

4TH NEW YORK CITY BRIDGE CONFERENCE PROGRAM
MONDAY, AUGUST 27TH, 2007

REGISTRATION: Foyer

7:00am

*Welcome and Keynote Session located in
Broadway Act I, II & III*

8:00-9:40am

**BRIDGE ENGINEERING ASSOCIATION
CHAIRMAN'S WELCOME:**

8:00-8:10am

Dr. Khaled M. Mahmoud, PE, President
Bridge Technology Consulting, New York City, USA

KEYNOTE SESSION (I)

8:10-9:10 am

Aesthetics and Function in Bridge Design Christian
Menn, Bridge Designer, Switzerland

9:10-9:40 am

TBTA's Long Span Bridge Capital Program
Thomas Bach, PE, Vice President and Chief Engineer,
MTA Bridges & Tunnels, New York, USA

9:40--10:10 am

COFFEE BREAK: Atrium & Broadway Act IV

10:15-12:20 pm

Broadway Act I

SESSION 1A: SEISMIC ANALYSIS & FOUNDATIONS (I)

**Computation of Effective Seismic Excitation for
the Evaluation of Major Multi-Span Bridge
Structures** R. Donikian, T.Y. Lin International, USA

**Parametric Seismic Analysis of Curved Steel Box-
Girder Bridges with Two Continuous Spans** H. Wu,
W. S. Najjar, CHAS. H. SELLS, Inc., USA

**Seismic Safety of Bridges - Academia's
Contribution** F. Seible, University of California, San
Diego, USA

**Seismic Tests on Precast Segmental Concrete
Columns with Unbonded Tendons** J. T. Hewes,
Northern Arizona University, USA

**Humboldt Bay Middle Channel Bridge:3-D Bridge-
Foundations-Ground System** A. T. Trombetti, G.
Gasparini, University of Bologna, Italy;
A. Elgamal, D. Forcellini, University of San Diego, USA

SESSION 1B: BRIDGE ANALYSIS & DESIGN (I)

10:15-12:20 pm

Broadway Act II

**A Real-Time Bridge Weigh-in-Motion System for
Investigating Heavy-Truck Flow** E. Yamaguchi,
Y. Matsuki, Kyushu Institute of Technology, Japan;
S. Kawamura, Kure College of Technology, Japan

**Steel-Composite Design Of Railway Arch Bridge
Improves Constructability & Efficiency**
S. Kumarasena, HNTB Corporation, USA; V. M. Jatkar, V.
N. Heggede, Gammon India Limited, India

**The New AASHTO Manual for Bridge Evaluation:
A Single Standard for Bridge Evaluation** B.
Sivakumar, Lichtenstein Consulting Engineers, Inc., USA

10:15-12:20 pm
Broadway Act III

Flexural Limit States for Concrete Bridge Members Strengthened with FRP J. R. Yost, S. Gross, Villanova University; M. Deitch, Hardesty & Hanover, USA

Lateral-Torsional Buckling Study of a Continuous, Skewed, Steel Bridge During Deck Placement J. Liu, CHAS. H. SELLS Inc., USA; M. Chajes, University of Delaware, USA

SESSION 1C: CABLE-SUPPORTED & LONG-SPAN BRIDGES (I)

Mechanics of Environment-Assisted Cracking in Bridge Cable Wire
K. Mahmoud, Bridge Technology Consulting, USA;
J. Fisher, Lehigh University, USA

Locked Coil Cable Assemblies for Bridges M. Bechtold, F. E. Rentmeister, BRIDON International GmbH, Germany; B. Mordue, BRIDON International Ltd., UK

Pedestrian-Induced Vibrations on Footbridges: Advanced Response Analysis
S. Stoyanoff, T. Haskett, B. Pridham, Rowan Williams Davies & Irwin, Canada; T. Zoli, HNTB Corporation, USA

Integrated System for Bridge Cable Strength Evaluation and Monitoring K. Mahmoud, Bridge Technology Consulting, USA; B. Laskowski, J. Morse, Analatom Inc., USA

Kanne Suspension Bridge, 100 Year Durability for the Cables E. Mellier, S. Petit, I. Zivanovic, Technical Department, Freyssinet International, France

12:20-1:00 pm

AWARDS CEREMONY: Times Square

1:00 -1:50 pm

LUNCH: Times Square

2:00 -4:05 pm
Broadway Act I

SESSION 2A: BRIDGE HISTORY & AESTHETICS

Conceptual Design of Four Pedestrian Bridges Over the Belt Shore Parkway, Brooklyn, NY
M. Rosales, Rosales+Partners, USA

Historic Bridge Railing Versus Performance - How to Make it Work F. Nelson, Oregon Department of Transportation, USA

Historic Bridge Replacement: a Collaborative Approach to Context Sensitive Design T. Piotrowski, B. Chamberlin, H2L2 Architects/Planners, LLC, USA

Hawkesbury Railway Bridge near Sydney, Australia K. Gandhi, Gandhi Engineering Inc., USA

Walkway Over The Hudson (Historic Bridge to Northeast Recreational Destination)
P. Melewski, D. Thurnherr, Bergman Associates, USA;
M. McLaren, J. Green, McLaren Engineering Group, USA

2:00 -4:05 pm
Broadway Act II

SESSION 2B: BRIDGE DECK ASSESSMENT & REPLACEMENT

The Origins of Fatigue Failure at the Rib to Floorbeam Joint of Orthotropic Plated Bridge Decks W. De Corte, C. Delesie, Ph. Van Bogaert, Ghent University, Belgium

Bridge Surface Roughness Assessment for Ride Quality S. M. Karamihas, B. L. Schleppe, University of MI, Transportation Research Institute, USA

A Probabilistic Methodology for Bridge Deck Condition Assessment S. Abu Dabous, S. Alkass, Concordia University, Canada

The Re-Decking of the Tappan Zee Bridge
T. McGuinness, R. Iuele, New York State Thruway Authority, USA

Objective Condition States for Concrete Bridge Deck Assessment M. L. Knight, Middle Tennessee State University, USA

2:00 -4:05 pm
Broadway Act III

SESSION 2C: BRIDGE ANALYSIS & DESIGN (II)

Enhancement of Bridge Live Loads Using Weigh-in-Motion Data B. Sivakumar, Lichtenstein Consulting Engineers, Inc., USA; F. Sheikh Ibrahim, Federal Highway Administration, USA

The Use of Punched Holes in Bridge Structures K. H. Frank, The University of Texas, USA; J. Brown, KPFF Consulting Engineers, USA; D. Lubitz, Kimley-Horn and Associates, Inc., USA; Y. Cekov, CBM Engineers, USA

Stability Analysis and Bracing Methods for System Buckling in Twin-Girder Bridges B. Kozy, S. Tunstall, HDR Engineering, Inc., USA

Analysis of Curved Launched Bridges Through Transfer Matrix Method
M. Arici, M.F. Granata, Palermo University, Italy

Fabricated Plate Tolerances and Design Slenderness Values T. Helwig, O. Espinoza, University of Texas, USA; R. Herman, The John's Hopkins University, USA; Y. Zhang, University of Houston, USA; B. Mercan, University of Minnesota, USA

4:05-4:25 pm

COFFEE BREAK: Atrium & Broadway Act IV

4:30-6:10 pm
Broadway Act I

SESSION 3A: SEISMIC ANALYSIS & FOUNDATIONS (II)

Seismic Response of a Curved Steel I-Girder Bridge System Using a Simplified Model
J.-W. Seo, D. G. Linzell, The Pennsylvania State University, USA

Sliding Isolation Bearings in Cold Weather Climates R. J. Watson, R. J. Watson, USA

Results of Tests Performed on Lead-Rubber Seismic Isolators with Deformed Masonry Plates
M. Jacak, Seismic Energy Products, LP, USA; J. Pezzotti, Pennoni Associates Inc., USA

4:30-6:10 pm
Broadway Act II

Underpinning Pile Foundations of Two Adjacent Continuous Multi-Level Curved Steel Box Girder Structures M. Pierce, F. Panah, K. Chong, DMJM Harris, USA

SESSION 3B: BRIDGE SECURITY

Role of Structural Health Monitoring on Bridge Security S. Alampalli, NYSDOT, USA; M. Ettouney, Weidlinger Associates, USA

Is Your Design Vulnerable? Detailing the Workhorse Bridges for Security
H. A. Capers Jr., N. Khambhati, Arora and Associates, USA; M. Valeo, US Army, USA

Protecting Bridges Against Blast Loads
Y. Tokal, H. Najm, Department of Civil and Environmental Engineering, USA

Strategic Study on Bridge Design and Retrofit to Resist Hostile Explosion
J. Q. Fang, P. Chung, R. W. Wolfe, Structural Analysis Committee, California Department of Transportation, USA

Bridge Security - A State's View M. T. Kerley, Virginia Department of Transportation, USA

4:30-6:10
Broadway Act III

SESSION 3C: BRIDGE INSPECTION AND REHABILITATION (I)

Rehabilitation of the Alexander Hamilton Bridge – An Overview of the Design
M. H. Kendall, Jacobs Edwards and Kelcey, USA

Renewing the Crooked Fork Creek Bridge
G. S. Wilson, Palmer Engineering, USA

Bridge Failures - A Summary and Evaluation
R. Lawrie, L. Gao, Lawrie & Associates, LLC , USA

The 2006 Rope Access Inspection of the Brooklyn Bridge Towers: A New View of an Old Bridge J. C. Schmidt, DMJM Harris, USA

FDR Drive Southbound Rehabilitation and Outboard Detour Roadway S. Tawiah, N. Porto, HDR/Daniel Frankfurt, USA

6:15-7:30 pm

**FORUM ON BRIDGE FAILURES :
Broadway Act I & II**

**4TH NEW YORK CITY BRIDGE CONFERENCE PROGRAM
TUESDAY, AUGUST 28TH, 2007**

7:00am **REGISTRATION: Foyer**

8:15-9:40 am **KEYNOTE SESSION (II)**
Broadway Act I, II & III

8:15-8:40 am **State of Practice in the Inspection of Grouted Duct Post-Tensioned Concrete Bridge Structures** Michael Forde, University of Edinburgh, UK

8:45-9:15 am **Bangkok South Outer Ring Road Cable-Stayed Bridge** Jean-Marc Tanis, CEO, Jean Muller International, France

9:20-9:40 am **Highlights of the Proposed Congestion Pricing Plan in New York City** Steven Weber, Assistant Commissioner, Office of Strategic Planning, New York City Department of Transportation, USA

9:40 -10:05 am **COFFEE BREAK: Atrium & Broadway Act IV**

10:10 am-12:10 pm **SESSION 4A: CABLE-SUPPORTED & LONG-SPAN BRIDGES (II)**
Broadway Act I

Suspender Rope Replacement Of The I-87 Twin Arches Over The Mohawk River, Albany, New York M. Mangione, R. Panchalan, CHAS. H. SELLS Inc., USA; K. Mahmoud, Bridge Technology Consulting, USA; E. Gundrum, NYSDOT, USA

Ultimate Capacity of Suspension Bridges with Arbitrary Imperfect Towers
M. Inoue, IHI Co., Ltd., Japan

The Freyssinet F-Spinning System A. Coudret, Freyssinet LLC, USA

Cable Supported Footbridge Analysis with Construction Staging A. Caner, Middle East Technical University, Turkey

Development of Design Criteria for Long Span Bridges F. Ibrahim, FHWA, USA; J. Tse, Parsons Brinckerhoff, USA

10:10 - 12:10 pm **SESSION 4B: BRIDGE MONITORING & MAINTENANCE**
Broadway Act II

Improving Tomorrow's Infrastructure: Extending the Life of Concrete Structures with Solid Stainless Steel Reinforcing Bar R. E. Schnell, Talley Metals Technology, Inc., USA; M. P. Bergmann, New York State Department of Transportation, USA

Ultra-Weatherable Fluoropolymer Coatings for Bridges J. W. Darden, AGC Chemicals Americas, USA; T. Takayanagi, AGC Chemicals, Japan

Effective Waterproofing of Bridge Decks
B. Kudrenski, Bridge Preservation, Canada, J.P. Bilotti, R.J. Watson, Inc., USA

Scour Monitoring Program for the South Shore

of Long Island B. Hunt, STV Inc., USA;

P. Besmertnik, NYSDOT, Region 10, USA

Use of Structural Health Monitoring H. Yun, R.D.

Nayeri, R.W. Wolfe, S.F. Masri, M. Wahbeh,

F. Tashbihgoo, J.P. Caffrey, University of Southern California, USA; L.-H. Sheng, California Department of Transportation, USA

12:20-1:20 pm

LUNCH: Times Square

1:35-3:35 pm
Broadway Act I

SESSION 5A: INNOVATIVE BRIDGE TECHNOLOGY

Heat Curving HPS 485W Bridge I-Girders

A.N. Gergess, University of Balamand, Lebanon;

R. Sen, University of South Florida, USA

Active Fatigue Crack Detection and Categorization on Steel Highway and Railroad Bridges Using the Electrochemical Fatigue Sensor

M. Miceli, Sam Schwartz Engineering, PLLC; M. Moshier, B. Phares, Material Technologies, USA

Crevice Corrosion Can be Stopped with a High Ratio Calcium Sulfonate

C.A. Ballinger, Craig Ballinger & Associates, USA

Common Problems, Uncommon Solution: Column Replacement with Drilled Shafts

H. Kopkalli, Ysrael A. Seinuk, USA

Testing of a Novel Flexible Concrete Arch System

S.Taylor, Queen's University of Belfast, Northern Ireland

1:35-3:35 pm
Broadway Act II

SESSION 5B: BRIDGE INSPECTION & REHABILITATION (II)

Easterly Passaic River Bridge Reconstruction

W. Johnsen, J. H. Laird, New Jersey Turnpike Authority, USA

Bridge Management and Inspection System for Montgomery County, Maryland

J. K. Shaffer, M. C. Schellhase, InspectTech, USA

A Bridge Inspection Management and Data System for the New York City Department of Transportation

J. Stieb, Advitam, USA

Rapid Delivery! New Jersey Overnights Bridge Rehabilitation for Trenton Bridges

H. A. Capers Jr., Arora and Associates, USA; X. Cheng, New Jersey Department of Transportation, USA

Westfield Great River Bridge

M. Ennis, STV Incorporated, USA

3:35-4:00 pm

COFFEE BREAK: Atrium & Broadway Act IV

4:05-6:05 pm
Broadway Act I

SESSION 6A: CONCRETE SEGMENTAL & POST-TENSIONED BRIDGES

Accelerated Construction of Precast Concrete Piers on the Route 70 Over Manasquan River Bridge Replacement Project E.Yermack, Arora and Associates, USA

Cyclic Tests of Precast Segmental Unbonded Post-Tensioned Concrete Bridge Columns
Y.-C. Ou, G. C. Lee, University at Buffalo, P.-H. Wang, M.-S. Tsai, K.-C. Chang, National Taiwan University, Taiwan

Durability of Concrete Segmental Bridges
D. I. Banic, Z. Banic, D. Tkalcic, Civil Engineering Institute of Croatia, Croatia

Inspection and Rehabilitation of Jamestown-Verrazzano Segmental Concrete Bridge
M. J. Abrahams, S. Kaufman, PB Americas, Inc., USA; P. Fisk, NDT Corporation, USA

Design of Florida Avenue Bridge Over the Inner Harbor Canal E.T. Nelson, DMJM Harris, USA

4:05-6:05 pm
Broadway Act II

SESSION 6B: MOVABLE BRIDGES

Innovative Moveable Bridge Concepts for The South Capitol Street Bridge R. McCabe, HNTB Corporation, USA

Versatility of Bailey Panel Bridges -- Rapid Design & Construction of a Unique Movable Span Bailey Bridge G. Graham, G. Gilmore, Bailey Bridge Company, USA

Borden Avenue Bridge Slides into the Twenty-First Century D. Biegel, R. Ezyk, STV Inc., USA

Maintenance Issues in Bascule Bridges
M. Saad-Eldin, Region 10, NYCDOT, N. Altebrando, STV Inc., USA

LRFR WORKSHOP - TUESDAY, AUGUST 28TH, 2007

8:00-8:05 am
Broadway Act III

**BRIDGE ENGINEERING ASSOCIATION
CHAIRMAN'S WELCOME:**

Dr. Khaled M. Mahmoud, PE, President
Bridge Technology Consulting, New York City, USA

Workshop Instructors:

B. Sivakumar, PE, Chief Bridge Engineer, Lichtenstein
Consulting Engineers
J. DiMaggio, PE, Principal Bridge Engineer, FHWA

8:05 am - 8:10 am
Broadway Act III

**INTRODUCTION AND FHWA'S PERSPECTIVE
ON LRFR**

F. Sheikh Ibrahim, PhD, PE, Senior Bridge Engineer, FHWA

8:15-9:20 am
Broadway Act III

**INTRODUCTION TO LOAD & RESISTANCE
FACTOR RATING** B. Sivakumar

9:40-10:05 am

COFFEE BREAK: Atrium & Broadway Act IV

10:10 am - 12:10 pm
Broadway Act III

**WORKSHOP SESSION I: LOAD MODELS &
LIMIT STATES**

**LOAD MODELS FOR STRUCTURAL EVALUA-
TION** B. Sivakumar

**LIMIT STATES & RELIABILITY INDICES FOR
LOAD RATING** B. Sivakumar

12:20-1:20 pm

LUNCH: TIMES SQUARE

1:35- 3:35 pm
Broadway Act III

**WORKSHOP SESSION II: LOAD RATING EQUA-
TION & FACTORS**

LOAD RATING EQUATION & PROCESS
B. Sivakumar

**THE NEW AASHTO MANUAL FOR BRIDGE
EVALUATION**

B. Sivakumar

3:35 - 4:00 pm

COFFEE BREAK: Atrium & Broadway Act IV

4:05 - 6:30 pm
Broadway Act III

**WORKSHOP SESSION III: FOUNDATION
EVALUATION & DESIGN EXAMPLES**

EVALUATION OF FOUNDATION COMPONENTS

J. DiMaggio

STEEL GIRDER LOAD RATING EXAMPLE

B. Sivakumar

**PRESTRESSED GIRDER LOAD RATING
EXAMPLE** B. Sivakumar

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