

October 20th-21st, 2003

Second New York City Bridge Conference

at the Hilton New York, 1335 Avenue of the Americas in NYC

conference program
& event schedule



Conference Scientific Committee:

Khaled Mahmoud, PhD, PE, Chairman
Associate & Director of Long Span Bridges
Hardesty & Hanover, USA

Harry Capers Jr., PE
State Bridge Engineer, New Jersey Department of
Transportation, USA

Subimal Chakraborti, PE
Regional Director, Region 10, New York State Department
of Transportation, USA

Douglas Currey, PE
Regional Director, Region 11, New York State Department
of Transportation, USA

John Fisher, PhD, PE
Professor Emeritus, Lehigh University, USA

Gerard Fox, PE
Consultant Engineer, USA

Ian M. Friedland, PE
Federal Highway Administration, Office of Bridge
Technology, Washington, DC, USA

John Kulicki, PhD, PE
President & CEO, Modjeski & Masters, USA

Francis J Lombardi., PE
Chief Engineer, The Port Authority of New York & New
Jersey, USA

Dennis Mertz, PhD, PE
Professor, University of Delaware, USA

Charles Minervino, PE
Principal, Lichtenstein Consulting Engineers, Inc., New
Jersey, USA

William Moreau, PE
Chief Engineer, New York State Bridge Authority, USA

Henry Perahia, PE
Deputy Commissioner and Chief Bridge Officer, New York
City Department of Transportation, USA

Michel Virlogeux,
Consulting Engineer and Designer, France

Stanley Vonasek, PE
Chief Engineer, MTA Bridges & Tunnels, New York, USA

Bojidar Yanev, PhD, PE
Director of Bridge Inspection/Bridge Management, New
York City Department of Transportation, USA

Chairman's Welcome

On behalf of the Bridge Engineering Association, I would like to welcome you to the Second New York City Bridge Conference and to the great City of New York. The Bridge Engineering Association has organized and sponsored the Second New York City Bridge Conference with a distinguished group of renowned bridge engineers from all over the world. Problems that are faced by bridge engineers include issues of structural safety, environmental impacts, bridge maintenance and management, increasing traffic loads and socio-economic considerations. These go beyond geographical boundaries and encompass the worldwide bridge engineering community. It is therefore of paramount importance that bridge engineers from different countries exchange knowledge, information and experience concerning the common challenges that confront our industry. It is such a global framework that distinguishes the Second New York City Bridge Conference with the presentation of state-of-the-art papers from different countries on a wide range of topics in bridge engineering. Throughout the next two days, bridge engineers from Austria, China, Canada, England, France, Germany, Ireland, Italy, Japan and Norway will present the recent developments in bridge engineering. These, along with an impressive list of U.S. bridge engineering experts, will make the conference notable for its international impact and archival quality.

I would like to take the opportunity to express sincere thanks to all the organizations that provided generous financial support to the conference to make it possible. A special note of gratitude is due to the authors and reviewers of the papers. The quality of the conference proceedings is a result of the sacrifice of time and effort, dedication and collective wisdom of this body of technical experts in authoring and reviewing the papers. I acknowledge with appreciation their contributions.

Finally, I would also like to thank my staff at Hardesty & Hanover for the tremendous support they provided me throughout the process of organizing this event.

On a personal note, organizing this conference was very rewarding.

Khaled M. Mahmoud, PhD, PE
Chairman of Bridge Engineering Association
Associate & Director of Long Span Bridges
Hardesty & Hanover
New York, New York, USA

MONDAY, OCTOBER 20, 2003

7:00am

REGISTRATION: 2nd Floor South Corridor

8:00-9:25am

Welcome and Keynote Session located in Gramercy Suite A&B on the 2nd Floor.

8:00-8:10am

CHAIRMAN'S WELCOME: Dr. K. Mahmoud

8:15-9:25am

KEYNOTE SESSION (I)

Methodology for Assessing Risk and Prioritizing Security Improvements for Bridges

Francis J. Lombardi, PE, Chief Engineer, The Port Authority of New York & New Jersey

The Millau Cable-Stayed Bridge

Michel Virlogeux, Consulting Engineer and Designer, France

9:30-9:55am

COFFEE BREAK: 2nd Floor South Corridor

10:00-11:45am

SESSION 1A: CABLE-SUPPORTED BRIDGES (I)

Gramercy Suite A&B, 2nd Floor

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

The Design and Construction of the New Carquinez Strait Suspension Bridge

T. Spoth, K. Serzan and D. Khazem, Parsons

Simon Kenton Suspension Bridge Deck Replacement Analysis

B. Robson, Palmer Engineering, Winchester, Kentucky and K. Mahmoud, Hardesty & Hanover, LLP, New York, New York

The East 153rd Street Bridge - New York City's First Vehicular Cable Stayed Bridge

Alim Baycora, CTE, Ali Mallick, NYCDOT, Jeffrey Han, Tim Jester, Daniel Frankfurt, P.C.

Developments in Concrete Cable-Stayed Bridges in the United States

Marcos Loizias, Jacobs Civil, Inc

10:00-11:45am

SESSION 1B:

Murray Hill Suite A&B, 2nd Floor

SEISMIC ANALYSIS, DESIGN & RETROFIT (I)

Session Chair: Ian M. Friedland, PE, Federal Highway Administration, Office of Bridge Technology, Washington, DC

Liquefaction Assessment Methodologies for Seismic Bridge Design and their Application to New York City Projects

S. Nikolaou, P. Deming, and P. Edinger, Mueser Rutledge Consulting Engineers

Seismic Analysis and Design Approach for the New Tacoma Narrows Suspension Bridge

Michael H, Jones, HNTB Corp.

Seismic Analysis of Movable Bridges
N. Altebrando, B. Yin, C. Birnstiel and M.
Ludvik, Hardesty & Hanover, LLP

Sliding Isolation Applications In The
Northeastern USA
R.J. Watson & J.P. Bilotti, R.J. Watson, Inc.

10:00-11:45am
*Nassau Suite
A&B, 2nd Floor*

SESSION 1C: BRIDGE CONSTRUCTION
Session Chair: Subimal Chakraborti, PE,
Regional Director, Region 10,
New York State Department of Transportation

Applying The Principals Of Get In, Get Out,
And Stay Out Designing And Detailing Of
Highway Structures For Rapid Construction In
New Jersey

H. Capers, Jr., J. Lopez, R. Lewis, New Jersey
Department of Transportation and H. Nassif,
Rutgers University

The Construction of the Boyne Bridge
David Taylor, Dorman Long Technology Ltd,
United Kingdom

Effects of Construction Methods on the
Performance of Segmental Bridges
N.A. Shemo, L.D. Savant, H. R. Roecker, K.V.
Butler, DMJM+HARRIS, U.S.A.

Structural Health Monitoring During the
Construction of the Evergreen Point Bridge
T. Weinmann & A.E. Lewis, Construction
Technology Laboratories, Inc.

12:00-12:45pm
12:45-1:45pm

AWARD CEREMONY: Grand Ballroom, 3rd Fl.
LUNCHEON: Grand Ballroom, 3rd Fl.

2:00-3:45pm
*Gramercy
Suite A&B,
2nd Floor*

SESSION 2A:
BRIDGE ANALYSIS & DESIGN (I)
Session Chair: Gerard Fox, PE, Consultant,
Garden City, New York

Innovation in Movable Bridges: Sophisticated
Design and Analysis with an Eye on Tradition
T. Zordan, B. Briseghella, E. Siviero, University
Institute of Architecture in Venice (IUAV), Italy
and M. Pircher, M. Wallner, Technical University
of Graz (TUG), Austria

Strength and Ductility of Plate Girders with
Holes in the Tension Flange
S. A. Alstade and R.J. Dexter, University of
Minnesota

Effect of Skew and Curvature on Steel Girders
Sena (T.) Kumarasena, Gary Gardner, Marco
Loureiro, and Joey Breton HNTB Corp.

Bridge Design: Load Interaction
Agnus Low & Mark Roche, Arup

2:00-3:45pm

Murray Hill
Suite A&B,
2nd Floor

SESSION 2B:

CONCRETE SEGMENTAL BRIDGES

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

The Role of Construction Methods on the Conceptual Design of a Segmental Prestressed RC Bridge

M. Arici, S. Bullo, R. Di Marco and M.F. Granata, University of Palermo-DISeG, Italy

Durability of Post-Tensioned Concrete Bridges

R. Poston, WDP & Associates, Austin, Texas and K. Frank, The University of Texas, Austin, Texas

Corrosion Evaluation of Post-Tensioned Tendons on the Mid-Bay Bridge in Destine, Florida

S. Venugopalan, Exponent Failure Analysis and W. Hartt, Florida Atlantic University

Design of the Victory Bridge Replacement for NJ DOT - features 440' precast main span

Jose M. Rodriguez, FIGG Bridge Engineers

2:00-3:45pm

Nassau Suite
A&B, 2nd Floor

SESSION 2C: ADVANCED MATERIALS

**Session Chair: Mohammed Ettouney, PhD, PE, Principal, Weidlinger Associates Inc.,
New York, New York**

High Performance Lightweight Concrete Bridges in Norway - A Review

Per Fidjestol, Elkem ASA Materials, Norway

Methacrylate Thin Bonded Overlay System for Orthotropic Steel Bridge Decks

Michael Olbrich, Röhm GmbH & Co. KG, Germany

Diagnostic Testing and In-Service Performance Monitoring of a CFRP Reinforced HPC Bridge Deck

M. Bowman, SUBMEPP Activity - Dept. of Navy, Kittery, ME, J. Yost, Villanova University, Villanova, PA, R. Steffen, William Kreysler & Associates, Inc., American Canyon, CA and C. Goodspeed, University of New Hampshire, Durham, NH

High Performance Steel for Highway Bridges

Vasant C. Mistry, Federal Highway Administration

3:45-4:10pm

COFFEE BREAK: 2nd Floor South Corridor

4:15-6:00pm

Gramercy
Suite A&B,
2nd Floor

SESSION 3A: FATIGUE, BRITTLE FRACTURE & STRESS CORROSION

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

Failure Analysis of the Hoan Bridge Fractures
W.J. Wright, FHWA, J.W. Fisher and E.
Kauffmann, Lehigh University

Assessing Remaining Fatigue Life of Existing
Riveted Steel Bridges
Y. Edward Zhou, URS Corp.

Fracture Analysis and Retrofit Design for the I-
95 Bridge over the Brandywine River
M. Chajes, D. Mertz, University of Delaware,
H. Roecker and J. Milius, DMJM Harris

Dehumidification of Bridge Anchorages to
Prevent Cable Wire Corrosion
Aris Stathopoulos, MTA Bridges and Tunnels

4:15-6:00pm
Murray Hill
Suite A&B,
2nd Floor

**SESSION 3B: BRIDGE HEALTH MONITORING
& MANAGEMENT (I)**

Session Chair: Bojidar Yanev, PhD, PE,
Director of Bridge Inspection/Bridge
Management, New York City Department of
Transportation

Long-term Remote Monitoring of Prototype
Orthotropic Deck Panels on the Bronx
Whitestone Bridge for Fatigue Evaluation
R. Connor, S. Richards and J. Fisher, Lehigh
University

Sensing Systems for Bridges: An Assessment of
the State-of -the-Art
Dimitri A. Grivas, Rensselaer Polytechnic
Institute and Maria E. Moreyra Garlock,
Princeton University

Structural Health Issues for FRP Bridge Decks
S. Alampalli, NYSDOT and M. Ettouney,
Weidlinger Associates

An Information System for Bridge Life Cycle
Assessment
Kirk Huang, New York State Thruway Authority,
Yung-Ching Shen, Siena College, and Larry J.
Feeser, Rensselaer Polytechnic Institute.

4:15-6:00pm
Nassau Suite
A&B, 2nd Floor

SESSION 3C: BRIDGE REHABILITATION (I)

Session Chair: Raymond McCabe, PE, Director
of Bridges and Tunnels, HNTB, New York

Eklutna River Bridge Rehabilitation
Shawn E. Tunstall and Brian J. Leshko, HDR
Engineering, Inc.

Rehabilitation of City of Chicago's Skyway Toll
Bridge
Elizabeth Gallagher, Jixing He, Bradley
Radovich, Consoer Townsend Envirodyne
Engineers, Inc.

Replacement of the Hood Canal Bridge
P. Clarke, Washington Department of
Transportation and M. Abrahams, Parsons
Brinkerhoff

Orthotropic Deck Panel Fabrication and
Installation for the Triborough Bridge
James Valenti and Brendan Scahill,
Greenman-Pedersen, Inc.

TUESDAY, OCTOBER 21, 2003

7:00am

REGISTRATION: 2nd Floor South Corridor

KEYNOTE SESSION (II)

Seismic Retrofit Design of Large Cable-
Supported Bridges in Tokyo
Yozo Fujino, University of Tokyo, Japan

The Stonecutters Bridge: Pushing the Limit
Naeem Hussain, Arup, Hong Kong

The Erection of Cable-Suspended Bridges
Holger S. Svensson, Leonhardt, Andrä und
Partner, Germany

9:55-10:25am

COFFEE BREAK: 2nd Floor South Corridor

10:30-12:15pm

SESSION 4A: BRIDGE ANALYSIS & DESIGN (II)

**Session Chair: Henry Perahia, PE, Deputy
Commissioner and Chief Bridge Officer,
New York City Department of Transportation**

*Gramercy
Suite A&B,
2nd Floor*

Hoan Bridge Brittle Fracture and Retrofit
Design

B. Sivakumar, Eli Khoury, Lichtenstein
Consulting Engineers, J. Fisher, Lehigh
University and W. Wright, FHWA

Bridge Selection Process for the I-70 Mississippi
River Bridge in St. Louis

J. Kulicki, T. McMeans and W. Marianos,
Modjeski & Masters

A New Generation of Arch Signature Structure:
The Woodrow Wilson Memorial Bridge
Serafim Arzoumanidis and Greg Shafer,
Parsons Corporation

LFRD Refined Analyses Used to Check Inverset
Design

K.A. Clausen & E.W. Bader, Dewberry-
Goodkind, Inc.

10:30-12:15pm

SESSION 4B:

INNOVATIVE BRIDGE TECHNOLOGY

**Session Chair: Barry Silberfarb, PE, Chief
Structural Engineer, MTA Bridges and Tunnels,
New York**

*Murray Hill
Suite A&B,
2nd Floor*

The Federal Highway Administration's Vision for a Bridge Technology Program

Steven B. Chase, Technical Director for Bridges, Federal Highway Administration

Composite Structures for the Future

Raymond McCabe, HNTB Corp.

Prefabricated Bridge Innovations

Gregg Freeby, Ronald D. Medlock & Sharon Slagle, Texas DOT, Austin

US 20 over the Mississippi: Tied Arch Technology for the 21st Century

P. Cassity & K. Serzan, Parsons and N. McDonald, Iowa DOT

10:30-12:15pm
Nassau Suite
A&B, 2nd Floor

SESSION 4C: MOVABLE BRIDGES

Session Chair: Paul Skelton, PE, Partner, Hardesty & Hanover, New York, New York

Vessel Collision and Pier Protection for the New Wittpenn Vertical Lift Bridge

Dayi Wang and Lynne M. Baumann, Jacobs Civil, Inc. and Feraidoon Kashani, NJDOT

Utilization of Hydraulics in New and Rehabilitated Moveable Bridges

Eric Kelley, HNTB Corp.

Design-Build of a Twin Temporary Vertical Lift Bridges on Route 3A over the Fore River, MA.

Mark Joosten, Acrow Bridge

Replacement of the Third Avenue Swing Bridge over the Harlem River

Sean Bluni and Paul Connolly, Hardesty & Hanover, LLP

12:15-1:30pm

LUNCHEON: Sutton Parlor, 2nd Fl.

2:00-3:45pm
Gramercy Suite
A&B, 2nd Floor

SESSION 5A:

SEISMIC ANALYSIS, DESIGN & RETROFIT (II)

Session Chair: Joseph Englot, PE, Assistant Chief Engineer, Port Authority of New York and New Jersey

Comparative study of NCHRP Report 472 with the current AASHTO Seismic Specifications

Ali Khan, STV Inc.

Seismic Retrofit of Bridge Steel Truss Pier Anchorage Connections

Michel Bruneau and Michael Pollino, University at Buffalo

Seismic Retrofit of A Historic Three-Hinge Concrete Arch Bridge

Sherif S. Morcos, Ali M. Hamza, John C. Koo, HDR Engineering, Inc.

2:00-3:45pm
Murray Hill
Suite A&B,
2nd Floor

A Simple Procedure for Evaluating Seismic Isolation in Bridges

M. Jacak, Seismic Energy Products, LP,
Alameda, California, USA

SESSION 5B: CABLE-SUPPORTED BRIDGES (II)

Session Chair: Stanley Vonasek, PE, Chief Engineer, MTA Bridges & Tunnels, New York

Wind effects on the existing and proposed new Tacoma Narrows bridges

P.A. Irwin, S.T. Stoyanoff, J. Xie & M.A. Hunter,
Rowan Williams Davies & Irwin Inc., Guelph,
Ontario, Canada

Effectiveness of Fairings on a Suspension Bridge

H.R. Bosch & R. M. Guterres, Turner-Fairbank
Highway Research Center, FHWA

Transient Response Simulation of a Composite Material Footbridge to Crossing Pedestrians

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

Design of the Main Suspension Cable for the New San Francisco - Oakland Bay Bridge

Marwan Nader, John Sun and Rafael
Manzanarez, T.Y. Lin International

SESSION 5C: OPEN SESSION

Session Chair: Steven B. Chase, PhD, PE, Technical Director for Bridges, Federal Highway Administration

High Performer's! New Jersey's First High Performance Steel Bridges

H. Capers, Jr., J. Lopez, R. Lewis, New Jersey
Department of Transportation and H. Nassif,
Rutgers University

New Grout System for Cable-Stayed Bridges

Jesus M. Rohena, FHWA Resource Center

Construction of the Hangzhou Bay Bridge in China

Beile Yin, Hardesty & Hanover, LLP, and
Mingshan Fang, EHHBB, Ning Bo, China and
Andrew Herrmann, Hardesty & Hanover, LLP

Crosswicks Creek Bridge - A Modern Timber Trestle

Lori J. Gale, Parsons Brinckerhoff

How Bridges Affect Ride Quality on Ohio's Interstate Highway System

B.L. Schleppe, Ohio Department of
Transportation, Office of Pavement Engineering

2:00-3:45pm
Nassau Suite
A&B, 2nd Floor

3:45-4:10pm

COFFEE BREAK: 2nd Floor South Corridor

4:15-6:00pm
Gramercy Suite
A&B, 2nd Floor

SESSION 6A: BRIDGE HEALTH MONITORING & MANAGEMENT (II)

Session Chair: Barney T. Martin Jr., PhD, PE, Principal, Modjeski & Masters, Poughkeepsie, New York

Advances in Bridge Materials and Structural Health Monitoring Systems with Case Studies
A. Lewis, T. Weinmann and N. Telang,
Construction Technology Laboratories, Inc.

East River Bridges Preventive Maintenance Program

Michael Hershey, Hardesty & Hanover, LLP and Mo Sharif, NYCDOT

Probabilistic Assessment of the Subsurface Condition of Bridge Decks Using GPR

H. Shin and D. Grivas, Rensselaer Polytechnic Institute

Suspension Bridge Service Life Issues: An Owner's Perspective

B.P. Silberfarb, J. Chang & L.R. Taylor, MTA Bridges and Tunnels, New York, NY, USA

4:15-6:00pm
Murray Hill
Suite A&B,
2nd Floor

SESSION 6B: BRIDGE REHABILITATION (II)

Session Chair: Harry Capers Jr., PE, State Bridge Engineer, New Jersey Department of Transportation

The Case of the Case Bridge

Niket M. Telang and Armin B. Mehrabi,
Construction Technology Laboratories, Inc.

Replacement of Metro-North's Bronx River Bridge

Ted Henning, Parsons and Peter Pappas,
Metro-North Railroad

Rehabilitation of Three East Pine Street Bridges

Philip Swanton, Dewberry

Widening and Rehabilitation of I-81 Bridges, Rockingham County Virginia

R. Penmatsa, DMJM Harris, T. Barati, VDOT and E. Saunders, DMJM Harris

Engineering Achievement Awards

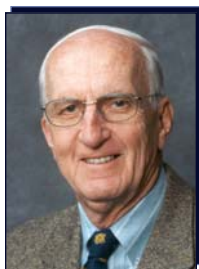
AWARDS CEREMONY

Monday, Oct. 20th at 12:00pm
in the Grand Ballroom, 3rd. Floor

Bridge Engineering Research Award

JOHN E. BREEN

Professor Breen was born in Buffalo, New York on May 1, 1932. Educated at Canisius High School in Buffalo, he graduated from Marquette University, the University of Missouri and received his Ph.D. from the University of Texas. He also served as a construction-engineering officer in the US Navy; a faculty member at Missouri, for 18 years directed the Ferguson Structural Engineering Laboratory, and currently holds the Nasser I Al-Rashid Chair at The University of Texas. He has received 5 university and national awards for his teaching of structural concrete design. He is a co-author of the Wiley text, Reinforced Concrete Fundamentals.



Dr. Breen has made significant contributions in structural concrete research, winning numerous awards including 10 medals from ASCE, ACI and PCI for published papers on applications such as slender column design, reinforcement development and splicing, general structural integrity, post-tensioned anchorage zones, segmental bridge design, corrosion protection of bridge decks and cable stays, and bridge aesthetics. He was a pioneer in US precast segmental bridge technology. He has been a leader and major contributor in the development of design and construction standards for concrete bridges and was a principal author of the AASHTO Guide Specifications for Segmental Bridges. Dr. Breen has also been a consultant on a number of bridge projects, including the Sunshine Skyway, and chaired the Independent Design Board for the Storebaelt West Bridge in Denmark.

An Honorary Member of ACI, he has chaired the ACI 318 Building Code Committee and IABSE Working Commission 3. He has been elected to both the USA National Academy of Engineering and the Swiss Academy of Engineering Sciences, received the FIP Medal in 1990, the IABSE International Award of Merit in 2000, and the fib Freyssinet Medal in 2002.



Bridge Design Award

MICHEL P. VIRLOGEUX

Michel Virlogeux was born in Sarthe France in 1946. He graduated from Ecole

Polytechnic in 1967, and from the National School of Bridges and Roads in 1970. He became Doctor Engineer of the Pierre et Marie Curie University, Paris in 1973. Between 1974 and 1994 he worked in Tunisia for three years and in the SETRA, the Technical Service of the Highway Administration in France. In 1980, he became head of the concrete bridge division and seven years later he became the head of the bridge division of SETRA.

He contributed to some technical evolutions, such as external prestressing, cable-stayed bridges and composite structures. He received the IABSE Prize in 1983, the Guerite Silver Medal of the British Section of the Ingenieurs et Scientifique de France in 1985, the Practical Construction Award of the American Concrete Institute in 1992, the Reed and Mallik Medal of the Institution of Civil Engineers in 1994, and the George S. Richardson Medal of the Engineers' Society of Western Pennsylvania in 1995. In France, he received the silver-gilt medal of the Society of Encouragement to Progress in 1993, and one of the five "Vinci de la Construction" which have been attributed in 1994 by the Society of Encouragement for the National Industry. In February 1995, he received the Award of Excellence from the Engineering News Record, given for the first time outside America. In February 1997, he received the Gold Medal of the Institution of Structural Engineers and in May of the same year, the Silver Medal of the French Academy of Architecture. In 1999 he was the first recipient of the Fritz Leonhardt Prize and the Gustave Magnel Gold Medal. In 2002 he received the Award for the Italian Prefabrication Industry (CTE). In 1998 the Normandy Bridge, which he designed, received a FIP Outstanding Structure Award.

He has been Secretary, Secretary General and Executive Vice-President of the French Association for Construction for over twenty years (1974-1997), and President of the International Federation of the Prestressed Concrete since September 1996, until merging with the Euro-International Committee of Concrete in May 1998 to constitute the International Federation of Concrete, fib, of which he has been elected President; he became Honorary President of fib at the end of his term in September 2000. He was a member of the Committee of Applications of the Academy of Science (CADAS) until the transformation of the CADAS into the new Academy of Technologies in 2000, of which he became member; he is Fellow of the Institution of Structural Engineers. He has been nominated expert at the Paris Appeal Court in January 2003, and he was made "Chevalier del l'Ordre National du Merite" in 1989 and "Officier" in 2000.

The Bridge Engineering Association
would like to thank the following
organizations for their financial support:

PLATINUM SPONSOR

HARDESTY & HANOVER, LLP
BRIDGE ENGINEERING

GOLD SPONSORS

ARUP



HNTB



SILVER SPONSORS (Table-top Displays)

Automatic Power Inc.
Beeche Systems Corp.
Capital Services of NY, Inc.
Chase Speciality Chemicals Group
Con Span Bridge Systems
Corrpro Companies, Inc.
Dywidag Systems International
Greenman-Pedersen, Inc.
Grignard Company, LLP
LARSA
L.B. Foster Company
Physical Acoustics Corporation
Seismic Energy Products
Silica Fume Association

FOLD OUT FOR MAP OF
HOTEL CONFERENCE FACILITIES

PHOTO CREDITS

Front Cover (from top)

JK Bridge, Brasilia, Brazil

Photo courtesy of Alexandre Chan, Architect, Rio de Janeiro, Brasil
& Photographer Rui Faquini

Hangzhou Bay Bridge, Shanghai, China

Rendering courtesy of Engineering
Headquarters of Hangzhou Bay Bridge

Back Cover (from top)

London Millennium Bridge, London, England

Photo courtesy of Arup

Stonecutters Bridge, Hong Kong

Rendering courtesy of Arup

New San Francisco-Oakland Bay Bridge,

San Francisco, California, USA

Rendering courtesy of Caltrans



The Bridge Engineering Association is a not-for-profit organization whose mission is to promote the state-of-the-art in bridge engineering technology through the publications of the latest in bridge engineering technology and the organization of conferences, seminars and forums on various themes of interest to the bridge engineering community.

The Bridge Engineering Association advocates the dissemination of information to the public concerning the work of bridge engineers, and encourages the exchange of ideas, and gives proper consideration to questions affecting the bridge engineering profession.

For more information about the
Bridge Engineering Association,
please visit us online at <http://www.bridgeengineer.org>
or contact us via email at info@bridgeengineer.org, or
kmahmoud@bridgeengineer.org

BRIDGE ENGINEERING ASSOCIATION
1501 Broadway, Ste.310 New York, NY 10036
P: 212-944-1150, F: 212-391-0297