

IN BRIEF

ENGINEERING FOR ALL AT THE BA FESTIVAL

The festival season is now upon us, and September sees the BA Festival of Science in Norwich. First established to provide a forum outside London where scientists could discuss the latest research, it has grown into an annual focal point for students, teachers, scientists, science presenters and the science media. Now, it is the largest public access celebration of science in the country, which anyone can attend.

The festival has an illustrious history. Highlights of early meetings include the coining of the term 'scientist', the first use of the term 'dinosaur' (1841), the debate on Darwinism between Huxley and Wilberforce (1860), Joule's experiments (1840s) and the first demonstration of wireless transmission (1894).

The BA (The British Association for the Advancement of Science) describes itself as "a charity which exists to advance the understanding, accessibility and accountability of the sciences and engineering", and,

with that in mind, it devotes an entire section of its festival to engineering. Every year, a team of volunteers from The Royal Academy of Engineering, UCL, the Learning Grid and other engineering bodies put together an exciting day of engineering talks and shows.

This year, the Engineering Programme takes place on Thursday 7 September and includes a hands-on exhibition with exhibitors from F1 in Schools, Formula Student, Green Power, the Best Programme, *Shape the Future* and Shell Eco

Marathon to name but a few. Speakers from RedR, BP and UCL, with a further guest speaker still to be announced, are tackling topical issues such as the risks of climate change, disaster response and biometrics. The exhibition opens at 11.00am and the sessions begin with a free buffet lunch in the John Innes Centre, Norwich Research Park at 1.00pm prior to the presentations.

For more information see www.the-ba.net/the-ba/Events/FestivalofScience



CAN ENGINEERS RISE TO THE GLOBAL CHALLENGE?

On the 3 and 4 July 2006 the Institution of Civil Engineers is holding a conference entitled 'Safety, Security and Sustainability: Can engineers rise to the global challenge?' The conference is co-sponsored by The Royal Academy of Engineering.



Solving global problems requires engineers to work in partnership, crossing disciplines to ensure that key decision makers take a global view of sustainability and enable global solutions. This conference brings together international engineering institutions to agree a joint protocol for a sustainable future for the planet.

Engineers across all disciplines will find the conference highly topical, as will young engineers with an interest in society. The conference will provide an opportunity for major

consultancies and contractors to network at the highest level with government, its advisors and those working with non-governmental organisations.

Academy President Lord Broers will provide the opening address, and the keynote speakers are Sir Anthony Piggott from QinetiQ and Lord Hunt from University College London. Other speakers include Sir David King and Professor Shiro Takada. They will speak on a variety of subjects including Poverty Reduction, Water, Pollution Control, Ethics and Disaster Recovery.

For more details please see www.iceconferences.com or email tom.mclaughlan@raeng.org.uk

A BALANCED APPROACH TO ENERGY

The combined Nordic Chambers of Commerce and The Royal Academy of Engineering have finalised the programme for their joint conference on energy this autumn.

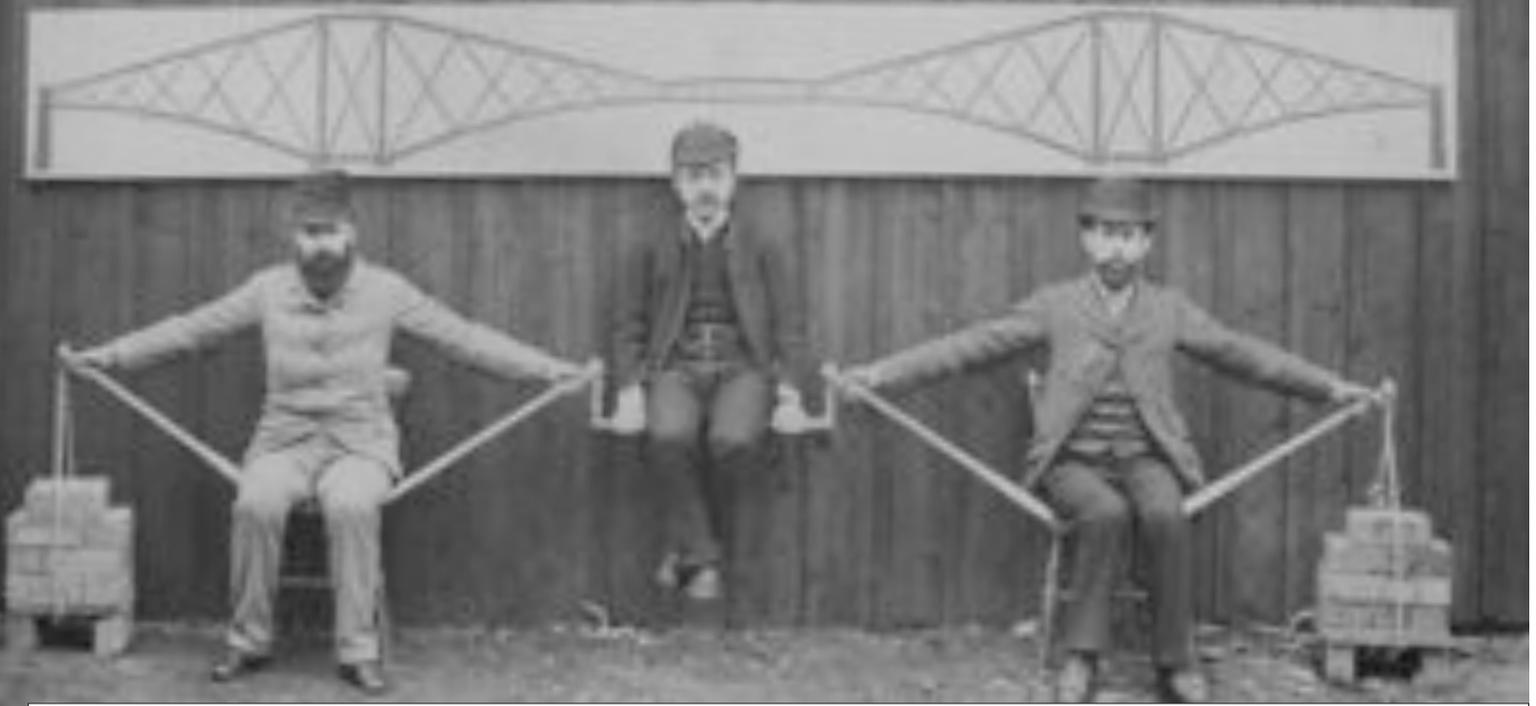
'A Balanced Approach to Energy – The Nordic Experience' brings to London experts from the Nordic countries to share their experiences and achievements in creating an energy policy which delivers sustainable, secure and affordable supplies. The conference also aims to demonstrate the expertise in the UK, and elsewhere in Europe, in areas such as security and risk management, the economics and financing of energy projects and carbon emissions trading.

Speakers at the Conference include the Government's Chief

Scientific Advisor, Sir David King on sources of energy that meet targets for carbon emissions; Paavo Lipponen, Speaker of the House of the Finnish Parliament and former Prime Minister of Finland, on the politics and public policies of energy supply and financing; Nina Udnes Tronstad, Executive Vice President for Health, Safety and the Environment at Statoil, on green oil and gas, plus carbon capture and storage; and Jukka Laaksonen, Executive Director at STUK, the Radiation and Nuclear Safety Authority of Finland, on nuclear waste disposal.

The one day conference is sponsored by UPM-Kymmene, Stora Enso, DnBNOR, Shell and Fortum. It takes place at 6-9 Carlton House Terrace, London on Friday 8 September 2006 and will be followed by a dinner at the Banqueting House. Chairman of Shell UK, James Smith, will give an after dinner speech.

For more details and booking information please email amy.abbott@raeng.org.uk or visit www.fbcc.co.uk/eventbooking.asp?ID=177



Original photograph by Edward Carey, c1887 © Civil and Environmental Engineering Department Library, Imperial College London

ONE OF THE SEVEN WONDERS

The Scotsman, in partnership with The National Trust for Scotland, has named the Forth Rail Bridge as one of the 'Seven Wonders of Scotland'. The public ballot attracted more than 50,000 votes and the Forth Bridge fought off stiff competition to take the top place in a list that included not only the kilt, but also single malt whisky and the landscape of Glencoe.

The Forth Bridge connects Edinburgh with Fife, and is an essential artery between the north-east and south-east of Scotland. The bridge carries an average daily traffic of 180–200 trains.

Designed by civil engineers Sir John Fowler and Sir Benjamin Baker, the Forth Bridge was built by Sir William Arrol's company, Tancred-Arrol, between 1883 and 1890. The bridge was opened on 4 March, 1890. The future King Edward VII drove home the last, gold-plated, of the eight million rivets as part of the opening ceremony.

As this accolade demonstrates, the Forth Bridge continues to be regarded as an engineering marvel. More than 55,000 tons of steel were used and 4,600 workers employed in its construction. It is one and a half miles in length and stands 150ft above high tide. It consists of two main spans, each comprising two 680ft cantilever arms supporting a central 350ft span girder bridge. The three four-tower cantilever structures

are 340ft tall, with each 70ft diameter foot resting on a separate foundation. The use of a cantilever structure was not new in the field of bridge design, but an undertaking of this scale was a pioneering move.

The photograph here is entitled 'Photograph of Japanese engineer held on swing between two men to demonstrate the cantilever principle on which the Forth Bridge was built'. At the time of the Forth Bridge's opening, the UK was at the height of its industrial and engineering powers. Its prosperity and wealth of knowledge garnered a worldwide reputation and, as such, international students were routinely sent to the UK to study engineering. The Japanese engineer in this image was in fact Kaichi Watanabe, a Japanese student sent to the UK to study with Sir Benjamin Baker.

For more information see <http://heritage.scotsman.com/wonders.cfm?action=list>