

ICE NEWS

GEOTECHNICAL

Geotech conference attracts huge civil engineer audience in Edinburgh

By Mike Chrimes

Perhaps the largest conference of civil engineers ever seen in the UK was the 16th European Conference on Soil Mechanics and Geotechnical Engineering, held this year in Edinburgh. Over 1,150 participants attended the British Geotechnical Association event between 13 and 17 September.

Conference organisers decided that individual countries could submit as many papers as they liked. This encouraged a greater participation of young and mid-career professionals, and prevented senior figures from dominating the programme.

Inevitably, the UK provided the largest proportion of papers (30%), with 90 papers from outside Europe. In total, an impressive 55 countries submitted papers to the conference, and the event hosted delegates from 65 countries. The high UK total reflected the support of the British and Irish geotechnical communities.

The conference was opened by Scotland's transport and islands minister Derek Mackay. He recognised the importance of infrastructure to the Scottish economy and the need for future engineers of the calibre of Telford, Rennie, Arrol and Rankine to deliver a resilient infrastructure capable of meeting the challenge of climate change. He paid tribute to today's geotechnical engineering, and lauded the UK for its leadership in the field internationally.

This set the scene perfectly for Kenichi Soga from Cambridge



Underground sensation: Kenichi Soga from Cambridge University delivers his lecture on the role of sensors in understanding geotechnical structures

University to present the opening keynote lecture on "The Role of distributed sensing in understanding the engineering performance of geotechnical structures".

This concentrated on work done at the Cambridge Centre for Smart Infrastructure and Construction. Using case studies such as Crossrail, London Bridge Station and a building in the Isle of Dogs, he foretold a future where smarter information derived from the data provided by embedded

sensors will enable better design, construction and maintenance, with engineering information integrated with data on human behaviour, for example, to provide a truly integrated systems approach for infrastructure.

Many of the themes touched on by Soga recurred in other papers, even when their titles did not reflect them.

The ability to use big data and advanced numerical modelling for better engineering decisions was heard time and again.

Helmut Schweiger, head of the Computational Geotechnics Group at the Institute for Soil Mechanics and Foundation Engineering of the Graz University of Technology in Austria delivered an invited lecture on the merits of advanced models and whetted the appetite on the latter, looking at a tunnel excavation in Bratislava, and a jet grout base panel in a deep excavation.

The general theme of geotechnical engineering for infrastructure and development, ensured that there was a broad spread of geotechnical topics.

Landslides and geohazards were the subject of around 150 papers, and Aristotle University of Thessaloniki academic Kyriazis Pitilakis' invited paper considered the vulnerability of buildings to co-seismic permanent slope displacements, using new predictive models and analytical expressions for assessing co-seismic displacements of slopes, and comparing them with existing models.

Other papers incidentally referred to the challenges of contracting outside the UK, notably problems in China where it seemed impossible to change designs once the contract was signed and the contractor on site.

Edinburgh received 686 papers and made a £3M contribution to the local economy. The published proceedings are the largest "book" ever produced by the ICE, with papers available for download from the ICE virtual library at www.thomastelford.com/books/catalogues/geotechnical%20and%20environmental%20engineering.compressed.pdf

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1 Great George Street,
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