for the St. Lawrence River **M.L. Carter**, **M. Hooton**, **D.M. Harrison**, **S. Potapova**, **Arup**, USA; **P.O. Jensen**, **Dissing + Weitling**, Denmark

Improving structural reliability using a post-tensioned concrete floor system for major non-redundant steel bridges **C. Chang**, **R. Lawrie**, **Hardesty & Hanover**, USA

ASTM F1624 rising step load (RSL™) testing for hydrogen embrittlement threshold of threaded cut outs of A354BD rods **W. Crumly**, **E. Doxtad**, **M. Dearborn**, **L. Raymond**, **L. Raymond & Associates**, USA; **J.A. Gorman**, Dominion Engineering, Inc., USA; **A. Akinsaya** & **W. Casey**, CADOT, USA; **H. Tazir**, T.Y. Lin International, USA; **R. Boundouki**, Alta Vista Solutions, USA

Design-Build for RFK Bridge Ramp Replacement **D. Deluca**, **K. Eichner**, **Hardesty & Hanover**, USA

A higher order beam element for bridge analysis **K. Ferradi** & **X. Cespedes**, Strains Civil Engineering, France

BRIDGE ANALYSIS & DESIGN III

Test VI, long term verification per ASTM E1681 of the accelerated ASTM F1624 environmental threshold stress intensity **J. Gorman**, Dominion Engineering, Inc., USA; **W. Crumly**, **D. Busack**, **L. Raymond**, LRA Laboratories, USA

Modern bearings for key bridges – special functions & type selection **A. Kutumbale** & **G. Moor**, Mageba, USA

Reliability analysis for existing reinforced concrete highway bridge girders according to the Chinese code **Y. Leng** & **J. Zhang**, Ministry Transport of China, China; **R. Jiang**, New Mexico State University, USA

Design and construction guidelines for skewed/curved steel I-girder bridges **V.L. Liang**, **W.S. Johnsen**, & **B.P. McFadden**, Greenman-Pedersen, Inc., USA; **C. Titze**, Cambridge Systematics, USA; **G. Venkiteela**, NJDOT, USA

Resilient bridge design to extreme loads **S. Marjanishvili** & **F. Fayad**, Hinman Consulting Engineers, USA

AASHTO fatigue testing of modular expansion joints - setting new standards **G. Moor**, Mageba USA, USA; **S. Hoffman** & **C. O’Suilleabhain**, Mageba SA, Switzerland

BRIDGE ANALYSIS & DESIGN IV

New bridges for sustainable development of the Adriatic coast in Croatia **J. Radić**, **Z. Šavor**, **M. Kušter Maric**, University of Zagreb, Croatia

Deep Foundations Case Histories in New York and New Jersey **A. Ramakrishna**, **R. Mankbadi**, Glen Schetelich, Hardesty & Hanover, USA

Design of depth critical steel superstructures **R. Schaefer** & **G. Ricks**, HNTB, USA

Proportioning and design considerations for extradosed prestressed bridges **S. Stroh**, AECOM, USA

High Load Multirotational Bearings for an Extradosed Bridge **R.J. Watson** & **J.C. Conklin**, R.J. Watson, Inc., USA

Bridge-weigh-in-motion for axle-load estimation **E. Yamaguchi** & **M. Kibe**, Kyushu Institute of Technology, Japan

BRIDGE CONSTRUCTION

Foundation Characterization and Reuse in ABC projects **F. Jalinoos**, FHWA, USA; **A. Agrawal**, City College of New York, USA

Reconstructing a bridge in ten days: New Jersey Route 46 over Musconetcong River accelerated replacement **R.J. Adams**, Greenman-Pedersen, USA; **S.J. Deeck**, NJDOT, USA

Slip and creep performance for metallized connection faying surfaces used in steel bridge construction **M. Ampleman**, **C-D. Annan** & **M. Fafard**, Université Laval, Canada; **J. Ocel**, FHWA, USA; **E. Levesque**, Canam-Bridges, Canada

Continuously galvanized rebar for bridges **M. Gagné** & **S. Pole**, The International Zinc Association, Belgium; **F. Goodwin**, International Zinc Association, USA; **G. Dallin**, Galvinfo Centre, Canada

Ohio River Bridges East End Crossing **M. Loizias**, **Jacobs**, USA

Seven documentaries that explain ABC (Accelerated Bridge Construction) techniques used to build California Bridges **A. Mangus**, **G. Kaderabek** & **S. Lee**, PECG Professional Engineers in California Government, USA

BRIDGE INSPECTION, MANAGEMENT & MONITORING

Titanium alloy bars for strengthening a reinforced concrete bridge **C. Higgins**, Oregon State University, USA; **D. Amneus**, Group Mackenzie, USA; **L. Barker**, **David Evans & Associates**, USA

Developing a methodology for evaluating non-motorized access alternatives over existingshighway bridges **L. Lopez** & **U. Attanayake**, Western Michigan University, USA

Total load measurements on RFK Bridge eye-bars using X-ray diffraction techniques **J. Pineault** & **M. Belassel**, Proto Manufacturing Limited, Canada; **G. Grodzicki** & **G. Singletary**, **M. Brauss**, **C. Sheridan**, Proto Manufacturing Inc., USA; **M. Mangione**, WSP USA, USA

Managing MDTA's bridge inventory **S. Schorn** & **B. Kroely**, Advitam, Inc., USA; **J. laning**, Pennoni Associates, Inc., USA

Structural Health Monitoring of unique structures: Normandy and Tancarville **S. Schorn**, Advitam, Inc., USA; **A. Chaperon** & **N. Cortes**, Advitam SA, France

Fatigue investigation and retrofit of double-deck cantilevered truss I-95 Girard Point Bridge **Y.E. Zhou** & **M.R. Guzda**, AECOM, USA

BRIDGE DECK EVALUATION & REHABILITATION I

Fatigue assessment of a lightweight steel-concrete bridge deck concept **W. De Corte**, **V. Boel**, **P. Helincks**, **G. De Schutter**, Ghent University, Belgium

Flexural fatigue performance of ECC link slabs for bridge deck applications **K.M.A. Hossain** & **S. Ghatrehsamani**, Ryerson University, Canada

Newark Bay-Hudson County Extension deck reconstruction, Interchange 14C to Holland Tunnel **J.H. Laird** & **J.J. Sheedy**, NJTA, USA; **G.P. Johnson**, Greenman-Pedersen, Inc., USA

Numerical simulations on the effect of edge details on aerodynamic characteristics of long span bridge deck sections **R.A. Obisanya** & **G. Korley**, **Yoel & Joseph Engineering Consultants**, USA

BRIDGE DECK EVALUATION & REHABILITATION II

Role of technology in condition assessment of transportation infrastructure **H. Azari**, FHWA, USA; **N. Gucunski**, Rutgers Univeristy, USA

Full scale laboratory testing of round-bottom rib-to-fitted floor beam connection in a steel Orthotropic deck for a lift bridge **S. Roy** & **S. Mukherjee**, Lehigh University, USA

Reliability of bridge decks in the United States **H. Tabatabai**, **C.-W. Lee**, University of Wisconsin, USA; **M.A. Tabatabai**, Meharry Medical College, USA

Fatigue behavior of GFRP and steel reinforced bridge decks designed using traditional and empirical methodologies **J.R. Yost**, **D.W. Dinehart**, **S.P. Gross**, Villanova University, USA; **P. Reilly**, McCormick Taylor, USA; **D. Reichmann**, AECOM, USA

BRIDGE REHABILITATION & REPLACEMENT

Spray applied waterproofing in Callahan Tunnel rehabilitation **J. Bilotti**, **RJ Watson**, USA; **J. Haydu**, Bridge Preservation LLC, USA

Replacement of the 14th Street Viaduct, Hoboken NJ **R. Giamario**, TranSystems Corporation, USA; **E. Zamiskie**, **Haley & Aldrich**, USA

U.S. 84 Mississippi River Bridge pin and link replacement **J.P. Gregg**, HNTB, USA

Performance of CFRP strengthened concrete bridge members under elevated temperatures **C.A. Issa** & **R.A. Izadifard**, Lebanese American University, Lebanon

Construction report of hanger replacement for Bosphorus Bridge in Istanbul, Turkey **N. Kitayama**, IHI Infrastructure Systems Co., Ltd., Japan; **N. Dost**, General Directorate of Highways, Turkey

BRIDGE REHABILITATION & REPLACEMENT II

US190: Mississippi River Bridge rehabilitation design, cleaning, and painting **D.H. Krone**, **J.D. Richard**, **M. Schrepfer**, TRC Engineers, Inc., USA

I-495 emergency foundation rehabilitation and replacement **B. Shaffer**, **D. Griffith**, **W. Alko**, AECOM, USA

Slide-in replacement of I-84 bridges in New York **B. Sivakumar**, **S. Lin** & **C. Brostio**, HNTB, USA

Redesign of the Circle Interchange, Chicago, Illinois **D. Vimawala** & **D. Manojlovski**, AECOM, USA

Rehabilitation of the West Broadway Bridge over the Passaic River, Paterson, New Jersey **G. Zamiskie** & **J. Chiara**, TranSystems Corporation, USA

SEISMIC ANALYSIS & DESIGN I

Vertical ground motion influence on seismically isolated & unisolated bridges **N.E. Aykuz** & **U. Reyhanogullari**, Middle East Technical University, Turkey

Post-earthquake stability of Gerald Desmond Bridge **P. Banibayat**, **M. Carter**, **M. Nelson**, **T. Chandler**, ARUP, USA

Preliminary assessment of seismic vulnerability of lifelines with a focus on bridges **A. Caner**, **N. Topkara**, **G.M. Sarica**, **A. Askan**, Middle East Technical University, Turkey

Seismic isolation of highway bridges: effective performance of LRBs at low temperatures **C. Mendez Galindo**, Mageba Mexico, Mexico; **G. Moor** & **B. Bailles**, Mageba, USA

SEISMIC ANALYSIS & DESIGN II

Seismic design of Kentucky Lake and Lake Barkley approaches **B. Robson**, **D. Rust**, **K. McLemore**, Palmer Engineering Company, Inc. USA

Poplar Street Interchange replacement - seismic design **L.E. Rolwes**, HNTB, USA

Seismic evaluation of routine bridges **A. Shroff**, **A. Ranasinghe**, **S. Patel**, **Jacobs**, USA; **M. Yegian**, **Hardesty & Hanover**, USA

Seismic behavior of a long viaduct in Mexico DF: a combined FEM and SHM approach **J.M. Simón-Talero** & **A. Hernandez**, Torroja Ingenieria S.L., Spain, **Hernandez**, **M. Ahijado**, OHI Concesiones, Spain; **M. Santillan**, Solvver Solutions S.L.,Spain

BRIDGE HISTORY & AESTHETICS

Lindenthal and his pursuit of a bridge across the Hudson River **K. Gandhi**, Gandhi Engineering Inc., USA

Visual impact of signature bridges in urban settings **E. Mahmoud Sadek**, Consultant, Egypt

“A Walk above the Harlem River” The Revitalization of New York City’s High Bridge **A.A. Mallick**, NYCDDC, USA; **J. Valenti**, Greenman-Pedersen, Inc., USA

Should bridges be named after Engineers? **G. Kaderabek**, **A. Mangus**, **S. Lee**, PECG Professional Engineers in California Government, USA

Charles Ellet, Jr., the pioneer American suspension bridge builder **K. Gandhi**, Gandhi Engineering Inc., USA

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