

IABSE News

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IABSE's 40th Symposium in Nantes 2018: A Report

IABSE's 40th Symposium on "Tomorrow's Megastructures" 19–21 September, 2018



F. Branco (President), with B. Godart (OC, Chair); during the Opening Ceremony in La Cite de Nantes Events Centre

The beautiful city of Nantes welcomed all participants at the La Cite de Nantes Events Centre, with almost 600 delegates from 40 countries, including practitioners, researchers, and policy-makers, from 19 to 21 September 2018. The Symposium was on the topic "Tomorrow's Megastructures" and was organized by the French Group of IABSE, in cooperation with the French Association of Civil Engineering (AFGC).

Prior and while the Annual Meetings of IABSE were ongoing, three Workshops took place, which were all very well attended:

1. Structural Failures—cases, causes, investigations, lessons learned, by J. Duntemann, F. Palmisano and R. Ratay and D. Breyse
2. Designing with UHPFRC based on most recent standard, by F. Toutlemonde, E. Bruehwiler, K. Habel, Z. Hajar, B-S. Kim, J. Resplendino, and J-M. Weill
3. Practice of Finite Elements Calculation, by C. Le Quéré and D. Guth

Opening Ceremony

On 19th September, Chair of the Organizing Committee Bruno Godart officially opened the Symposium with a short presentation on the European

year of Civil Engineers and an address by Ms. Christine Orain representing the President of the Loire-Atlantique Dept., Philippe Grosvalet. IABSE President, Fernando Branco gave a warm Welcome Address to all the participants and presented the IABSE Awards 2018 where all the awardees received their diplomas on stage (please refer to the article on IABSE Awards 2018).

Tobia Zordan, Chair of IABSE Foundation presented its recent joint project with the Bridge to Prosperity, providing sponsorship and construction of a footbridge in a remote community in Namawukulu-Uganda.

Andre Orcesi, SC Secretary presented the technical programme prepared by the Scientific Committee for the next 3 days of the Symposium. The Symposium continued in full swing with the first Keynote lecture by Ibrahim Mahlab, Former Prime Minister of Egypt and President of Arab Contractors Company moderated by Jacques Combault, former President of IABSE. The Scientific Committee was chaired by Christian Cremona.

Keynote Lectures

- Mega Projects towards Egyptian Construction Renaissance
Ibrahim Mahlab, Egypt
- The One-Kilometer Tall Jeddah Tower

Robert Sinn, US

- The New Coastal Road in La Reunion Island (France): From the Design Process to Construction
Jean-Marc Tanis, France
- The Chernobyl Shelter: A Mega-Structure for a Safe Confinement
Denis Etienne, France
- The Portier Cove Seaward Extension Project in Monaco
Regis Adeline, Monaco
- Long Span Bridges
Michel Virlogeux, France

Over the three days of the Symposium; 6 Keynotes, 64 parallel sessions were presented. Out of 503 abstracts received, 467 were accepted, and 301 full papers were finalized out of which 295 papers were presented at the Symposium. There were almost 600 attendees in the Symposium with a demographic distribution of the attendees: 66% from Europe, 25% from Asia, 4% from North America, and 5% from rest of the world.

The authors were given 15 min to present their papers which gave ample time to answer questions from the floor or even a debate. To encourage networking during the symposium, coffee breaks and standing lunches were served at the exhibition area. This provided plenty of opportunities between participants and exhibitors from different parts of the



IABSE Award ceremony, followed by a presentation of the IABSE Foundation Council by T.Zordan



Gala Dinner at the Pigossiere Castle



Riding the spider, the elephant walks in at Les Machines de l'Île, at French Group's Reception

world to network and engage in casual conversations.

Evening Receptions

On 19th September, the Welcome Reception was held at an exhibition and animation space named “**Les Machines de l'Île,**” which included a guided tour to the various gigantic machines in the form of mechanical animals and insects, which some of the participants even managed to climb and take a ride on. With the

best of Nantes local wine and delicacies, the evening ended with an amazing and memorable experience—as the 12 m high wooden mechanical elephant walked into the hall in a daze of blue lights, loudly roaring and spraying water at the participants, taking them all by surprise.

On 20th September, the Gala Dinner took place at the magnificent **Pigossiere Castle** located at the heart of a wooded area in Nantes bordered by a river only a few minutes away from the city

centre. The dinner began at the beautiful garden setting of the castle. With piano in the background, the participants enjoyed the ambience in the castle with delicious appetizers, and waited for the sun to set. The dinner perfectly showcased the French cuisine at its best and shall remain memorable for all the participants. On the second day of the Symposium F. Palmisano held a well attended session on, ‘The Genoa Bridge Collapse: Background and Apparent causes’.

The Closing Ceremony

The last keynote lecture was delivered by Michael Virlogeux on Long Span Bridges followed by the Symposium Statistics and Scientific Conclusions by Christian Cremona, Chair, Scientific Committee. He also presented the following Awards:

Outstanding Paper Awards to Young Engineers

- **Catherine Poirriez**, Singapore, for: Lightweight Megastructure: Design and Construction of a 100m span dome in Manila
- **Marco Furinghetti**, Italy, for: Optimized Design of Seismic Isolation Systems for Existing Bridges

Best Award for My Thesis in 180 s

- 1st Prize to **Konstantinos K. Kalfas**, Univ. of London, UK
- 2nd Prize to **Dominik Skokandic**, Univ. of Zagreb, Croatia
- 3rd Prize to **Helen Fairclough**, Univ. of Sheffield, UK

Award for the Best Model of Workshop 3

- Claude Le Quere, Didier Guth, Conveners of Workshop
Practice of finite elements calculation

The prize distribution ceremony was followed by a closing speech by the President of IABSE, Fernando Branco and an invitation to the next **IABSE Symposium in Guimaraes** from 27 to 29 March 2019 by José Matos and **IABSE Congress in New York** from 4 to 6 September 2019 by Jon McGormley. The Organizing Committee Chair of Nantes Symposium 2018, Bruno Godart officially closed the Symposium and wished everyone a safe flight back home.



Symposium Sessions at full swing; A.Orcesi (SC, Secretary) and F.Palmisano (Workshop on Genoa Bridge)



Left: C.Cremona, Chair, SC, during Closing Ceremony and Right: H. Fairclough, D.Skokandic, and C. Poirriez (Young Engineers with their Prizes)



Coffee Breaks with an international flair: Left: J.Wium, S.Africa (IABSE Administrative Committee), and P.Menetrey, Switzerland (Chair, National Group); Right: Participants from Asia enjoying the Symposium

IABSE Annual Meetings in Nantes 2018



Technical Committee Meeting, with Chairs of various groups



Musée d'Arts de Nantes, President's Reception on 17th September, enjoying the French hors d'Oeuvres.

The Annual Meetings of IABSE were held prior to the IABSE Symposium in Nantes, from 17 to 18 September

2018, at the Conference Centre in Nantes—located on the Loire River, 50 km from the Atlantic coast. Over



Executive Committee Meeting, 18th September 2018

150 committee members came to participate with accompanying persons from around the world.

On Monday morning, the Administrative Committee, several Commissions, Bulletin and SEI Editorial Boards met followed by SEI Correspondents, several Task Groups, Chairs National Groups, Foundation Council and the Technical Committee meetings in the afternoon.

In the Technical Committee Meeting, Commissions, Task Groups, Editorial Boards chairs met to discuss their new structure and future plans for their respective groups. Daia Zwicky, Chair of Technical Committee, presented the more than 40 newly formed Task Groups, which were discussed and finalized in Nantes.

In the evening, Fernando Branco welcomed all the participants at the **President's Reception** that took place at the historic building of **Musée d'Arts de Nantes**. There was a short guided tour to some of the iconic paintings of the Museum followed by a cocktail dinner.

On Tuesday morning, the Executive Committee, OStrAC, E-Learning Board, several Task Groups and the IABSE Ambassadors met in the morning. Former and current Presidents and Vice-Presidents of IABSE were invited at the Lunch of the Presidents for a get-together.

The Permanent Committee

On Tuesday afternoon, the Permanent Committee met and approved the IABSE Annual Accounts 2017 and the Budget for 2019 as presented by IABSE's Executive Director, Chep Uytiepo. The Statement of Accounts 2017 had an excess revenue of CHF 131,575 for the year 2017 and as of 31 December 2017, the funds of the Association amounted to CHF 307,096. Internal Auditor, Marion Rauch stated that the situation of the Association was improving and congratulated all for having positive results in the second consecutive year.

Tobia Zordan, Chair of the Foundation Council, gave a short presentation on their recent footbridge project with



Permanent Committee Meeting: F.Branco (President) and C.Uytiepo (Executive Director)



Y.Ge (third from left) being congratulated after being elected as the next President of IABSE

Bridge and Prosperity in Uganda. He took the opportunity to mention that any amount of donation could be beneficial for the ongoing projects and urged all present at the ceremony to initiate financial donations to support the Foundation Council’s humanitarian initiatives worldwide. (Note: Read the Editorial in this issue, written by T. Zordan).

Organizers for Future IABSE events presented their plans for forthcoming symposiums: J. Matos - for Guimaraes Symposium 2019, J. Tortorella - New York Congress 2019, J. Bien - Wroclaw Symposium 2020 and H. de Backer - Ghent Congress 2021.

At the latter part of the meeting, President Election 2019 took place and the PermC elected Yaojun Ge, China as the next IABSE President for the term 2019–2022, succeeding Fernando Branco from 1 November 2019.

The **Chairs of the National Groups** meeting was well attended by the Chairs and representatives who presented their activities and plans for 2019. It was also an open discussion regarding challenges faced in their National Groups and what could be improved.

The National Groups Meeting was co-chaired by Jan Wium and Ian Firth. I. Firth urged all members to plan

actively for small as well as big events, and increase visibility of IABSE in their respective countries. J. Wium mentioned the ongoing activities, including workshops, seminars, and colloquiums planned for 2019 by several countries. J. Wium also mentioned the role of Regional Heads (assigned to Vice Presidents)—who shall be responsible for facilitating activities for several countries within a particular geographical zone.

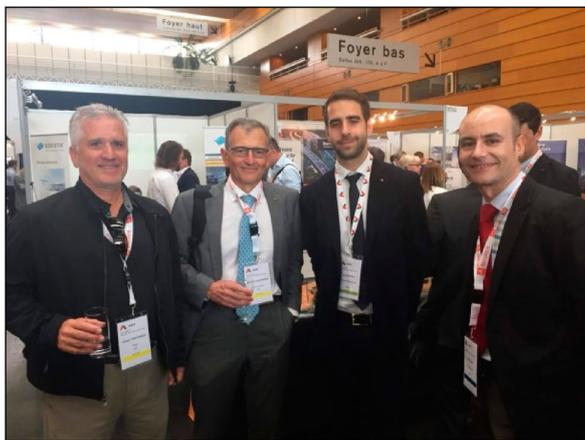
In the evening, the Annual Meetings were rounded off by a cordial invitation to the **Reception of the French Group of IABSE and AFGC** at a unique venue “Le Nantilus,” located



The National Group Chairs and Representatives Meeting



Welcome reception by the French Group of IABSE and AFGC at the Le Nautilus



IABSE Fellows meeting the Young Engineers over lunch

specialties the participants enjoyed a beautiful sunset across the river. The Organizing Committee Chair, Bruno Godart on behalf of the Organizers—French Group of IABSE and AFGC, welcomed all attendees and gave a brief history of Nantes.

IABSE Fellows and Young Engineers

IABSE Fellows met the Young Engineers over lunch to share experiences and knowledge, to inspire each other and to interact. Where else can the young engineers have such a rare opportunity to meet, discuss and even form a bond with the leading structural engineers from around the globe?

IABSE Fellows contributions are used to provide free membership for the following year for Young Engineers, and the Fellows also sponsor the YEP Outstanding Contribution Award's prize money. The networking between those who are in the beginning of their career and those who are well advanced and at a stage where they can guide the young, is fostered in IABSE through the Young Engineers Program.

IABSE Annual Meetings, which were spread across two days ended successfully on the 18th of September, after which participants got prepared for the Symposium.



IABSE Bulletin Board meeting with current and new members

on the river Loire. This restaurant is an anchored barge, converted into a floating restaurant. With live music, fresh oysters and many exquisite local

IABSE Awards 2018

Fernando Branco, President of the International Association for Bridge and Structural Engineering (IABSE) presented the IABSE Awards 2018 on 19 September 2018, on the occasion of IABSE's 40th Symposium which took place in Nantes, France. The following Awards were presented.

This year, **Honorary Membership** was conferred to two IABSE members for their exceptionally great services rendered to the Association.

Prof. Lennart Elfgren

Honorary Membership was presented to Prof. Lennart Elfgren *“in high appreciation of his outstanding and dedicated services to the Association.”*

Lennart Elfgren, Sweden, Emeritus Professor of the Structural Engineering and Building materials, Luleå University of Technology. Lennart Elfgren has been head of the Department of Structural Engineering at Luleå University of Technology (LTU) since 1984–2009, Emeritus since 2009. He contributed to IABSE for the first time in 1970, with a paper on Prestressed Concrete Columns together with his supervisors Krister Cederwall and Anders Loberg in 1970. He has since then actively contributed to the association's activities especially with his recent Chairmanship of the Scientific Committee at the IABSE Congress in Stockholm in 2016.



L. Elfgren, receiving the prize from F. Branco

Read more about him on our website: http://iabse.org/IABSE/IABSE_Association/Awards/

Bidhan Chandra Roy

Honorary Membership was presented to Dr Bidhan Chandra Roy *“in high appreciation of his outstanding and dedicated services to the Association.”*

Dr. Bidhan Chandra Roy, former Board of Director—CES and former visiting Professor of IIT Mumbai & JU, Kolkata, M.D. RUPL. has been an IABSE member since 1990 and a Fellow since 2003. He was a past member of Technical Committee and Working Commission V. He has also been a member, a secretary and a chair of several Scientific Committees for several IABSE conferences in the past. His recent chairmanship of the Scientific Committee and contribution to the organization of the IABSE Symposium in Kolkata in 2013 was an instrument to its success. He completed in 2015 his two terms of a 4-year term as one of IABSE's Vice-President.

Read more about him on our website: http://iabse.org/IABSE/IABSE_Association/Awards/

International Award of Merit: Tristram Carfrae

IABSE presented the International Award of Merit in Structural

Engineering, to Tristram Carfrae, UK, *“in recognition of his outstanding contributions for more than 50 years to structural engineering including several span world records and outstanding structures, and his sensitivity to bring structural engineering design close to art and poetry”.*

Tristram Carfrae is a world renowned structural engineer and designer. He is one of the very few engineers to be appointed as a Royal Designer for Industry in 2006 (by the Royal Society of Arts); to receive the MacRobert Award in 2009 for best engineering project in the UK (from Royal Academy of Engineering for all engineering projects including IT, biotech and manufacturing); and to receive the Gold Medal from the Institution of Structural Engineers.

Perhaps his most famous building is the Water Cube—the Beijing National Swimming Centre—designed for the 2008 Olympics. Inflated ETFE pillows were mated directly to the primary structure which followed the geometry of Weaire Phelan Foam (the most efficient division of space) to form a “box of bubbles” that functions as an insulated greenhouse. As well as being a very efficient structure with incredible redundancy and seismic resistance, the whole building captures and uses more solar energy than if it had been entirely clad with photovoltaic panels. The use of ETFE pillows gave the building its unique identity; minimized weight; removed the need for any secondary structure and gave the greenhouse a beautiful acoustic that would not have been possible using more expensive glass. This use of one facet of the building to provide multiple benefits is a recognized hallmark of Tristram's designs. In 2013 Tristram was honoured to be invited to help complete Sagrada Familia, Gaudi's famous church in Barcelona.

Read more about him on our website: http://iabse.org/IABSE/IABSE_Association/Awards/

IABSE Prize: Teng Wu

The IABSE Prize honours an IABSE Member early in his or her career for





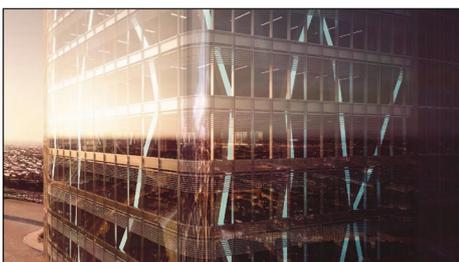
B.C. Roy, receiving the prize from F. Branco



T. Carfrae, receiving the prize from F. Branco

outstanding achievements in structural engineering. IABSE has awarded the IABSE Prize to Dr. Teng Wu “in recognition of his outstanding contributions to structural engineering in the areas of structural steel research, code development and teaching.”

Teng Wu is currently an Assistant Professor at the University at Buffalo, the State University of New York, USA. Dr. Wu’s research addresses the effects of service and extreme winds on the built environment, with an emphasis on bridges. His studies



111 Eagle Street, Brisbane, Australia; National Aquatics Centre, Beijing, China

include buffeting and flutter analyses, vortex-induced vibration, rain-wind induced vibration, nonlinear aerodynamics, fluid-structure interaction, Volterra theory, hurricane hazard modelling, reduced-order modelling, and computational fluid dynamics.

Dr. Wu has made significant contributions to the development of analytical and computational methods focusing on nonlinear and unsteady features of bridge aerodynamics. His contributions have been recognized through the 2013 American Society of Civil Engineers (ASCE) O.H. Ammann Research Fellowship, 2014 American Association for Wind Engineering (AAWE) Best Paper Award, 2016 ASCE Alfred Noble Prize, 2017 AAWE Robert Scanlan Award and 2017 International Association for Wind Engineering (IAWE) Junior Award. Dr. Wu currently serves as the Associate Editor of ASCE Journal of Bridge Engineering and Frontiers in Built Environment-Wind Engineering and Science, and the Editorial Board Member for several international journals. He also serves on a number of ASCE committees including Wind Engineering Division’s Structural Wind Engineering Committee. He is a member of Super-Long-Span Bridge Aerodynamics Working Group of IABSE.

Read more about him on our website: http://iabse.org/IABSE/IABSE_Association/Awards/

Outstanding Paper Award

IABSE presents the Outstanding Paper Award to the author(s) of a paper published in the preceding year’s issues of the IABSE’s quarterly Journal *Structural Engineering International (SEI)*, encouraging and rewarding contributions of the highest quality. IABSE presents the award in the categories “Scientific Paper” and “Technical Report”. The Outstanding paper award committee for selecting the best papers for both categories was chaired by Prof. Andreas Lamproulos.

The Outstanding Paper Award in the category **Scientific Paper** was presented to: “*Considerations for Robustness in the Design of Steel and Composite Frame Structures*”, Panagiotis Stylianidis, David Nethercot, UK, SEI 2/2017, (May) page 263–280.



T.Wu, Y.Ge receiving the prize on behalf of T.Wu



L to R: D. Nethercot, P. Stylianidis, A.Lampropoulos (Chair, OPAC), F. Branco



Winners: P. Stylianidis, D. Nethercot

The Outstanding Paper Award in the category **Technical Report** was presented to: “*The New Old Bridge: Renovation of the Macdonald Suspension*

Bridge”, by Dusan Radojevic, Keith F. Kirkwood, Canada SEI 1/2017 (Feb), pp. 32–37.

Read the full paper from our website: http://iabse.org/IABSE/IABSE_Association/Awards/

Outstanding Structure Award

The IABSE Outstanding Structure Award (OStrA) was established in 1998. It is one of the highest distinctions awarded by IABSE and recognizes, in different regions of the world, some of the most remarkable,

innovative, creative, or otherwise stimulating structures. Sustainability and respect of the environment is also an important factor. The Awards are restricted to a maximum of one Award per year. The Outstanding Structure Award’s Committee was chaired by Naeem Hussain.

The Winner: Yavuz Sultan Selim Bridge, Turkey

The Yavuz Sultan Selim Bridge (third Bosphorus bridge) is considered as the future of transportation and commerce for Turkey, linking Europe and Asia. By its major importance and its symbolic situation between two continents, the bridge was naturally meant to become an iconic structure and a new landmark of Istanbul region and Turkey. Consequently, for such a symbol, the authorities did express major concerns on subjective and aesthetical considerations in parallel to the definition of the functional requirements for the structure.

The main points were the following: (1) Considering the location of the bridge very close to the black sea, the necessary safety width for the navigation channel and the local bathymetric configuration, the minimum required span has been fixed to 1’275 m by the authorities. (2) The bridge had to carry two times four lanes of roadway in addition to two railway tracks and two sidewalks mainly used for accessibility and maintenance. (3) The bridge shall be a suspension bridge (4) Aesthetic has been defined as an essential factor in the assessment of the proposals and the bridge should be in line with the architecture of the two existing bridges crossing the Bosphorus downtown. (5) In addition, a very stringent and somehow out of usual scale requirement: the bridge had to be completed in an extremely short period of 36 month. The bridge offers an elegant and top class crossing to the straight, perfectly skilled to underline the symbol of the link between two continents and to become one of the landmarks of the extraordinary city of Istanbul. Combining all these requirements in a very elegant and efficient structure was an incredible challenge during which the engineers had to stress all their creative and innovative minds to come out with the best and the most



Winners: D. Radojevic, K.F. Kirkwood, S.Alexander (representing the authors), A.Lampropoulos (Chair, OPAC), F.Branco

pleasant and elegant design up at the level required by this new symbol.

The Finalists

In addition to the Winner, the Outstanding Structure Award Committee also selected three Finalists:

Viaduct Over River Almonte, Spain

The High Speed Rail between Madrid and Extremadura crosses over River Almonte through a 996 m long viaduct with a great 384 m concrete arch, which make it the largest HSR arch bridge built to date. The bridge forms part of the section conceived to connect Madrid and Lisbon through High Speed, planned for a mixed traffic of freights and passengers with a maximum speed of 350 km/h. Both design and definition of the erection procedure (which conditions the design itself), have sought to combine the technical feasibility and the optimization of resources and costs of such a singular structure. The bridge construction began in July 2011 and its completion was reached at the end of 2016.

Queensferry Crossing, UK

Scotland's largest infrastructure project in a generation, the £790m Queensferry Crossing, spanning across the Forth Estuary, is now substantially complete and progressing towards opening to traffic at the end of August 2017. Its form has emerged in a most dramatic way over the last five years. The new Crossing and its approach roads were constructed under a Design and Build Contract for the Employer, Transport Scotland. The Contractor, Forth Crossing Bridge Constructors (FCBC) is a Joint Venture of Hochtief Construction AG, Dragados, American Bridge International and Morrison Construction. Ramboll is the lead partner in the Design Joint Venture carrying out the detailed design of the project, working with Sweco and Leonhardt, Andra and Partner. The crossing comprises a cable-stayed bridge, with an overall length of 2.7 km. At its centre is a three masted cable stayed structure with a unique arrangement of overlapping stay cables. It is be the third bridge across the Forth at Queensferry, alongside the Forth Road Bridge, a 1006 m span suspension bridge, completed in 1964, and the Forth Bridge,



Yavuz Sultan Selim Bridge, Turkey



L to R: N.Hussain (Chair OStA), Winners: V.de Ville de Goyet, T.Delemont, M.Virlogeux, S.Seyhan; with F.Branco



Viaduct over River Almonte, Spain



L to R: N.Hussain (Jury), Winners: P. Cavero de Pedro, D. Arribas Mazarrazin, P. Jimenez Guijarro, G. Capellan Miguel, with F.Branco

now designated as a World Heritage Site, which was completed in 1890. The overall length of the Main Crossing is 2,638 m with 2,090 m making up the Cable Stayed Bridge.

The Circle Bridge, Denmark

The Circle Bridge (Cirkelbroen) is a 35m long bridge that spans Copenhagen's Christianshavns Canal, designed by the Danish-Icelandic artist Olafur Eliasson. The bridge is part of the pedestrian and cycle route along the quays of Copenhagen, a route that is used by thousands of people in Copenhagen every day. The bridge consists of five steel platforms that vary in diameter from 10 to 14 m and are arranged to create a staggered, zigzag path across the water. The platforms are topped by tall masts from which thin steel cables extend to the platform's circular railings, outlining barely perceptible conical screens around the masts—the highest of which rises 25m above the bridge. The indirect route that the layout forces people to take inspires reflection and pause. Cirkelbroen, which translates to “circle bridge”, is lit at night. One section of the bridge functions like a swing bridge, rotating on submerged pontoons to allow large boats to pass into and out of the canal. Cirkelbroen has been selected as the official Danish logo of the UEFA soccer championship in 2020 hosted by 13 European cities to celebrate the 60 years anniversary of UEFA. Of the many unique design features of the bridge the fact that it floats when it opens is one of the more noteworthy.

Read more about the structures and prize winners on our website: http://iabse.org/IABSE/IABSE_Association/Awards/

Photocredits: RICHT-Noel AscoTP and others.



Queensferry Crossing, UK



The Circle Bridge, Denmark

Calendar of Events

***2018 November 24–28**
 Cairo, Egypt
 GeoMEast 2018 International
 Congress and Exhibition “Sustainable
 Infrastructures: Structural Integrity”

2019 March 27–29
 Guimarães, Portugal
IABSE Symposium
 “Towards a Resilient Built Environ-
 ment Risk and Asset Management”

***2019 July 24–26**
 Lisbon, Portugal
 ICSA 2019 “The 4th International
 Conference on Structures
 and Architecture”

2019 September 4–6
 New York City, USA
IABSE Congress
 “The Evolving Metropolis”
 Annual Meetings precede the Congress

***2019 October 2–4**
 Porto, Portugal
 ARCH 2019 – “9th International Con-
 ference on Arch Bridges”
 *co-sponsored or supported by IABSE

Student Membership NEW

For only 20 CHF per year

Join the global network of structural engineers to widen your horizon at the early stage of your career!

The **IABSE Student Membership (SIM)** is an ONLINE only membership with the same access as an Individual Member (IM) with the exception of receiving printed materials. It is open to all current students 27 years of age or younger.

Membership Benefits:

- Free ONLINE access to Structural Engineering International (SEI) all issues, starting from 1991
- Reduced IABSE Conferences fees
- Free e-books occasionally published by IABSE
- Reduced prices to all IABSE Publications
- Opportunity to join Technical Groups of IABSE and activities of your National Group
- Access to the ‘Members Area’ including the Members’ Directory
- Monthly Newsletter and more...

IABSE Conference Guimarães 2019—Early Bird till 15 December 2018



IABSE Conference Guimaraes 2019

Towards a Resilient Built Environment—Risk and Asset Management

IABSE Conference Guimarães 2019 “Towards a Resilient Built Environment—Risk and Asset Management”, will be held on **27–29 March 2019** and the **Early Bird for Registration is open until 15 December 2018**. Organized by the Portuguese Group of IABSE (Associação Portuguesa de Engenharia de Estruturas—APEE), in cooperation with the Institute for Sustainability and Innovation in Structural Engineering (ISISE) and the University of Minho, Paulo B. Lourenço, is the Honorary Chair, and José Campos e Matos, the Executive Chair of the Organizing Committee. Luis Oliveira-Santos is the Chair, and Elsa Caetano is the Vice Chair of the Scientific Committee. They are leading a team of highly dedicated members who are working steadfastly to organize this Symposium in March and give you a wonderful experience in terms of professional knowledge enhancement as well as an overall memorable experience in Guimarães. So, don't wait long, register for the Symposium at the earliest and spread the word to your colleagues too!

The venue will be the Vila Flor Cultural Centre (CCVF), a cultural facility

of Guimarães, which is considered the cradle of Portugal and is a UNESCO World heritage site, situated next to the city of Porto and the Douro valley. Guimarães is a cosy and lively UNESCO city, considered as the cradle of Portugal. Attendees will have the opportunity to increase their network through a set of social events, such as the welcome reception and the gala dinner.

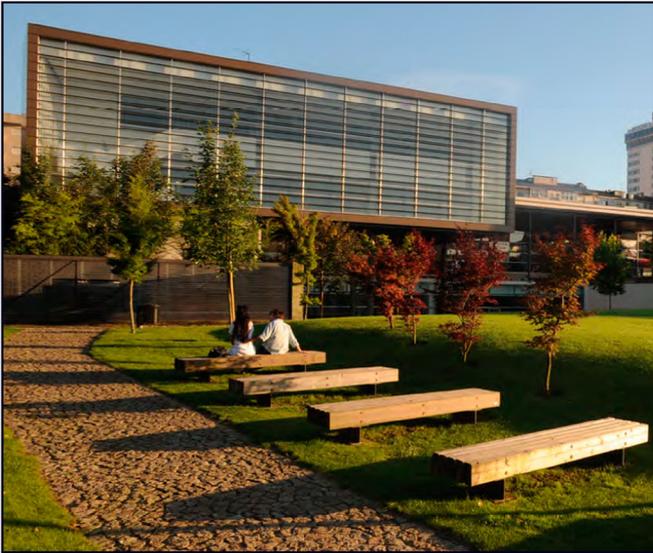
Preceding this Symposium is the final conference of COST Action TU 1406 on “Quality specifications for roadway bridges, standardization at a European level” (www.tu1406.eu), to be held on 25–26 March 2019.

The Symposium aims at providing an international forum for the debate on, among others, issues such as the sustainability of the built environment, risk assessment and asset management in infrastructures. In addition to Future Trends, the conference shall be focusing on cutting-edge issues, such as Novel Management Tools for the Built Environment, Lifecycle Quality Control of Infrastructures, Advanced Frameworks for a Sustainable Built Environment and Risk Analysis Procedures. The Symposium is thus targeted at attendees from different stakeholders, respectively, from academia to industry.

Young attendees will also have the opportunity to enjoy the Symposium through a tailor-made young engineers programme, including a happy hour. Finally, “**IABSE Tank**” is a new initiative where young engineers will have the opportunity to show their ideas to investors in a purely entrepreneurial environment. In addition to Future Trends, the Symposium shall be



José Matos, Chair of Organizing Committee Guimarães



Vila Flor Cultural Centre (CCVF), the venue

focusing on cutting-edge issues, such as Novel Management Tools for the Built Environment, Lifecycle Quality Control of Infrastructures, Advanced Frameworks for a Sustainable Built Environment and Risk Analysis Procedures. This Event is expected to attract young to renowned engineers, from around the world, who will gather to share their knowledge and expertise in the field of structural engineering.

The Scientific Programme will include Plenary and Papers covering different themes and topics of the conference will be selected from abstracts submitted to the Scientific Committee. There will be two awards for Young Engineers, covering the best paper and the best presentation.

Themes and Topics

1. *Novel Management Tools for the Built Environment*
 - Infrastructure asset management
 - Bridge management systems
 - Management and conservation strategies of historical structures
 - Maintenance, repair and retrofitting strategies
2. *Lifecycle Quality Control of New and Existing Infrastructures*
 - Lifecycle performance-based design
 - Lifecycle assessment of civil infrastructures
 - Load carrying capacity and remaining lifetime

- Performance indicators
 - Structural health monitoring
 - Evaluation and assessment techniques
 - Innovative inspection techniques
3. *Advanced Frameworks for a Sustainable Built Environment*
 - Performance-based framework for structural resilience
 - Adaptation to climate change and societal challenges
 - Expanding structures service life
 - Future structural and functional demands
 - New design methods for sustainable infrastructures
 - Aesthetics in structural design
 - Wind and extreme load design
 - Codes of practice for existing and new structures
 - Strengthening and repurposing of structures
 - Geotechnical design challenges
 - Deterioration modelling
 - Deconstruction and recycling
 - Case studies
 4. *Risk Analysis Procedures, from Theory to Practice*
 - Environmental risk assessment
 - Insurance, reinsurance and management of risk
 - Learning from previous errors: Forensic engineering
 - Model updating, safety evaluation and reliability forecast
 - Reducing risks of earthquakes and other natural hazards
 - Reducing risks of fire and other man-made hazards

- Resilience of civil engineering structures
 - Resilience of critical infrastructures
 - Risk analysis and risk-informed decision making
 - Risk perception and communication
5. *Future Trends in Structural Engineering*
 - Advanced experimental testing and techniques
 - Advanced numerical models and simulations
 - Building Information Modelling tools
 - Construction 4.0
 - Information technology in structural engineering
 - Innovative construction methods
 - Innovative structural devices
 - New materials and products
 - Offshore and marine structures
 - Passive and active control systems

Keynote Speakers

How will “Digital Technology” change asset management in the railways?

Andy Doherty, Chief Technology Officer, for Network Rail, UK

Risk and Resilience of Civil Infrastructure Systems under Extreme Events

Mitsuyoshi Akiyama, Professor of Civil Engineering at Waseda University, Japan; co-author: Dan M. Frangopol Professor of Civil Engineering at Lehigh University, USA



Gala Dinner venue

Digital Construction: Building the Present-Creating the Future, Changing the Way we Create our Built Environment

Menno de Jonge, *Director Digital Construction of Royal BAM Group, The Netherlands*

We need more Accurate and more useful Environmental Assessment of Infrastructure

Arpad Horvath, *Professor of Civil and Environmental Engineering at the University of California, USA*

Bridges and Structures: Design Practice and New

António Reis, *Professor of Bridges and Structural Engineering at University of Lisbon, Technical Director of GRID, International Consulting Engineers S.A., Portugal*

Proceedings

All papers accepted by the Scientific Committee for oral presentation will be published in the Symposium Report. The Report will be available in electronic format at the beginning of the Symposium. The publication of each paper is conditional upon the presenting author registering to attend the symposium.

IABSE Young Engineers Award

Any Young Engineer (Born after 1 January 1985), who personally presents his/her paper as the main author at the Symposium, will be considered for recognition. An independent jury will select the two best contributions, and each will receive a prize of 1,000 EURO. The prizes are

offered by the IABSE Fellows and the Organizing Committee and will be announced at the Closing Session of the Symposium.

IABSE Happy Hour

An icebreaker challenging game bringing together two generations, Young and Senior Engineers, is proposed to take place which will be comprised of six participants randomly selected at the registration on stage. The event will be held at the Cloisters of the Alberto Sampaio Museum and shall include a structural engineering quiz with an interactive platform, music and cocktail. Awards will be granted to the best performance. The event is limited to 150 participants.

WIBE Prize Award

The BERD-FEUP WIBE Prize is a 10 page paper in the field of Bridge Engineering. The winner of the Prize was selected by a qualified international Jury. The First WIBE Prize Award Ceremony will take place in the “Cradle of Portuguese nationality”—Duke of Braganza’s Palace—a UNESCO World Heritage Site where Portugal’s First King, D.Afonso Henriques founded the country.

The WIBE Award Ceremony will take place on 26th March 2019, during the Welcome Reception of the IABSE Symposium Guimarães. In this Ceremony the Winner and the two Merit Awards of the First World Innovation Prize in Bridge Engineering will be awarded. More infos: <https://paginas.fe.up.pt/~wibe/>

IABSE TANK

During the Symposium, a competition aimed at promoting the development of new ideas (e.g. innovative products, materials, techniques, software, services, etc.) applied to the structural engineering will take place. Symposium participants can take part in this competition according to the rules, listed on the conference website.

Venue

Vila Flor Cultural Centre incorporates the eighteenth century Vila Flor Palace and brings together the rich history of a manor house, its magnificent gardens and lovely architecture, evoking the ideas of ancestral memories with touches of modernity. The theatre wing is a totally new design building added on to hold all types of cultural events and one where all resources are optimized in order to provide the highest quality facilities and spaces



Historical centre at night

which guarantee that a wide range of events can be successfully hosted.

Welcome Reception

The Welcome Reception will take place on the 26th of March at the Ducal Palace, an impressive Heritage site on a medieval estate that also integrates the Guimarães Castle, the Church of São Miguel and the statue of Afonso Henriques—the founder King.

Gala Dinner

The Gala Dinner will be held on March 28th, at MITPenha, in Guimarães. This modern construction, located in the Penha hill overlooks Guimarães.

Technical Visits

Technical Visit A: The Municipal Stadium of Draga

Technical Visit B: The Porto Cruise Terminal

Exhibition and Sponsorship

The commercial exhibition is a great opportunity to present your company, products and services and to interact with key decision makers and potential new clients. The exhibition area, located in upper and lower foyers of the Grand Auditorium of Vila Flor Cultural Centre, will be combined with coffee break stations, where there will be a higher circulation of delegates. Sponsors can expect branding, various forms of acknowledgement and special benefits depending on the type and level of sponsorship, from Tiered Sponsorship

to Item Sponsorship Opportunities. More information: www.iabse.org/guimaraes2019, contact: guimaraes@iabse2019.org

About Guimarães

The province of Minho, in the North-west of Portugal, is full of scenic and historical sites, being particularly famous for the production of wine. To the North of the region, you will find the National Park of Peneda-Gerês with its rock-mountains, cascades, lakes and abundant wildlife. To the East, you have the famous Douro river valley, where the Port wine grapes are grown. To the South, you will find the city of Porto, with its international airport, featuring an impressive architecture in the banks of the Douro River, the famous bridges and the Port wine cellars.

The city is famous for its architectural heritage, including worthwhile visits to: the historical centre, where its unique atmosphere of narrow streets and squares provides a meaning to the cultural heritage, which is the everyday reality for the local population; the palace of the House of Bragança, with its rare roofs and 39 large brick chimneys, that once was one of the most sumptuous residences in the Iberian Peninsula; the medieval castle, where the Portuguese history began; the Monastery of Santa Maria da Costa and the Penha Sanctuary, with a beautiful landscape.

The Guimarães municipality, with an area of 241,05 Km2, is located in Braga district in Northern Portugal. Elevated to the category of city in

1853, it is divided in 20 parishes with a total population of 158.000 inhabitants. The population of Guimarães is one of the youngest in Europe. One of Portugal’s most important historical cities, Guimarães is considered the “Cradle of Portuguese nationality”, where the country was founded in the ninth century by King D. Afonso I (1109–1185), Portugal’s first ruler. The value of the historic heritage of Guimarães has been potentiated over the years.

The conference facilities in Guimarães are excellent and private accommodation for the participants can be found in the city, at very reasonable prices. Participants can easily walk from the conference venue to the city centre and hotels.

The nearest airport to Guimarães is the Francisco Sá Carneiro Airport in Porto, which is about 50 km from Guimarães—around 30 min by car or 50 min by bus. From the airport to the city, there is a bus shuttle, as well as taxi and public transports, such as bus, metro and train.

Worthwhile Visits

- Historical Centre (UNESCO World Heritage Centre)
- Ducal Palace of the Bragança, with its rare roofs and 39 large brick chimneys, that once was one of the most sumptuous residences in the Iberian Peninsula
- Medieval castle, where the Portuguese history began
- Monastery of Santa Maria da Costa
- Penha Sanctuary.

Quick Facts	
Early Bird fee until:	15 December 2018
Symposium Dates:	27–29 March 2019
Venue:	Vila Flor Cultural Centre, Guimarães
Demographics:	Practicing Engineers and Architects, Researchers, Consultants, Design Software Engineers, Contractors, Designers, Students, Educators, Owners, Suppliers, Governmental Agencies, Regulators
Participants:	Approx. 500
Registration:	www.iabse.org/guimaraes2019
Contact:	Ms. Joana Oliveira, +351-253 510 748, guimaraes@iabse2019.org