



# IABSE-IASS

S Y M P O S I U M

The International Association for Bridge and Structural Engineering (IABSE)  
and the International Association for Shell and Spatial Structures (IASS)

## Taller, Longer, Lighter

This is the 35th IABSE and the 52nd IASS Annual Symposium, and incorporates the 6th International Conference on Space Structures traditionally held at Surrey University

Queen Elizabeth II Conference Centre, London  
20-23 SEPTEMBER 2011

### Final Invitation

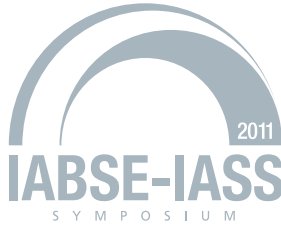
HOSTED BY



SUPPORTED BY



The Royal Academy  
of Engineering



IABSE-IASS 2011 would like to thank our sponsors and partners for their support

**Gold Sponsor**



**Silver Sponsors**



**Bronze Sponsors**



**Supporters**



\*Cover photograph by Nick Wood • [www.nickwoodphoto.com](http://www.nickwoodphoto.com)

# Contents

Message from the Presidents of IABSE & IASS

Message from the Organisers

Committees

Sponsors

Technical Programme

Keynote Speakers

Symposium Schedule

Young Persons' Programme

Commercial Exhibition

Sponsorship Opportunities

Technical Tours

Social Programme

Accompanying Persons

Symposium Venue

Hotels

Travel Information

Pre and Post-Symposium Tours

Registration Fees

Registration

IABSE and IASS Annual Meetings

About IABSE and IASS

Contacts

# MESSAGE FROM THE PRESIDENTS OF IABSE AND IASS

London will be hosting the Olympic Games in 2012 and it was therefore appropriate for both IABSE and IASS to hold their annual Symposia in the United Kingdom in the year before this event - a practice that has been established by IASS over several recent Olympic Games - so that the exciting new structures designed and built for the Olympics could form part of the backdrop and theme for the Symposium.

The two Associations represent the worldwide community of civil and structural engineers, architects, researchers, clients, constructors and others involved in developing or studying the built environment. When it was realised that we both intended to hold our annual Symposia in London at about the same time in 2011, it became logical and exciting to come together and hold a joint event. The Symposium will also incorporate the sixth International Conference on Space Structures normally held at Surrey University.

London is a city that is unsurpassed for its wealth of historical buildings, a major seat of culture, a symbol of democratic stability and a place where there have been major construction developments over the past decade, from the development of a city within a city at Canary Wharf, iconic structures such as the 'Gherkin' and the Shard (which is expected to be structurally complete at the time of the Symposium) to the creation of new overground and underground rail networks across the city.

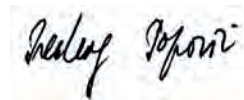
Supported by the Royal Academy of Engineering, the Institution of Civil Engineers and the Institution of Structural Engineers, this joint IABSE-IASS Symposium organised by the British Group of IABSE and the United Kingdom Members of IASS, is an opportunity for practitioners and researchers to be updated on worldwide achievements and trends in design, analysis, construction, maintenance and all aspects of structural engineering.

Under the joint leadership of Professor David Nethercot (IABSE) and Professor Sergio Pellegrino (IASS) the Scientific Committee has reviewed over 900 abstracts submitted by authors from 55 countries, and selected those to be presented to the Symposium under the main theme of Taller, Longer, Lighter, with particular emphasis on the need to meet growing demand with limited resources.

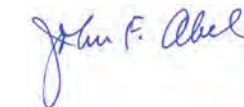
Having in mind the fundamental role of education, IABSE, IASS and the Organising Committee have established an attractive programme for young participants for this Symposium to encourage young engineers, architects and others to attend and actively participate.

Technical visits to major infrastructure construction sites will be arranged, and an attractive social programme, as well as fascinating sightseeing tours, will be provided for participants and accompanying persons.

As Presidents of IABSE and IASS, we look forward to meeting you in London in September, and to marking a milestone with you for what will be a memorable and significant Symposium.



**Predrag L Popovic**  
President of IABSE



**John F Abel**  
President of IASS

# MESSAGE FROM THE ORGANISERS

We are delighted that both our respective Associations are holding our annual Symposium in London this year. We are even more pleased that we have been able to arrange the event to be a joint Symposium between IABSE and IASS; the last joint Conference was held in Birmingham in 1994.

On this occasion with the Olympic Games being held in London in 2012 we have the advantage of having an exciting development of stadia and structures, together with a complex of associated infrastructure on the doorstep of the Symposium. Visits to these structures will be incorporated in the programme.

The Symposium will be held in the Queen Elizabeth II Conference Centre, the premier Conference venue in Westminster and adjacent to the Houses of Parliament, the River Thames and major tourist attractions in Central London. Rooms in hotels adjacent to the Conference Centre have been reserved for delegates' convenience, together with lower cost options within a short distance of the Conference Centre.

London has been called a 'world in one city', with the influence of many cultures and peoples being in evidence here. People from all nations continue to flow in and contribute their energy and cultures to the capital's already rich tapestry, but London nevertheless feels quintessentially British. Whether it is the red double-decker buses or those grand symbols of Britain - the mother of all parliaments at Westminster, the silhouette of Tower bridge above the Thames, Buckingham Palace and all the trappings of Royalty, or the already world-famous London Eye, barely a decade old, London is recognisable the world over. London and the world will witness another Royal Wedding in 2011, this time between Prince William and Kate Middleton, and no doubt the city will still be celebrating 5 months later in September!

The main theme of the Symposium is "Taller, Longer, Lighter", with an added emphasis on meeting growing demand with limited resources. To this end more than 600 papers have been accepted for presentation, there will be an exhibition of product and material suppliers, and technical tours will be arranged to relevant places of interest.

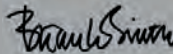
Clearly with such a major event embracing the two organisations, and with the incorporation of the 6th International Conference on Space Structures, there will inevitably be some differences from the programmes normally followed by the individual Associations in their Annual Symposia. However the combined expertise, experience and enthusiasm of members of both Associations will certainly ensure that this Symposium will truly be an important scientific, engineering and architectural event of the highest level.

We look forward to welcoming you to London. We shall do everything possible to make this event for delegates and accompanying persons a truly memorable occasion. We hope your stay will be unforgettable and you will be encouraged to return to our city time and time again.



**Ian Firth**

Co-Chair Organising Committee IABSE



**Brian Smith**

Co-Chair Organising Committee IASS

# SCIENTIFIC COMMITTEE

- **David Nethercot**, (Co-chair)  
Imperial College London,  
UK (IABSE)
- **Sergio Pellegrino**, (Co-chair)  
California Institute of Technology,  
USA (IASS)
- **Ana M Ruiz-Teran**, (Secretary)  
Imperial College London, UK
- **Jeanette Abela**, (Administration  
Assistant) Imperial College  
London, UK
- **Miguel Angel Astiz**, Spain
- **Stuart Alexander**, UK
- **Fabio Biondini**, Italy
- **Kai-Uwe Bletzinger**, Germany
- **Andrew Borgart**, The Netherlands
- **Dirk Bourlon**, Belgium
- **John Chilton**, UK
- **Dan Frangopol**, USA
- **Maria Garlock**, USA
- **Manfred Grohmann**, Germany
- **Reinhard Harte**, Germany
- **V N Heggade**, India
- **Dorian Janjic**, Austria
- **Jens Sandager Jensen**, Denmark
- **Eduardo Santos Júlio**, Portugal
- **Shiro Kato**, Japan
- **Kenichi Kawaguchi**, Japan
- **Seung-Deong Kim**,  
Republic of Korea
- **Juergen Peter Krieger**, Germany
- **Carlos Lazaro**, Spain
- **W. Ian Liddell**, UK
- **Angus Low**, UK
- **Joanne McCall**, Canada
- **Marijke Mollaert**, Belgium
- **René Motro**,
- **Hiroshi Ohmori**, Japan
- **John Ochsendorf**, USA
- **Juan Gerardo Oliva-Salinas**,  
Mexico
- **Gerard Parke**, UK
- **Ruy Marcelo de Oliveira Pauletti**,  
Brazil
- **Ignacio Paya-Zaforteza**, Spain
- **Jose Romo**, Spain
- **Xin Ruan**, China
- **Michael H Ramage**, UK
- **Ekkehard Ramm**, Germany
- **Edward John Rees**, UK
- **Mike Schlaich**, Germany
- **Ronald Shaeffer**, USA
- **Enzo Siviero**, Italy
- **Zhi Sun**, China
- **Tibor Tarnai**, Hungary
- **David Wakefield**, UK
- **Su-Duo Xue**, China
- **Yi Min Xie**, Australia
- **Hitoshi Yamada**, Japan
- **Rob Nijse**, The Netherlands
- **Qilin Zhang**, China

## Other Reviewers:

- **Nizar Bel Hadj Ali**, Switzerland
- **Ian Firth**, UK
- **Brian Smith**, UK
- **Peter Stafford**, UK

## ORGANISING COMMITTEE

**Ian Firth** (Flint & Neill, Co-chair: IABSE)  
**Brian Smith** (Flint & Neill, Co-chair: IASS)  
**Louise Duval** (Flint & Neill, Secretary)  
**John Carpenter** (Institution of Civil Engineers)  
**John Chilton** (Nottingham Trent University)  
**Tony Harris** (Parsons Brinkerhoff)  
**Chris Hendy** (Atkins)  
**Martin Kirk** (Arup)  
**Ian Liddell** (Retired, formerly Buro Happold)  
**David Nethercot** (Imperial College London)  
**Gerard Parke** (University of Surrey)  
**Claire Thomas** (Rambøll)  
**Chris Walker** (Flint & Neill)  
**Phil Williams** (Institution of Structural Engineers)

**Chris Woodfield** (Price & Myers)  
**Jeff Young** (Mott MacDonald)

## INTERNATIONAL ADVISORY PANEL

**John Abel**, USA  
**David Billington**, USA  
**Peter Buckland**, Canada  
**Jacques Combault**, France  
**Michael Dickson**, UK  
**Mamoru Kawaguchi**, Japan  
**Predrag Popovic**, USA  
**Klaus Ostenfeld**, Denmark  
**Jörg Schlaich**, Germany  
**R. Sundaram**, India  
**Michel Virlogeux**, France

# 1 TECHNICAL PROGRAMME

The Technical Programme will include the Opening Ceremony, Keynote Lectures in Plenary Sessions, Lectures given in Parallel and Technical Forum Sessions and the Closing Ceremony.

## Themes and Topics

The main theme “Taller, Longer, Lighter - meeting growing demand with limited resources” addresses the ever growing challenge for engineers, designers and constructors to stretch the boundaries of what and how we build. Whether concerned with making taller structures or longer spans, or using lighter weight materials, it is increasingly necessary to do so using the Earth’s resources in a sustainable way, and this has added extra complexities to the engineer’s task.

This main theme is supplemented by the following topics:

- Concepts and planning
- Design and construction
- Analysis and methods
- Materials and durability
- Saving energy and extending life
- Operation and maintenance
- Instrumentation and monitoring

The technical programme will include papers on a wide variety of subjects across the full spectrum of the technologies associated with structures covering one or more of the above headings. Special sessions will be held on some major projects and others will be organised around particular sub-themes by Working Groups and Working Commissions of the two Associations

## Symposium Proceedings

The printed Symposium proceedings will contain the one-page abstracts of all papers accepted by the Scientific Committee. The full version will be included on a CD-ROM enclosed with the proceedings.

**Note that the publication of papers is conditional on the author registering to attend the Symposium.**

## Language

The official language of the Symposium is English. All presentations will be made in English and no simultaneous translations will be provided.





**Lord Norman Foster** Norman Foster was born in Manchester in 1935. After graduating from Manchester University School of Architecture and City Planning in 1961 he won a Henry Fellowship to Yale University, where he gained a Master's Degree in Architecture. He is the founder and chairman of Foster + Partners. Established in London in 1967, it is now a worldwide practice, with project offices in more than twenty countries. Since its inception, the practice has received over 570 awards and citations for excellence and has won more than 100 international and national competitions. Current and recent work includes Beijing Airport, Millau Viaduct in France, the Swiss Re tower and the Great Court at the British Museum in London, the Hearst Headquarters tower in New York, the Robert and Arlene Kogod Courtyard at the Smithsonian Institution in Washington and masterplans for Masdar City in Abu Dhabi and the West Kowloon Cultural District in Hong Kong. He became the 21st Pritzker Architecture Prize Laureate in 1999 and was awarded the Praemium Imperiale Award for Architecture in 2002.

In 2009, he became the 29th laureate of the prestigious Prince of Asturias award for the Arts and was awarded the Knight Commander's Cross of the Order of Merit of the Federal Republic of Germany. In 1990 he was granted a Knighthood in the Queen's Birthday Honours, and in 1999 was honoured with a Life Peerage, becoming Lord Foster of Thames Bank.



**John Armitt** is Chairman of the Olympic Delivery Authority. John's career has straddled both the construction industry and the railways. He joined John Laing as a civil engineer in 1966, becoming Chairman of Laing's International and Civil Engineering Divisions in 1987. In 1993 he left to become Chief Executive of Union Railways, the company responsible for developing the high speed Channel Tunnel Rail Link. In 1997 he was appointed Chief Executive of Costain and in 2001 Chief Executive of Railtrack plc. A year later he was made Chief Executive of Network Rail.

He is a Fellow of the Royal Academy of Engineering and of the Institution of Civil Engineers and has honorary doctorates from the Universities of Portsmouth, Birmingham and Reading. He will present a keynote lecture at the start of a special plenary session on the structures for the London Olympics.



**Bill Baker** is the Structural Engineering Partner for Skidmore, Owings & Merrill in the USA. Throughout his career, he has dedicated himself to the structural innovation of tall buildings within the urban landscape, most recently developing the "buttressed core" structural system for the Burj Khalifa, the world's tallest manmade structure.

Bill's expertise also extends to long span roof structures, such as the Korean Air Lines Operations Center, as well as artistic collaborations and specialized structures like the GM Entry Pavilion. In 2010, Bill was awarded the Gold Medal by the Institution of Structural Engineers. Mr Baker will address the "Taller" element of the main theme.



**Lars Hauge** is Director for Bridges at COWI in Denmark. With extensive experience in design of long span bridges he has been responsible for COWI's work with some of the world's longest cable-supported spans. Mr. Hauge's involvement in these projects has given him in-depth knowledge on technical aspects in relation to design and construction of cable supported bridges as well as considerable management experience for large multi-disciplinary bridge projects. Mr. Hauge will address the "Longer" element of the main theme.



**Mamoru Kawaguchi** is a Former President of IASS and Professor Emeritus at Hosei University, Japan. He is well known for his work with large stadia and wide-span roof structures, including Tokyo Olympic Indoor Stadia, Grand Roof for Expo '70 in Osaka, Singapore National Indoor Stadium, Barcelona Olympic Sports Palace, Tianjin Museum, China and the Xativa Bullring, Valencia, Spain.

He has received several international awards including the IASS Tsuboi Prize (1993), the IABSE International Award of Merit (1995) and the IASS Torroja Medal (2001). Professor Kawaguchi will address the "Lighter" element of the main theme.

### 3 SYMPOSIUM SCHEDULE

Tuesday Sept. 20	Wednesday Sept. 21	Thursday Sept. 22	Friday Sept. 23
Opening Ceremony	Parallel Sessions	Parallel Sessions	Parallel Sessions
Break	Break	Break	Break
Plenary Session - Keynote Lectures	Parallel Sessions	Parallel Sessions	Parallel Sessions
Lunch	Lunch	Lunch	Lunch
Plenary Session - London Olympics	Parallel Sessions	Parallel Session	Plenary Session - Public Meeting
Break	Break	Break	Break
Parallel Sessions	Parallel Sessions	Parallel Sessions	Closing Session
Welcome Reception	Young Persons' Event	Gala Dinner	

There will be four sessions on each of the four days, two in the morning and two in the afternoon, with technical tours and visits for Accompanying Persons taking place throughout. After the first three Plenary Sessions the programme divides into Parallel Sessions which continue until the last afternoon.

Among these Parallel Sessions there will be some which have been arranged by particular Working Commissions or Working Groups of IABSE and IASS focussing on particular subjects relevant to their activities within the overall theme of the Symposium. There will also be special sessions devoted to particularly notable current projects including the Messina Bridge, the Shanghai Tower and the new Forth Replacement Crossing.

A special public session will be held on the last afternoon which will be open to delegates who have not attended the rest of the Symposium. This will include lectures from international leaders in the profession and will be an excellent opportunity to learn more about the activities of the Associations.

#### Young Persons Event

sponsored by Mott MacDonald

The Symposium is an excellent opportunity to interact with influential members of the international engineering community and for many established

IABSE and IASS members, the Symposium is an annual opportunity to get together with old friends and colleagues. The Young Persons' Network has been established for students and delegates up to the age of 35 to encourage younger aspiring members of the engineering community to engage with one another and form valuable professional relationships and friendships of their own.

#### The benefits of attending London 2011 as part of the YP Network include:

- YP Network social events, including the Young Persons' Event on Wednesday 21st September, sponsored by Mott MacDonald.
- Dedicated YP Technical Visits, coffee breaks, meeting points and tables at the Gala Dinner.
- Special delegate badges to help identify other YP Network members.
- Invitation to join the YP Network group on LinkedIn ([www.linkedin.com](http://www.linkedin.com)) - meet other YP Network members with similar technical and research interests and create and hold online technical fora before the Symposium.
- Free student membership of IASS for 2012 (full time students only).
- Free Membership of IABSE for 2012. >>



>> In addition, YP Network Members who are also presenting their papers at the Symposium are eligible for the IABSE Young Engineer Outstanding Contribution Award, and there is also an opportunity to enter for the IASS Hangai Prize Medal. Full details are available on the event web site. Participants wishing to join the YP Network and Programme should indicate this on the Registration form, and further details of the social events and YP Network opportunities will then be sent to interested delegates directly.

### **COMMERCIAL EXHIBITION**

There will be a Commercial Exhibition in the main Symposium venue, which will give delegates the opportunity to meet a variety of companies. The exhibition will be situated alongside the main plenary room. If your company is interested in exhibiting please contact Bill Butler at [b.butler@hgluk.com](mailto:b.butler@hgluk.com).

### **SPONSORSHIP OPPORTUNITIES**

There are still a limited number of sponsorship packages available to companies wishing to communicate and interact with delegates through branding, thought leadership and hospitality opportunities.

All sponsorship packages include on-site branding, acknowledgement in the Final Programme and complimentary delegate registrations.

Full details are available in the Sponsorship Prospectus available on the event web site [www.iabse-iass-2011.com](http://www.iabse-iass-2011.com).

Potential sponsors should contact Matthew Elton at [matthew@publicsectorsponsorship.com](mailto:matthew@publicsectorsponsorship.com)



Olympic Stadium



The Millennium Dome.

### **TECHNICAL TOURS**

Guided tours are being arranged to the venues below during the Symposium. Tours will be repeated several times during the event in order to provide the opportunity for as many delegates to attend as possible. Each tour is designed to take half a day, so delegates attending a tour will miss either one morning or one afternoon of lectures in the technical programme. All Technical Tours start and finish at the main Symposium venue.

Tour selection must be made in advance on the Symposium web site once the Final Programme is published (expected to be in August). There will be severe restrictions on the numbers for each visit, and a strict 'first come first served' policy will have to be adopted. A limited number of places may still be available at registration upon arrival in September. Please book early as soon as the Final Programme is published.

#### **TT1. Olympic Park**

An opportunity to see the new Olympic Stadium, Velodrome and other structures constructed specially for the Olympics to be held in London in 2012. Delegates will be taken by coach to the Olympic Park in East London where they will have to pass through security - passports will be required. They will be shown around the site in special coaches with a tour guide technically familiar with the site. Because of tight security requirements and restricted numbers, delegates coming on these tours will need to have made confirmed bookings by the 17th September.

#### **TT2. The O2 (The Millennium Dome)**

This famous lightweight dome structure, 320m across, was built for the Millennium celebrations held in 1999 and continues now as the O2 - one of London's major events venues with a 20,000 seat arena considered to be the best of its kind in the world. The dome itself is open to the public and delegates can visit in their own time if they wish. However, those on this tour will be guided by the engineers involved in the structures and the O2 facility manager.

#### **TT3. The Shard**

Currently under construction and due to be nearly structurally complete by the time of the Symposium, the Shard will be Europe's tallest building at 306m high.

#### **TT4. Crossrail**

This major new east-west rail line through the centre of London is one of the biggest and most challenging construction projects going on anywhere.

### **SELF GUIDED TOURS IN LONDON**

All delegates will receive a pocket guide book giving information about buildings and structures of interest in Central London with suggested walking routes to see them. The Guide has been produced, by Ian Liddell, and is intended to help delegates find out about the bridges and buildings in the city that would be of particular interest.



## SOCIAL PROGRAMME

### Welcome Reception

All Participants and Accompanying Persons are invited to attend the Welcome Reception which will be held at the main Symposium venue on Tuesday 20th September. A finger buffet will be provided. Young Persons Event, sponsored by Mott Macdonald A social event combined with a special YP Network Technical Visit to the O2 (Millennium Dome) will be arranged in the evening of Wednesday 21st September. Further details to follow.

### Gala Dinner

The Gala Dinner will be held on board a spectacular boat on the River Thames on Thursday 22nd September. The Silver Sturgeon will leave from Westminster Pier and travel up and down the river during dinner, affording delegates the chance to see many of London's most famous landmarks and historical sites. Tickets for the Dinner must be purchased in advance through the web registration form. Tickets will be assigned strictly on a first come first served basis as numbers are limited by the capacity of the vessel. Early registration and dinner reservation is essential.

### ACCOMPANYING PERSONS

A full programme is being organised for Accompanying Persons which will include visits to landmark sites in London and to famous historic locations a short distance outside the city. The visits will take place every day from Tuesday 20th to Friday 23rd September. In view of the large numbers expected and the practical limit of numbers in any one group, parallel visits will be organised on each day.

All visits start and end at the Main Symposium venue in Westminster.

Within London, guided visits will be made to historical places such as Westminster Abbey, St Paul's Cathedral and Buckingham Palace as well as to the National Gallery, the Tate Modern art gallery and other places of interest. Afternoon tea will be taken at Fortnum and Mason in Piccadilly, one of the most famous establishments to provide this traditional English event.



Outside London, a visit will be made to Windsor Castle and include a tour of the Royal State Rooms. The tour will also include a visit to the Savill Garden and the award-winning Building.

Participants in the Technical Programme who wish to join an Accompanying Person's visit may do so subject to an additional fee to cover costs. However, due to limitation on numbers, priority will be given to Accompanying Persons, so Participants wishing to join a visit will only be able to register for it in person upon arrival at the Symposium, numbers permitting.



Emmanuel College, Cambridge.



Leeds Castle, Kent.

## SYMPOSIUM VENUE

The Symposium will take place in the Queen Elizabeth II Conference Centre in Westminster. This venue is adjacent to Westminster Abbey and Parliament Square, and close to many historical sites and places of interest in Central London.

The Queen Elizabeth II Conference Centre, Broad Sanctuary, Westminster, London, SW1P 3EE  
[www.qeicc.co.uk](http://www.qeicc.co.uk)

## HOTELS

Accommodation is not included in the delegate fee. The Organising Committee has selected hotels which cover a range of price and quality. Please refer to the Symposium web site for details and the online booking form. All hotels have been selected for their convenience and easy accessibility to the Main Venue, and to Imperial College for those attending the Annual Meetings before the Symposium.

To secure your hotel of choice, reservation should be made as soon as possible by following the link on the Symposium web site [www.iabse-iass-2011.com](http://www.iabse-iass-2011.com).

## TRAVEL INFORMATION

The Symposium is in Central London, within easy reach of all of London's international airports. The Main Venue is Westminster, at the heart of London, and 5 minutes walk from Westminster and St James's Park stations on the London Underground. Full travel details and maps can be found on the website: [www.iabse-iass-2011.com](http://www.iabse-iass-2011.com)

## PRE AND POST SYMPOSIUM TOURS

No special tours have been arranged, but a wide variety of tours can be made to take advantage of the extraordinary wealth of interesting historical and cultural places of interest within a very short distance of central London. Guided day trips by coach can be arranged for you to extend your visit to London. Some of the tours on offer include:

**BATH** - A UNESCO World Historical Site, Bath is a unique city with its springs, Roman Baths, Abbey, and Georgian stone crescents. Take time to browse at the city shops as this compact city centre is largely free of traffic.

**CAMBRIDGE** - This ancient university city has college buildings of all architectural styles. King's College Chapel has some of the finest Gothic fan vaulting in England. Or why not try your hand at punting on the River Cam!

**KENT, LEEDS CASTLE** - Deep in the cascading countryside of Kent sits Leeds Castle, set in 500 acres of magnificent landscaped parkland. King Henry VIII retreated to Leeds Castle to escape the plague raging in London during his reign.

**SALISBURY** - Sample the splendour of Salisbury. Soaring into the skyline, the spire of Salisbury Cathedral stands at a staggering 123m (404ft)!

Prices and tour details are subject to final numbers. For further details of all these tours and how to book, please go to the website:  
[www.iabse-iass-2011.com/symposium--tours/pre-post-tours](http://www.iabse-iass-2011.com/symposium--tours/pre-post-tours)

# REGISTRATION FEES

Registration Fees (Note one.)	Early payment rate (Payment received by 30 June 2011)	Standard rate (Payment received after 30 June 2011)
IABSE or IASS Member Participant**	£600	£650
Non-member Participant	£700	£750
Young Participant *	£350	£380
Student Participant *	£150	£185
IASS Senior Member Participant *	£500	£550
Accompanying Persons *	£300	£350
Press *	Free of Charge	Free of Charge
Exhibitor *	Free of Charge	Free of Charge
Gala Dinner	£100	£120
Participant joining Accompanying Person tour (per day)	Not available	£80

**Note one.**

All fees listed above are exclusive of VAT. Under UK VAT legislation, VAT will be charged at 20% on all Registration fees. Visitors from outside the United Kingdom are entitled to reclaim the VAT paid on many of their costs.

Please visit [www.thevatconsultancy.com](http://www.thevatconsultancy.com) for further information as well as the event website [www.iabse-iass-2011.com](http://www.iabse-iass-2011.com) for your easy step guide to VAT reclaim.

\*Special conditions apply, please refer to the website for full details.

\*\* Collective members of IABSE should register as a non-member participant, but they will receive a credit for up to 2 participants.

# REGISTRATION

Registration in advance must be made online at [www.iabse-iass-2011.com](http://www.iabse-iass-2011.com). Registration will also be possible in person at the event, although advance registration is strongly recommended.

The registration fee for Participants includes admission to the Opening and Closing Ceremonies, all Technical Sessions, the Commercial Exhibition and the Welcome Reception, a copy of the Symposium Proceedings with CD-ROM, and all lunch and refreshment breaks.

The registration fee for Accompanying Persons includes admission to the Opening and Closing Ceremonies, the Commercial Exhibition and the Welcome Reception, and the full Accompanying Persons' programme of visits, which include lunch and refreshment breaks.

Participants wishing to join any Accompanying Persons' tour will incur an additional daily fee as noted in the table, but this option will only be available on arrival at the Symposium if the tour is not already full.

## Onsite Registration Opening Times

Symposium badges will not be sent out before the event. Please ensure you bring your email confirmation with you to collect your name badge at the onsite registration desks as this contains your unique registration number.

To avoid queuing at the event, attendees are reminded to use the early registration on Monday 19 September from 14.00 - 19.00. If you do not register prior to the event, all new onsite registrations must be made with full payment during the following opening hours:

Monday 19 September	14.00 - 19.00
Tuesday 20 September	07.30 - 18.00

## Passport & Visa Details

Foreign participants travelling to the United Kingdom are encouraged to determine their passport and visa requirements as early as possible, by visiting the UK Border Agency website at [www.ukvisas.gov.uk/en/doineedvisa](http://www.ukvisas.gov.uk/en/doineedvisa)

It is the delegate's responsibility to apply for a visa. The event terms and conditions apply regardless of whether visas are granted.

Individuals requiring an official "Letter of Invitation" to attend the Conference in order to obtain a visa should contact the Secretariat at [r.gardner@hgluk.com](mailto:r.gardner@hgluk.com). Invitation letters will be issued at the Organisers' discretion.

# IABSE AND IASS ANNUAL MEETINGS

The Annual Meetings of both Associations will take place immediately prior to the Symposium at Imperial College in South Kensington, not far from the Main Symposium Venue in Westminster.

Some additional meetings and events will take place during the Symposium itself. Further details will be mailed to those concerned prior to the meetings.

<b>Preliminary Annual Meetings Schedule</b>		
	<b>IABSE Meetings</b>	<b>IASS Meetings</b>
<b>Sat. 17 Sept. - pm</b>	Admin. Committee Outstanding Structures IABSE Foundation	
<b>Sun. 18 Sept. - am</b>	Technical Committee Executive Sub-Groups	
<b>Sun. 18 Sept. - pm</b>	Executive Committee Working Commissions	Working Bureau
<b>Mon. 19 Sept. - am</b>	Technical Committee Scientific Committees SEI & SED Edit. Board Young Engineers Board E-Learning Board Advisory Group to ExC	Executive Council
<b>Mon. 19 Sept. - pm</b>	SEI Correspondents Working Groups Permanent Committee	Executive Council
<b>Thurs. 22 Sept.</b>	Admin. Committee	

# SPONSORSHIP OVERVIEW

## IABSE-IASS 2011 would like to thank our sponsors and partners for their support

### GOLD LEVEL SPONSORSHIP

#### COWI

COWI is a leading northern European consulting group. We provide state-of-the-art services within the fields of engineering, environmental science and economics, with due consideration for the environment and society. In the last 80 years COWI has grown from a single engineer working in a small apartment in Copenhagen to a world leading company employing over 6,000 people at more than 100 offices globally.

We are delighted to welcome delegates to London, as a gold sponsor of the IABSE-IASS Symposium. We meet on the threshold of the London 2012 Olympic Games. This is a fitting backdrop for the Symposium, because today's engineers, architects and constructors face competition that is just as intense - and international - as any Olympics.

Our own 'Olympians' are in the midst of helping design some of the world's most complex infrastructure projects including the Hong Kong-Zhuhai-Macau Link - the world's longest immersed tube tunnel and the London Array - the world's largest offshore windfarm.

This ability to compete is not the only key to our success. At COWI we believe that it's just as important to be able to cooperate. Our specialists draw on colleagues from other disciplines and tackle projects from a range of vantage points.

As we build Italy's Messina Bridge, for example, we don't just look at how to deliver motorists from point A to B on the world's longest suspension bridge. Instead, we see the structure in relation to its impact on the environment as well as the local and regional economy. But we're not satisfied there.

That's why we are looking forward to meeting our international colleagues in London to discuss ways to redefine 'Taller, Longer and Lighter'. And - of course - smarter and more sustainable. Let the Games - and the Symposium - begin.

### SILVER LEVEL SPONSORSHIP

#### ARUP

Arup is the creative force at the heart of many of the world's most prominent projects in the built environment and across industry. From 90 offices in 35 countries our 10,000 planners, designers, engineers and consultants deliver innovative projects across the world with creativity and passion. Founded in 1946 with an enduring set of values, our unique trust ownership fosters a distinctive culture and an intellectual independence that encourages collaborative working. This is reflected in everything we do, allowing us to develop meaningful ideas, help shape agendas and deliver results that frequently surpass the expectations of our clients.

We have over 60 years experience in delivering the most challenging and iconic structures worldwide. From the Pompidou Centre in Paris to CCTV in Beijing, from the Oresund Bridge linking Denmark and Sweden to Brisbane's Kurilpa pedestrian bridge, from Heathrow Terminal 5 to High Speed 1 our people design structures of economy and elegance to realise clients' ambitions. We develop new systems, and sometimes use new materials, to enable reduced construction costs and greater sustainability in operation. Arup solutions make the most ambitious structures buildable.

#### ATKINS

Atkins is the largest engineering consultancy in the UK and the largest multidisciplinary consultancy in Europe. Our size brings significant value to our clients, allowing us to harness an unrivalled breadth of skills and deep technical expertise to produce outstanding solutions to the most challenging problems. Whether it be the design of physical structures such as office towers, schools, bridges and highways, or design of management systems and business processes we apply the same passion and creativity combined with rigorous quality standards. >>

» Atkins is proud to be the official design services provider for the 2012 Olympic Games. When London was awarded the 2012 Games, a persistent concern was whether 2.5km<sup>2</sup> of derelict and hugely contaminated site could be transformed in time and to cost. The answer is a resounding yes. Not only was the entire site cleared, cleaned and stabilised in readiness for the construction of the Olympic Park facilities, but new benchmarks have been set for how to approach future brownfield redevelopments.

At this IABSE-IASS Symposium, we are able to share some of the innovation and learning we have brought to bridge design in the Olympics project. Our depth of knowledge in bridge engineering runs from conceptual design to hands on operational responsibility.

Whether it is an initial feasibility study for a river crossing or designing a cable repair scheme, we plan, design and enable solutions for our clients. Chris Hendy, our Network Chair for Bridge Engineering, will be presenting at the conference and will be available throughout to discuss any aspects of our services with you, whether in bridge engineering or other engineering disciplines.



Bentley is the global leader dedicated to providing architects, engineers, constructors, and owner-operators with comprehensive software solutions for sustaining infrastructure. Founded in 1984, Bentley has nearly 3,000 colleagues in more than 45 countries, \$500 million in annual revenues, and, since 1999, has invested more than \$1 billion in research, development, and acquisitions. Developed over two decades the Bentley bridge solution is composed of a family of software applications including RM Bridge and LEAP Bridge, to enable the complex modeling, design, and analysis of virtually any bridge type, both existing and new structures, across the many speciality areas of bridge design and construction.

- RM Bridge performs 4D (time) modeling of the bridge to simulate construction, determine resilience during seismic and natural events, and analyze rolling stock.

- LEAP Bridge software for concrete bridges is a U.S. industry standard used by thousands of bridge engineers, 38 U.S. state departments of transportation, and the FHWA.

The Bentley bridge solution is the foundation for Bridge Information Modeling (BrIM), a new and innovative approach to bridge engineering and project delivery.

A bridge information model can be an information definition of the bridge asset, co-created by many people using an array of technology to answer broad-ranging needs. BrIM fosters the use of data beyond bridge design and engineering needs to inform downstream processes such as fabrication, construction, maintenance and inspection, benefiting the entire bridge lifecycle and resulting in the development of new best-practices.



Mott MacDonald is an employee-owned, uniquely diverse £1 billion global management, engineering and development consultancy. Our 14,000 staff deliver leading-edge solutions for both public and private sector clients in over 140 countries worldwide. Serving customers across 12 sectors from transport, buildings, energy, environment and water to health, education, communications and international development, Mott MacDonald offers a truly integrated service, from business case preparation and advice on key issues to design, implementation and ongoing support.

Our people are far and away our most valuable asset and the importance of our young and aspiring professionals cannot be overstated. We place considerable emphasis on our training programmes for graduates and young professionals developing well-rounded high quality skills and leading to full professional qualifications and membership of engineering institutions including the Institution of Civil Engineers and Institution of Structural Engineers.

Working alongside some of the best engineers in the world we support our young engineers to build exciting and successful careers, »»

» helping us to continue Mott MacDonald's outstanding tradition of engineering excellence.

With our strong tradition and ongoing delivery of technical excellence in bridge and structural engineering Mott MacDonald is delighted to be able to sponsor this important international IABSE-IASS Symposium and wish the organisers, presenters and delegates a thought provoking and enjoyable experience with lasting tangible benefits to all. Visit our specialist websites [www.bridges.mottmac.com](http://www.bridges.mottmac.com) and [www.buildings.mottmac.com](http://www.buildings.mottmac.com) for in-depth information about bridge and structural engineering in Mott MacDonald and see [www.mottmac.com](http://www.mottmac.com) to find out about our projects and people spanning all 12 core sectors.

#### BRONZE LEVEL SPONSORSHIP



Architectural Design and Research Institute of Tongji University (Group) Co., Ltd., founded in 1958, is one of the leading design groups in China with the most comprehensive range of disciplines available in the country, allowing us to develop many types of design projects such as office,

retail, healthcare, culture, urban complex, transportation, infrastructure facilities.

With our 2000 architects, designers, structural and MEP engineers in 6 offices across China, we have completed over 4000 design projects and won over 400 national level awards for design works since 1986.

The most recent influential projects of our institute are the Shanghai Tower project, in which we need to deal with a 632-meter high skyscraper and assure it is stable, economic and sustainable, and the Shanghai 2010 EXPO projects. In 2010, Shanghai, as the first developing country that host Expo activities, accommodated over 70 million visitors both from home and abroad. We were involved in the design of 138 individual buildings covering the area of 737,000 square meters for the 2010 Shanghai Expo.

At this IABSE-IASS symposium, we are able to share some of the learning we have brought to the design of Shanghai Tower through a special session. The structural engineers from our design institute will be presenting at the conference on the design of Shanghai Tower and they will be available throughout to discuss any aspects of our services with you.

# ABOUT IABSE AND IASS

The International Association for Bridge and Structural Engineering was founded in 1929, and the International Association for Shell and Spatial Structures was founded in 1959. Both associations have similar goals, namely to promote the exchange of knowledge and achieve technological progress through the interchange of ideas between all those involved or interested in their fields of activity. IABSE has a broad focus on bridges and structural engineering whereas IASS tends to concentrate on lightweight structural systems such as lattice, tension, membrane and shell structures. To this end, both associations organise conferences and symposia, publish journals and other reports, and also present awards to recognise outstanding achievements.

**IABSE** ETH Zurich  
Hoenggerberg HIL E21.3  
8093 Zurich  
Switzerland  
Phone: +41-44-633-2647  
Fax: +41-44-633-1241  
Email: [secretariat@iabse.org](mailto:secretariat@iabse.org)  
Web: <http://www.iabse.org>

**IASS** IASS · CEDEX  
Laboratorio Central de Estructuras y  
Materiales  
C/ Alfonso XII, 3 · 28014 Madrid, Spain  
Phone: +34-91-335-7409  
Fax: +34-91-335-7422  
Email: [iass@cedex.es](mailto:iass@cedex.es)  
Web: <http://www.iass-structures.org>

## SYMPOSIUM CONTACTS

**Web:** [www.iabse-iass-2011.com](http://www.iabse-iass-2011.com) **Secretariat:** Rachel Gardner **email:** [r.gardner@hgluk.com](mailto:r.gardner@hgluk.com)

**Scientific Committee:** Ana M Ruiz-Teran **email:** [scientificcommittee@iabse-iass-2011.com](mailto:scientificcommittee@iabse-iass-2011.com)

**Organising Committee:** Louise Duval **email:** [l.duval@flintneill.com](mailto:l.duval@flintneill.com)

**Exhibition:** Bill Butler **email:** [b.butler@hgluk.com](mailto:b.butler@hgluk.com)

**Sponsorship:** Matthew Elton **email:** [matthew@publicsectorsponsorship.com](mailto:matthew@publicsectorsponsorship.com)









