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Speakers:
Charlene Ting
Arup

Ben Gilson
Arup

Date:
15th January 2020

Tea / coffee: 17:30
Lecture: 18:00

Drinks reception follows lecture

Location:
Burlington House
Piccadilly, London

Developing the 3D Project Stratigraphic Model for Crossrail 2

An evening meeting by the

Engineering Group of the Geological Society (EGGS)

A ~40km^2 3D geological model, known as the Project Stratigraphic Model, has been developed for Crossrail 2, a proposed £30bn railway linking Surrey and Hertfordshire via 32km long tunnels through London. The British Geological Survey 1:50,000 London Basin model was adopted as the initial baseline model. Over 1,000 boreholes were incorporated, together with information from existing publications, to review and refine the baseline model, using a combination of digital tools such as ArcGIS and Leapfrog Works. The Project Stratigraphic Model was a key tool for identifying geological hazards, including faulting and 'drift-filled hollows' along the route, designing the alignment, informing early design decisions for tunnels, shafts and station boxes based on constructability, cost and programme, and informing obstruction risk assessments. The speakers will describe the process of 3D ground modelling, the communication of geological uncertainty, the applications of the Project Stratigraphic Model on the project, and further refinements proposed for future design and construction stages.

Speaker Biographies

Charlene Ting

Charlene is a Chartered Geologist with six years' experience in Arup Geotechnics. Charlene has developed expertise in a range of engineering geological and geotechnical projects in the UK, Middle East and Central Asia. More recently, Charlene has been integrating her understanding of geology and geological processes with her experience in ground investigation to develop 3D geological models for major infrastructure projects, including the Crossrail 2 Project Stratigraphic Model. These 3D geological models have played a key role in informing geotechnical design.

Ben Gilson

Ben is a Chartered Senior Geotechnical Engineer and has worked on major linear infrastructure projects, alongside energy, residential and commercial projects since joining Arup in 2010. As lead geotechnical engineer for the Arup Crossrail 2 Tunnel and Systems Design contract, Ben has developed the ground model for the project with Charlene, drawing on his experience of geology in the London basin, including HS2 Euston Station and various public and private developments, and wider experience on geohazard studies in the UK and abroad.