

The Evolving Metropolis

2019 IABSE Congress
New York City



Preliminary Invitation and Call for Abstracts

2019 IABSE Congress
September 4–6, 2019
The Javits Center
New York, NY



Introduction

September 4-6, 2019

The Evolving Metropolis

2019 IABSE Congress



New York City, US, will host the **2019 IABSE Congress** with the main theme of **The Evolving Metropolis**. According to Wikipedia, a Metropolis is “a large city which is a significant economic, political and cultural center for a country or region and an important hub for regional or international connections, commerce and communications”. What better place than the financial hub (and possibly) architectural center of the US and perhaps the world, than Manhattan in New York City.

The Evolving Metropolis: Addressing Structural Affordability, Durability, and Safety

Themes will address the social and economic needs of the world with main sessions on Durable Bridges and Affordable Housing as well as numerous other important and current issues presented in our world. New York City is a

key place on our continent to address the needs of society today with regards to the following:

- Designing bridges to last into the next century
- The future of housing the world's inhabitants at all income levels
- The latest technologies and construction techniques for creating a society that is sustainable and affordable for all
- Innovations in structural engineering to accommodate growth

On the following pages, you will see the complete list of sessions topics for selecting where to submit your abstract.

The organizers invite the world's structural engineering community to share their experiences with their colleagues and friends and have unique open discussions and forums on what the

future holds for engineering tomorrow's structures. Consultants, contractors, owners, researchers and practitioners will have the opportunity to exchange ideas and experiences on structural design, construction and maintenance issues as well as ideas for future growth and sustainability.



About the Congress

Dates and Venue

Date: September 4-6, 2019

Venue: The Javits Center
655 West 34th Street
New York, NY 10001

The IABSE Annual Meetings will take place prior to the Congress from Monday, September 2 to Tuesday, September 3, 2019, at the offices of Silman, which is located at 32 Old Slip in the heart of the Financial District, a short subway or taxi ride to the venue and hotels.

A Welcome Reception will be hosted by the US Group of IABSE on the evening of Tuesday, September 3, 2019.

Congress Format

The scientific program will include Plenary and Concurrent Sessions over

three days. Panel discussions and Poster Sessions will also be incorporated into the program.

Papers dealing with different themes and topics of the Congress will be selected from abstracts submitted to the Scientific Committee. These papers will be presented orally or by poster.

At the Plenary Sessions, invited Keynote Speakers will present lectures on key Congress topics. Sub-Plenary Sessions will be devoted to specialized topics. Concurrent Sessions will be organized by topics according to the selection of the Scientific Committee.

Panel Discussions will highlight themes of widespread interest as identified by IABSE's Commissions and Task Groups as well as IABSE members and non-members, in agreement with the

Scientific Committee and the Organizing Committee. Posters will be presented by their authors in facilitated sessions to enable contact with the paper authors during the Poster Sessions.

The official language of the Congress is English.

Participants

The Congress is intended for civil and structural engineers, architects and associated professionals interested in the Evolving Metropolis.

Participants will include designers, consultants, researchers, owners, contractors, operators, suppliers and representatives of authorities and others interested in the Congress themes and topics.



Scientific Committee

Jonathan McGormley, USA Chair
 Eftychia Apostolidi, Austria
 Mourad Bakhoum, Egypt
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 Bruno Briseghella, China
 Maria Grazia Bruschi, USA
 Yinghong Cao, USA
 Mat Carter, USA
 Stephanos Dritsos, Greece
 Guangli Du, Denmark
 John Duntemann, USA
 Ian Firth, United Kingdom
 Carlos Galindo Mendez, Mexico
 Rade Hajdin, Switzerland
 Niels Peter Hoj, Switzerland
 Mats Karlsson, Sweden
 Ho-Kyung Kim, Republic of Korea

Andreas Lampropoulos, United Kingdom
 Guy Larose, Canada
 Jose Antonio Lozano Galant, Spain
 Fernando Madrazo Aguirre, United Kingdom
 Giuseppe Carlo Marano, Italy
 Andrew Martin, Denmark
 Jose Matos, Portugal
 AnnaLisa Meyboom, USA
 Fausto Mistretta, Italy
 Marwan Nader, USA
 Luis Oliveira-Santos, Portugal
 Pedro Pacheco, Portugal
 Fabrizio Palmisano, Italy
 Nikolaj Rask Pedersen, Denmark
 Eberhard Pelke, Germany
 Svetlana Potapova, USA
 Robert Ratay, USA
 B.C. Roy, India
 Sougata Roy, USA
 Laurent Rus Jenni, Spain
 Fathy Saad, Egypt
 A. F. M. Saiful Amin, Bangladesh
 Kristian Schellenberg, Switzerland
 Ann Schumacher, Switzerland
 Ikuhide Shibata, Japan
 Anton Syrkov, Russian Federation
 Harshavardhan Subbarao, India
 Marina Traykova, Bulgaria
 Rob Vergoossen, The Netherlands
 Teng Wu, USA
 Ye Xia, China
 Stefan Zmigrodzki, Canada
 Daia Zwicky, Switzerland



Organizing Committee

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 Robert Silman, Honorary Chair
 Rebecca Bunrock
 Thomas Cooper
 Anirban De
 George Deodatis
 Salvatore DiBernardo
 Lee Franck
 John McCue, Treasurer
 Jonathan McGormley
 Katie Osborne
 Paul M. Skelton

Call for Abstracts

A request for abstracts for the 2019 IABSE Congress New York City is now open. Please submit your abstracts in PDF format and not exceeding 200 words by November 1, 2018 in order to be considered. Preference will be given to relevant papers submitted under one of the paper session topics. More detailed descriptions of paper sessions can be found at www.iabse.org/newyork2019.

Abstracts will only be accepted through our online peer review system using the template provided. No hard copy, fax or email submissions will be accepted. The Scientific Committee will review all submitted abstracts for acceptance as either an oral or poster presentation. Upon acceptance of your abstract, in order to be considered for full paper acceptance, you must also register to attend the Congress.

Suggestions can be directed to the two Focused Sessions: Tomorrow's Affordable Housing and The 200-Year Bridge or to any of the following themes and sub themes and presented through Parallel Sessions.

1. The 200-Year Bridge

This 2-day workshop occurring within the Congress will include a series of presentations by experts and practitioners in combination with presented papers. Abstracts are solicited for the following paper sessions:

- a. Engineering Sustainable Materials and Systems
- b. Advanced Instrumentation and Monitoring
- c. Designing for Durability
- d. Incorporating Cars, Buses, Trains, and Other Transportation Means
- e. Pushing Materials to Their Limits

2. Tomorrow's Affordable Housing

This 2-day workshop occurring within the Congress will include a series of presentations by experts and practitioners in combination with presented papers. Abstracts are solicited for the following paper sessions:

- a. Alternative Construction Materials and Techniques
- b. High Versus Low-Rise Affordable Housing
- c. Defining Affordable Housing
- d. Affordable Ecological Building Construction
- e. The Future of Mass Timber

3. Extreme Events, Climate Change and the Resilient Metropolis

Making today's urban centers, whether new or old, resilient to the threats of climate change and extreme events requires innovative thinking. Abstracts are solicited for the following paper sessions:

- a. Increasing Durability, Resilience, and Safety in the Future Using Lessons Learned from Failures in the Past
- b. Multi-Hazard Resilience
- c. Preparing the Unprepared: Steps Towards Seismic Resiliency of Existing Urban Structures
- d. Designing for Earthquake-Resistant Structures
- e. Climate Change Impacts on the Service Life of Reinforced Concrete
- g. Footbridges and Non-Redundant Structures over Critical Infrastructure
- h. Restoration and Strengthening of Historic and Significant Structures
- i. New York City: A Structural Engineer's Metropolis

4. Urban Infrastructure: Design and Preservation

From innovative new designs to historic restorations of all structure types, structural engineering in an urban context has unique challenges. Case studies demonstrating these challenges will be highlighted. Abstracts are solicited for the following paper sessions:

- a. Performance-Based Engineering of Buildings and Infrastructure
- b. Advanced Computing Methods for Wind Effects on Long-span Bridges
- c. Innovative Approaches to Slender and Complex Building Design with High Strength Concrete
- d. Mitigation of Wind-induced Vibrations in New and Existing Buildings
- e. Tunnel Resiliency
- f. Durable Reinforced Concrete Repairs



5. Mitigating Fire Hazards Through Engineering

There is a need to evaluate the proper fire resilience and safety of structures given the complex geometry, architecture, use of space, construction materials, and construction technology associated with today's urban arenas, convention centers, public buildings and cultural spaces.

Abstracts are solicited for the following paper sessions:

- a. Performance-Based Fire Engineering for Evolving Communities
- b. Fire Hazards in the Evolving Metropolis

Call for Abstracts, continued

6. Globalization and Structural Engineering

As globalization continues to accelerate, structural engineering companies simultaneously face global competition and new global opportunities. Travel facilitates the exchange of ideas and leads to creative new designs for the built environment. However, unnecessary and undesirable barriers because of differences in standards, credentials, or access to knowledge can negatively offset these benefits. Abstracts are solicited for the following paper sessions:

- a. Quality Management of Major Projects
- b. Global Interoperability
- c. Travel and the Structural Engineer

7. Technology, Automation, and Innovation

Structural engineering in the 21st century will rely upon technology, automation, and innovation to succeed in meeting the future restrictions and challenges placed on construction in an urban setting. Both emerging and proven examples will be presented. Abstracts are solicited for the following paper sessions:

- a. BIM/BrIM and Virtual Reality: Successful Applications
- b. Accelerated Bridge Construction
- c. Structural Health Monitoring
- d. Alternative Construction Materials
- e. Hybrid construction

8. Urbanization and Population Growth

Where land is scarce and the streets are narrow, construction in a dense urban center is risky, problematic, and often

costly. However, opportunities exist to recover costs through sustainable practices. Abstracts are solicited for the following paper sessions:

- a. Site and Construction Constraints – Their Influences on Building Costs
- b. Structural Safety of Urban Areas
- c. Opportunities and Challenges of Urban Mining of Renewable Resources
- d. The Challenges of Building Urban Infrastructure Quickly and Efficiently

Contributors can also suggest topic presentation methods such as paper, poster, panel discussion, etc. Abstracts will be accepted through **November 1, 2018**.

The Scientific Committee will review submitted abstracts and notify authors through the online portal.

Important Dates

- June 15, 2018 Call for abstracts
- November 1, 2018 Deadline for abstract submissions
- February 1, 2019 Notify authors of abstract acceptance
- March 1, 2019 Final invitation and registration opens
- May 1, 2019 Submittal deadline for full papers
- June 15, 2019 Notification of acceptance of full papers and announcement of presentation types
- July 1, 2019 Registration deadline for all presenting authors
- July 1, 2019 Deadline for early-bird registration
- September 2–3, 2019 IABSE Annual Meetings
- September 4–6, 2019 Congress



Young Engineers Program

All participants born in or after 1985 will benefit from a reduction in their registration fee. In addition, any main author born in or after 1985, who personally presents his or her own paper at the Congress, will be considered for additional recognition. An independent jury will select two contributions from young authors-oral or poster- and each will receive a prize of 2,000 CHF each. The prizes are offered by the IABSE Fellows and the Organizing Committee and will be presented at the Closing Ceremony of the Congress.

On September 4, 2019, an evening networking event will be organized to promote the interaction of Young Engineers with IABSE Fellows and Congress attendees.



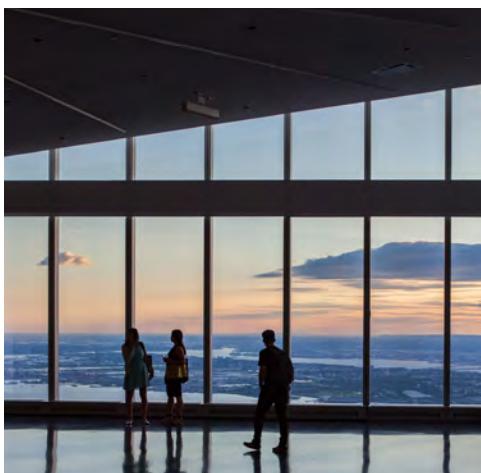
Exhibition & Sponsorship

A commercial exhibition is planned at the Congress venue. This offers a unique opportunity for companies to display their projects, products and services.

Companies interested in exhibiting can find information on the Congress website and are invited to contact the noted link as soon as possible to confirm current availability of exhibition space.

A sponsorship program is also available, to allow corporate partners to interact and engage with the Congress delegates and the engineering community.

For more information please visit www.iabse.org/newyork2019 or contact info@iabse-newyork2019.org.



Technical Visits

Technical Visits to interesting projects and to research facilities guided by local engineers are planned during the Congress. Visits will also be open to accompanying persons. More detailed information will be available in the Final Invitation and the Congress website.

Social Program

A social program will be organized for all Congress delegates and accompanying persons, including the Icebreaker Reception, Welcome Reception and the Gala Dinner. An accompanying tour will be organized.

Getting Here

By Plane

JFK and Newark International Airports are located 30-60 minutes away from the Convention Center and Hotels by car service, taxi or public transportation and serves most major international destinations by direct flight.



Venue

The Javits Center

655 West 34th Street
(enter on 11th Ave.,
between 35th and 36th Sts.).....*

Annual Meeting

Silman

32 Old Slip, at South Street
(South Street Seaport).....*

Hotels

INK 48

643 11th Avenue
(11th Ave. and 49th St.) 1

Millennium Broadway New York

Times Square

145 West 44th Street
(44th St., 6th Ave.–Broadway) ... 2

Hotel

570 Tenth Avenue
10th Ave. and 41st St..... 3



Current as of February 2018
Map by David Lindroth Inc.
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About the Venue

Where else in the world can you find 760,000 square feet of meeting space, bespoke services, and top-of-the-line amenities—all under one giant 7-acre green roof? Attending an event at the Javits Center is itself an event. The Javits Center is the crown jewel of the pulsating,

resurgent new West Side neighborhood—now transformed with the Hudson River Park, Hudson Yards and the recently expanded section of the High Line. And thanks to the new 7 Subway line extension across the street, all the excitement is closer than you ever imagined.



About New York City

According to facts from the History Channel, in 1664, the British seized New Amsterdam from the Dutch and gave it a new name: New York City. For the next century, the population of New York City grew larger and more diverse: It included immigrants from the Netherlands, England, France and Germany; indentured servants; and African slaves. By 1810 it was one of the nation's most important ports. It played a particularly significant role in the cotton economy: Southern planters sent their crop to the East River docks, where it was shipped to the mills of Manchester and other English industrial cities. Then, textile manufacturers shipped their finished goods back to New York. As the city grew, it made other infrastructural improvements. In 1811, the "Commissioner's Plan" established an orderly grid of streets and avenues for the undeveloped parts of Manhattan north of Houston Street. In 1837, construction began on the Croton Aqueduct, which provided clean water for the city's growing population. Eight years after that, the city established its first municipal agency: the New York City Police Department.

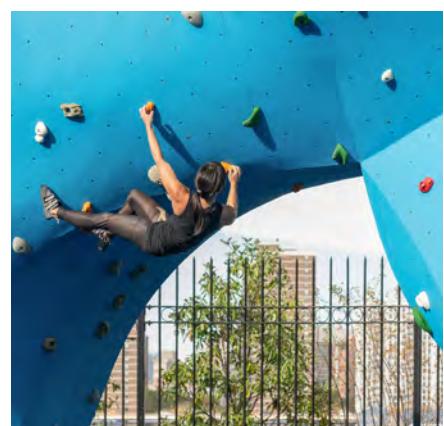
Meanwhile, an increasing number of immigrants, first from Germany and Ireland during the 1840s and 50s and then from Southern and Eastern Europe, changed the face of the city. They settled in distinct ethnic neighborhoods, started businesses, joined trade unions and political organizations and built churches and social clubs.

At the turn of the 20th century, New York City became the city we know today. In 1895, residents of Queens, the Bronx, Staten Island and Brooklyn—all independent cities at that time—voted to "consolidate" with Manhattan to form a five-borough "Greater New York." As a result, on December 31, 1897, New York City had an area of 60 square miles and a population of a little more than 2 million people; on January 1, 1898, when the consolidation plan took effect, New York City had an area of 360 square miles and a population of about 3,350,000 people.

The 20th century was an era of great struggle for American cities, and New York was no exception. The construction of interstate highways and suburbs after World War II encouraged affluent people to leave the city, which combined with deindustrialization and other economic changes to lower the tax base and diminish public services. This, in turn, led to more out-migration. Eventually, as the city became more and more attractive to both the affluent and young urban professionals, the population exploded in Manhattan and the great city has never looked back.

Today, more than 8 million New Yorkers live in the five boroughs—more than one-third of whom were born outside the United States. 1.7 million of these live in Manhattan. Thanks to the city's diversity and vibrant intellectual life, it remains the cultural capital of the United States and the financial capital of the world. Each year, NYC is named the "safest large city in America" and continues to hold that title today.

Everything is at your fingertips in NYC, from Broadway shows, to Times Square and its lights, to the Statue of Liberty, to the great museums and cultural institutions, Central Park and the High Line and, of course, a diverse offering of foods like nowhere else.





About IABSE

The International Association for Bridge and Structural Engineering (IABSE) was founded in 1929. Today, IABSE has members in over 100 countries and 50 National Groups around the world. IABSE's aim as a scientific and technical society is to promote the advancement of structural engineering practice while taking into account technical, economic, environment, aesthetic and social aspects. IABSE deals with all structures and with all materials.

To fulfil its mission IABSE organizes conferences and publishes the quarterly journal Structural Engineering International (SEI), conference reports, as well as books reflecting the work of its technical groups. It creates technical groups as required by needs and technological progress, offers activities within National Groups of IABSE, supports Young Engineers with a program and presents annual awards for outstanding achievements in research and practice that advance the profession of structural engineering.



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