BGA Evening Meeting

15th April 2015 6pm

Institution of Civil Engineers, One Great George Street,
Westminster, London SW1P 3AA

Assessing the impact of new works at Victoria

Mr Peter Rutty and Dr Yu Sheng Hsu, Mott MacDonald
Dr Felix Schroeder, Geotechnical Consulting Group LLP

Summary:

In London's congested urban environment new works invariably have an impact on existing infrastructure. For single developments this is a comparatively routine issue, however where two new substantial developments occur concurrently adjacent to important infrastructure the issues become more complex; the roles and responsibilities of the interested parties must be clearly defined and understood, there should be a measure of agreement on the assessment methods and criteria, and the process needs to be managed in a timely and economic fashion.

One such example is at Victoria, where the Victoria Station Upgrade works and Land Securities' Nova development, which includes a 100m x 125m x 15m deep basement, are both currently being constructed in close proximity to LUL's existing infrastructure. Consequently, it was necessary to consider the combined impact from both projects on LUL's infrastructure. The presentation will briefly describe the two projects and outline how the assessments, which used numerical modelling, were undertaken and managed, and requirements for independent verification were met. The challenges of ensuring the assessments were independently undertaken in a collaborative environment, to ensure that outcomes could be effectively compared, will be described. Other issues such as monitoring to verify expected outcomes will also be addressed and the talk will conclude with some lessons learned from what proved to be a successful process for all involved.

Biographies:

Mr Peter Rutty, Project Director, Mott MacDonald

Peter Rutty is a geotechnical engineer with more than 30 years' experience of design and construction of subsurface structures, foundations, earthworks and earth retaining structures. He is a project director at Mott MacDonald, with principal roles as geotechnical lead for the Victoria Station Upgrade project, responsible for design of the two ticket hall excavations, jet grouting for tunnels and potential damage assessments for third party and LUL structures, and now also geotechnical lead on Northern Line Extension. Previously he worked at Arup Geotechnics, where he was geotechnical lead responsible for design of the Canary Wharf Crossrail Station. Before this he spent eight years in Ireland, where he was co-founder of the consultancy Applied Ground Engineering Consultants. Before that he spent a number of years at Mott MacDonald/Mott, Hay & Anderson where he worked on projects including Channel Tunnel, highway projects in London Docklands, Limehouse Link, Boston Central Artery and Funchal Airport Extension. He's currently a member of the BGA executive committee, the Irish mirror group for EC7, and has also sat on committees for GSI and the Institution of Structural Engineers. He won the Fleming Award with colleagues from VSU in December 2014.

Dr Yu Sheng Hsu, Senior Principal Engineer, Mott MacDonald

After attaining his BEng in Civil Engineering from Imperial College, he followed on to do a PhD at Cambridge University, graduating in 1998. In 1996, he joined Mott MacDonald as a graduate engineer and is now a Senior Principal Engineer, Chartered Engineer and Member of the Institution of Civil Engineers. He has over 19 years' extensive experience in the application of advanced soil characterisation, numerical modelling and empirical ground movement prediction techniques in design and construction of shallow and deep foundations, underground excavations and impact studies of the effect of new construction on existing structures. He has published numerous papers and was awarded the ICE Telford Premium Award in 2009 for co-authoring the publication entitled "Evaluation of a novel method of SCL tunnelling".

Dr Felix Schroeder, Associate Director, Geotechnical Consulting Group LLP

Dr. Felix Schroeder is an Associate Director with the Geotechnical Consulting Group LLP, where he has been working since completing his PhD at Imperial College in 2003. He specialises in soil-structure interaction analysis, working on a large variety of projects. Felix has worked on many projects requiring the assessment of the effects of proposed developments on existing tunnels and services. This work included finite element analyses of the deep excavations required for Terminal 5C, Heathrow Airport, the re-development of the Shell Centre at Southbank, the Francis Crick Institute close to King's Cross/St Pancras, as well as the Land Securities' Nova development at Victoria discussed here.