



September 12-13, 2005
Third New York City Bridge Conference
at the New York Marriott East Side, 525 Lexington Avenue in NYC

September 12th-13th, 2005 Third New York City Bridge Conference

Organized and sponsored by the Bridge Engineering Association

To view papers, scroll down and click on the paper title you would like to view, a new window will open with the paper. To return to the main document with all paper listings, click on the bookmark in the left panel titled "2005 Table of Contents".

To go to a particular session, click on the links below:

SESSION 1A SESSION 2A SESSION 3A SESSION 4A SESSION 5A SESSION 6A
SESSION 1B SESSION 2B SESSION 3B SESSION 4B SESSION 5B SESSION 6B
SESSION 1C SESSION 2C SESSION 3C SESSION 4C SESSION 5C SESSION 6C

Please Note: Only abstracts of papers included in the printed conference proceeding are available on this CD-ROM. Printed Proceedings are published in a special issue of the *Journal of Bridge Structures*, Vol. 1, Number 3, Sept. 2005. *Bridge Structures* is edited by: Khaled Mahmoud, and published by: Taylor & Francis, www.tandf.co.uk.

KEYNOTE SESSIONS

Chair: Khaled Mahmoud, PhD, PE, President, Bridge Technology Consulting & Engineering

Specifications and Guidelines for the Design of Curved Steel Girder Bridges

John Kulicki, President & CEO, Modjeski and Masters

An Architect's Perspective on Bridge Design

Poul Ove Jensen, Architect, Dissing & Weitling, Denmark

Success and Failure in Bridge Design

Henry Petroski, A. S. Vesic, Duke University

Load Rating by Load and Resistance Factor Evaluation Method

Dennis Mertz, Professor, University of Delaware

City Island Cable-Stayed Bridge in New York City

Henry Perahia, Deputy Commissioner & Chief Bridge Officer, New York City DOT

State-of-the-art in Cable Vibrations of Cable-Stayed Bridges

Michel Virlogeux, Consulting Engineer, France

click to go to:

KEYNOTE SESSIONS

SESSION 1A
SESSION 1B
SESSION 1C

SESSION 2A
SESSION 2B
SESSION 2C

SESSION 3A
SESSION 3B
SESSION 3C

SESSION 4A
SESSION 4B
SESSION 4C

SESSION 5A
SESSION 5B
SESSION 5C

SESSION 6A
SESSION 6B
SESSION 6C

September 12-13, 2005
Third New York City Bridge Conference
at the New York Marriott East Side, 525 Lexington Avenue in NYC

SESSION 1A: LONG SPAN BRIDGES

Session Chair: Thomas Bach, PE, Chief Engineer, MTA Bridges & Tunnels

Seismic Study and Marathon Analysis of the Verrazano-Narrows Bridge

M. J. Abrahams, Parsons Brinckerhoff Quade & Douglas, Inc., T. Ingham, T. Y. Lin International, J. Bryson, J. Wang, Parsons Brinckerhoff Quade & Douglas, Inc., J. Chang, B. Silberfarb, T. Paskova, Triborough Bridge and Tunnel Authority

Panama Canal Second Crossing Paraiso, Panama

R. Manzanarez, A. Sanjines, R. Donikian, J. Duxbury, J. Lopez-Jara, Dr. Man-Chung Tang, T.Y. Lin International

Design and Construction of a Long-Span, Curved Steel Box Girder Bridge

B. N. Robson, Palmer Engineering, S. Waddle, Kentucky Transportation Cabinet, and J. Burchett, Jr., Bush & Burchett, Inc.

Suspender Testing and Replacement Study for George Washington Bridge

S. Sloan, H. Patel, Port Authority of NY&NJ and D. Khazem, Parsons

SESSION 1B: SEISMIC ANALYSIS & DESIGN (I)

Session Chair: Malcolm Kerley, PE, Chief Engineer for Project Development, Virginia Department of Transportation

Geographic Information Systems for Ground Motion Evaluation in Seismic Bridge Analysis

S. Nikolaou, Mueser Rutledge Consulting Engineers and M. P. Gaus, Gaus Association

Effectiveness of Commercial Oil Pressure Seismic Devices for Bridges

M. Merli, S. Bergonzoni, T. Trombetti, and G. Gasparini, University of Bologna, Italy

Seismic Response and Retrofit Design Recommendations for Braced Steel Bridge Piers

J. W. Berman and M. Bruneau, State University of New York at Buffalo

Seismic Retrofitting Manual for Highway Structures: Retaining Structures, Slopes, Tunnels, Culverts and Roadways

G. Smith, Federal Highway Administration

SESSION 1C: BRIDGE SCOUR

Session Chair: George Christian, PE, Deputy Chief Engineer, New York State Department of Transportation

Impact of the Federal Highway Administration's Scour Evaluation Program on Highway Bridges in the United States

J. Pagan-Ortiz, Federal Highway Administration

Bridge Health Scour Monitoring

B. E. Hunt, Hardesty & Hanover, LLP

Treating Channel Instability at Bridges

P. Johnson, Penn State University

Case Study: Tidal Hydraulic and Scour Analysis for Two NYC Bridges

S. Mahmutoglu, and R. Edison, Earth Tech Inc.

click to go to:

KEYNOTE SESSIONS

SESSION 1A
SESSION 1B
SESSION 1C

SESSION 2A
SESSION 2B
SESSION 2C

SESSION 3A
SESSION 3B
SESSION 3C

SESSION 4A
SESSION 4B
SESSION 4C

SESSION 5A
SESSION 5B
SESSION 5C

SESSION 6A
SESSION 6B
SESSION 6C

September 12-13, 2005
Third New York City Bridge Conference
at the New York Marriott East Side, 525 Lexington Avenue in NYC

SESSION 2A: BRIDGE AESTHETICS

Session Chair: Henry D. Perahia, PE, Deputy Commissioner, New York City Department of Transportation

Bridge Aesthetics Cuckoo's Eggs- A Treatise on Context K. Brownlie, Wilkinson Eyre Architects, England

The True Goals of Bridge Aesthetics F. Gottemoeller, R. Arch., Bridgescape, LLC

Bridge Design as Structural Architecture J. J. Arenas, Arenas & Asociados, Spain

The Sauvie Island Bridge: Achieving Public Consensus on Design Issues

J. Fox, RA, T. Piotrowski, AIA, SARP, H2L2 Architects / Planners, LLP

SESSION 2B: BRIDGE SEISMIC RETROFIT

Session Chair: Richard Sause, PhD, PE, Director, Professor of Civil Engineering, ATLSS, Lehigh University

Seismic Retrofit of a Historic Arch Rib Bridge

S. Morcos, B. Reznikov, HDR Engineering, Inc., R. Mardirosian, City of Pasadena, California

FHWA'S 2005 Seismic Retrofitting Manual, Part 1-Bridges

P. Yen, J. O'Fallon, Federal Highway Administration, J. O'Connor, MCEER, University at Buffalo

Detailed Seismic Evaluation and Retrofit Studies of Goethals Bridge Main Spans

B. Sivakumar, A. Wolek, A. Yazdani, Lichtenstein Consulting Engineers, Inc., and S. Sloan, The Port Authority of NY & NJ

Seismic Vulnerability Evaluation and Retrofit of Kosciuszko Bridge

C. Fan, F. Lin, A. C. Shroff, Edwards & Kelcey, and R. Adams, New York State DOT

SESSION 2C: MOVABLE BRIDGES

Session Chair: Nicholas Altebrando, PE, Director of Bridges, STV Inc.

A Case Study of the Resolution of Design/ Construction Issues for the Stutson Street Bridge

P. J. Davis, Bergmann Associates

Advancements in the Field of Wire Rope Design and Manufacturing for Movable Bridge Applications

T. W. Klein, Wire Rope Corporation of America

Proper Maintenance of Movable Bridges

J. W. Newman, and D. M. Barrett, Modjeski and Masters

Knapp Street Towerless Vertical Lift Bridge

W. E. Nickoley, HNTB Corporation

click to go to:
KEYNOTE SESSIONS

SESSION 1A
SESSION 1B
SESSION 1C

SESSION 2A
SESSION 2B
SESSION 2C

SESSION 3A
SESSION 3B
SESSION 3C

SESSION 4A
SESSION 4B
SESSION 4C

SESSION 5A
SESSION 5B
SESSION 5C

SESSION 6A
SESSION 6B
SESSION 6C

September 12-13, 2005
Third New York City Bridge Conference
at the New York Marriott East Side, 525 Lexington Avenue in NYC

SESSION 3A: BRIDGE SECURITY

Session Chair: Harry A. Capers, Jr., PE, Manager, Office of Transportation Security, New Jersey Department of Transportation, and Mohammed Ettouney, PhD, PE, Principal, Weidlinger Associates

The Challenge of Economically Balancing Security and Mobility Needs of New Jersey's Bridge Infrastructure H. Capers, New Jersey DOT

Theory of Multihazards for Bridge Structures

M. Ettouney, Weidlinger Associates, and S. Alampalli, New York State DOT, A. Agrawal, City College of New York

Techniques for Quantifying Security Risk for Bridges

S. King, Weidlinger Associates

SESSION 3B: BRIDGE ANALYSIS & DESIGN (I)

Session Chair: Michael Abrahams, PE, Technical Director, Parsons Brinckerhoff

Efficiency of Closed Stiffener Orthotropic Deck Panels for Railway Bridges

W. De Corte, P. Van Bogaert, H. De Backer, Ghent University, Belgium

Tension Field Action Behavior in the Hybrid Steel Girders For Ohio Approach Spans of Blennerhassett Island Bridge

F. Ahmad, and N. Zoubi, E.L. Robinson Engineering Co.

Redundancy Issues of Steel Bridges

S. Kumarasena, and R. McCabe HNTB Corp.

Twin Arch Bridge or Not. New County Road Over Main & Bergen Lines, New Jersey Transit

T. Roberson Edwards, NJ Transit, C. J. Bhoraniya, Medina Consultants

Finite Element Analysis of Bridge Approach Slabs Considering Soil-Structure Interaction

Y. A. Khodair and H. Nassif, Rutgers University

SESSION 3C: SEGMENTAL & POST-TENSIONED BRIDGES

**Session Chair: Subi Chakraborti, PE, Regional Director, Region 10
New York State Department of Transportation**

Advancing Segmental Construction

R. A. Lawrie, and C. Redfield, Lawrie & Associates, LLC

Structural Form of the Route 52 Causeway Segmental Concrete Bridge

W. Gottshall, Michael Baker Jr. Inc., D. Lambert, and N. Kasbekar, New Jersey DOT

Sensitivity Studies of Grout Defects in Post-tensioned Bridges Using Impact Echo Scanning Technique Y. Tinkey, L. Olson, and A. Gibson, Olson Engineering, Inc.

Mitigation of Alkali-Silica Reaction Damage Using Post-Tensioning

W. Wassef, M. Smith, Modjeski and Masters, Inc., C. Bognacki, and S. Sloan, Port Authority of NY & NJ

Finite Element Analysis of Segmental Concrete Structures

Aline da Silva Ribeiro, Alexandre Rodrigues Pacheco, Américo Campos Filho Universidade Federal do Rio Grande do Sul - UFRGS Civil Engineering, Brazil

click to go to:
KEYNOTE SESSIONS

SESSION 1A
SESSION 1B
SESSION 1C

SESSION 2A
SESSION 2B
SESSION 2C

SESSION 3A
SESSION 3B
SESSION 3C

SESSION 4A
SESSION 4B
SESSION 4C

SESSION 5A
SESSION 5B
SESSION 5C

SESSION 6A
SESSION 6B
SESSION 6C

September 12-13, 2005
Third New York City Bridge Conference
at the New York Marriott East Side, 525 Lexington Avenue in NYC

SESSION 4A: BRIDGE ANALYSIS & DESIGN (II)

Session Chair: **Barney T. Martin, PhD, PE, Vice President, Modjeski & Masters, Inc**

Design Development: Bridge Across Ohio River and Blennerhassett Island

G. Wollmann, K. Meyer, J. Francisco, Michael Baker Jr., Inc., T. Zoli, HNTB Corporation, J. Shook, West Virginia DOT, Division of Highways

Experimental Influence Lines for Bridge Evaluation Jasmine Hirachan and M. Chajes, University of Delaware

Evaluation of Live-Load Distribution Factors for a three-span Continuous Girder Bridge

N. Suksawang and H. Nassif, Rutgers University

Analysis Techniques for Curved and Skewed Steel Girder Bridges

D. Coletti, and J. Yadosky, HDR Engineering

A General Method for Nonlinear Analysis of Bridge Structures

M. Arici, Universita di Palermo, Dipartimento di Ingegneria Strutturale e Geotecnica, Italy

SESSION 4B: BRIDGE INSTRUMENTATION, MONITORING AND MAINTENANCE

Session Chair: **Russell Holcomb, PE, Deputy Chief Engineer, New York City Department of Transportation**

Maintaining Safety and Serviceability of Concrete Bridges in Croatia J. Radic, University of Zagreb, J. Bleiziffer, Croatian Institute for Bridge and Structural Engineering, and D. Tkalcic, Civil Engineering Institute of Croatia, Croatia

Structural Health Monitoring for Bridge Maintenance

S. Alampalli, New York State DOT, M. Ettouney, Weidlinger Associates, Inc. and A. Agrawal, City College of New York

Life Cycle Cost of RC Slab Deteriorated by Anti-Freezing Agent

Y. Mimura, I. Yoshitake, K. Tsuji, and S. Hamada, Yamaguchi University, Japan

Evaluation and Validation of Ground Penetrating Radar for Bridge Deck Condition Assessment

D. A. Grivas, Institute for Infrastructure Asset Management, F. A. Romero, WaveTech-GEOVision Geophysical Services, and R. L. Roberts, Geophysical Survey Systems, Inc.

Damage detection in bending beams through Brillouin distributed optic-fiber sensor

R. Bernini, National Research Council, M. Fraldi, A. Minardo, V. Minutolo, F. Carannante, L. Nunziante, and L. Zeni, University of Napoli "Federico II", Italy

Instrumentation and Health Monitoring of Star City Bridge. WV

S. Shoukry, M. Riad and G. William, West Virginia University

SESSION 4C: BRIDGE PERFORMANCE AND REHABILITATION

Session Chair: **Richard E. Miras, PE, Program Manager, MTA New York City Transit, Capital Program Management**

Rehabilitation of the New Hope-Lambertville Toll Supported Truss Bridge W. Gottshall, Michael Baker Jr. Inc., A.P. Ranasinghe, McCormick Taylor, Inc., and C. Harney, Delaware River Joint Toll Bridge Commission

Rehabilitation of Novoarbatsky Bridge in Moscow

Y. Ponomarev, Gidromost, Russia, and G. Brodski, AGA Group, USA

Use of Prefabricated Bridge Deck Panels on Rapid Reconstruction Projects

M. Kaczinski, The D.S. Brown Company and R. Bettigole, Consultant

Lessons from the Kinzua T. G. Leech, J. McHugh, Gannett Fleming, and G. Dicarantonio, Pennsylvania Department of Conservation and Natural Resources

Replacement of Route 9W Viaduct over Washington Street

S. W. Smith, P. Bousader, and W. S. Najjar, Chas. H. Sells, Inc., Consulting Engineers

Performance Design of a Shear-Key System of High Speed Railroad Bridges E. H. Wang, M. Hsin, University of Science and Technology, Taiwan, and Forrest H S Wu, Li-Joe Engineering Consultant

click to go to:
KEYNOTE SESSIONS

SESSION 1A
SESSION 1B
SESSION 1C

SESSION 2A
SESSION 2B
SESSION 2C

SESSION 3A
SESSION 3B
SESSION 3C

SESSION 4A
SESSION 4B
SESSION 4C

SESSION 5A
SESSION 5B
SESSION 5C

SESSION 6A
SESSION 6B
SESSION 6C

September 12-13, 2005
Third New York City Bridge Conference
at the New York Marriott East Side, 525 Lexington Avenue in NYC

SESSION 5A: CABLE-SUPPORTED BRIDGES

Session Chair: William J. Moreau, PE, Chief Engineer, New York State Bridge Authority

State-of-the-Art Main Cable Corrosion Protection by Dehumidification

M. L. Bloomstine, Ove Sørensen, COWI, Denmark

Puente Centenario Crossing the Panama Canal K. Humpf, Leonhardt und Partner Gmbtt, Germany

Ironton Russell Single Tower Cable-Stayed Bridge Configuration - Optimization for Client Engineering Constraints

R. W. Bondi, T. J. Tiberio, M. Baker Jr., Inc., A. Schemmann, Buckland & Taylor Ltd, and J. E. Salvadori, Michael Baker Jr., Inc.

Interactive Horizontal Load Model for Pedestrians Crossing Footbridges

P. Archbold, P. Fanning, University College Dublin, Ireland, A. Pavic, University of Sheffield, United Kingdom

SESSION 5B: INNOVATIVE BRIDGE TECHNOLOGY

Session Chair: Phillip Eng, PE, Deputy Regional Director, Region 11, New York State Department of Transportation

Lessons For Rapid Urban Bridge Construction From The International Scan of Prefabricated Bridge Elements and Systems in Japan and Europe

H. A. Capers, Jr., New Jersey DOT, M. L. Ralls, Ralls Newman, LLC and B. Tang, PE, Federal Highway Administration, US Dept. of Transportation

Numerical Analysis of Shear Debonding at FRP-Concrete Interface for Girders Strengthening Applications

M. Ali-Ahmad, K. Subramaniam, and M. Ghosn, City College of New York

Innovative Floor Beam Replacement Procedures for the Chicago Skyway Bridge

M. B. Civelek, Edwards and Kelcey, S. McNally, McNally Design & Construction, LLC, and R. Schickel, Edwards & Kelcey

Stay Cable Technology Applied to Suspension Bridges

A. Micklus, Freyssinet LLC, USA, B. Lecinq, S. Petit, I. Zivanovic, Freyssinet International, Vélizy, France

SESSION 5C: SEISMIC ANALYSIS & DESIGN (II)

Session Chair: Douglas Currey, PE, Regional Director, Region 11
New York State Department of Transportation

Seismic Hazard Analysis for New York City Bridges

R. McGuire, G. Toro, Risk Engineering Inc, K. Kishore, J. Patel, A. Razzaq, S. Jain, New York City DOT, G. Fanjiang and R. Gajer, Weidlinger Associates Inc.

Seismic Performance of Bridges of The San Francisco Bay Area Transportation Network Bridges

E.C. Stergiou and A. Kiremidjian, Stanford University

Determination of Response Modification Factor for Seismic Design

A. Mechakhchekh and M. Ghosn, City College of New York

Near-Field Effects on Seismically Excited Highway Bridge Equipped with Nonlinear Viscous Dampers

P. Tan, A. K. Agrawal and Y. Pan, City College of New York

click to go to:
KEYNOTE SESSIONS

SESSION 1A
SESSION 1B
SESSION 1C

SESSION 2A
SESSION 2B
SESSION 2C

SESSION 3A
SESSION 3B
SESSION 3C

SESSION 4A
SESSION 4B
SESSION 4C

SESSION 5A
SESSION 5B
SESSION 5C

SESSION 6A
SESSION 6B
SESSION 6C

SESSION 6A: BRIDGE ANALYSIS & DESIGN (III)

Session Chair: Charles Minervino, PE, Principal, Lichtenstein Consulting Engineers, Inc.

Context Sensitive Design for the Fulton Road Bridge Replacement

J. C. Dietrick, and J. Broadwater, Michael Baker Jr. Inc.

Evaluation and Retrofit of Floorbeam Cracking on a Tied Arch Bridge

R. J. Connor, I. C. Hodgson, and J. W. Fisher, Lehigh University

Spatial Tubular Solution for Bridge Design B. Briseghella, E. Siviero and T. Zordan, Bolina Ingegneria, Italy

Interactive Seismic Analysis and Design of the Roslyn Viaduct

R. Eslinger, K. Griesing, B. Yin, Hardesty & Hanover, LLP, T. Sung, and M. Novak, New York State DOT

Evaluation of Highway Bridge Strength Considering Parapets

B. Brenner, M. Sanayei, D. Lattanzi, Tufts University and E.S. Bell, University of New Hampshire

SESSION 6B: BRIDGE INSPECTION & MANAGEMENT

Session Chair: Bojidar Yanev, PhD, PE, Director, Bridge Inspection & Mgmt., New York City Department of Transportation

Specific Features of Standard Inspections of Engineering Structures in Major Cities

Y. Yenyutin, V. Fedoseyev, Gormost, Russia, and E. Brodskaya, AGA Group

New Bridges in Croatia

J. Radic, Z. Savor, University of Zagreb, and J. Bleiziffer, Croatian Institute for Bridge and Struct. Engineering, Croatia

City of Philadelphia: from Paper to Computers in Bridge Inspection and Management System

J. Shaffer, and M. Schellhase, Inspect Tech

Improving the Quality and Usability of Bridge Inspection Information

T. Le Diouron, Advitam Inc.

Proposal of Concrete Bridges and Viaducts Management System

Julia Wippich Lencioni, Maryangela Geimba de Lima, Fabiano Morelli, Brazil

SESSION 6C: OPEN SESSION

Session Chair: Martin H. Kendall, PE, Vice President, Edwards & Kelcey

Rolling the Northeast 8th Street Bridge

J. Lem, and L. Kyle, HDR Engineering

Replacement of I-287 Curved Girder Bridge over Route 119

M. Buonocore, P. Bousader, and W. S. Najjar, Chas. H. Sells, Inc., Consulting Engineers

Replacement of the Belt Parkway Bridge over Ocean Parkway

C. Sklavounakis, New York City DOT, P. Atkins, Granite Halmar Construction Co., C. Norrish, III, Gannett Fleming, and J. Liebowitz, HAKS Engineering

Norway Bridges Utilizing Lightweight Concrete K. S. Harmon, Carolina Stalite Co.

Alternative Waterproof System & Wearing Course for Bridge Decks that Resist Rutting/Shoving

D. Zuberer, Chase Specialty Coatings

September 12-13, 2005
Third New York City Bridge Conference
at the New York Marriott East Side, 525 Lexington Avenue in NYC