



## Ground Behaviour during Tunnel Excavation in Soft Ground

Dr Benoît Jones

(Engineering Director – BEMO Tunnelling UK)

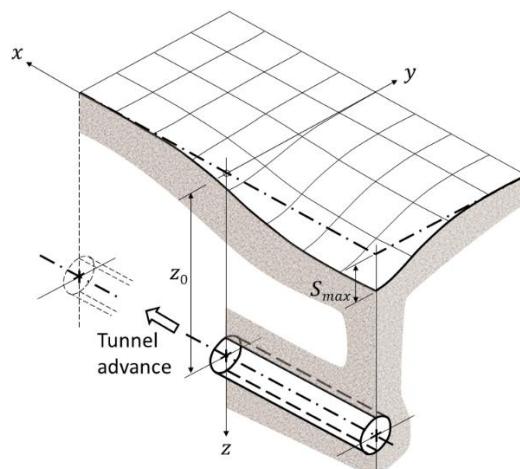
10<sup>th</sup> February 2026 | Cundall, Floor 4, 15 Colmore Row, Birmingham, B3 2BH | 6:30pm start

### Abstract:

When tunnels are excavated in soft ground, the in-situ stress state is altered causing ground movements and groundwater flows. There is then a soil-structure interaction between the ground and the lining, which depends on the tunnel lining stiffness and permeability as well as the geotechnical behaviour of the ground. This talk will use case studies of real tunnel construction to provide attendees with a conceptual model of ground behaviour when tunnels are excavated in soft ground, and how this behaviour is impacted by the construction method used and the ground type.



Simultaneous excavation of an enlargement and breakout of a pilot tunnel at King's Cross, 2007.



Empirical model of surface settlements above an advancing tunnel (based on a figure in Attewell, P. B., Yeates, J. & Selby, A. R. (1986). Soil movements induced by tunnelling and their effects on pipelines and structures. Glasgow: Blackie).

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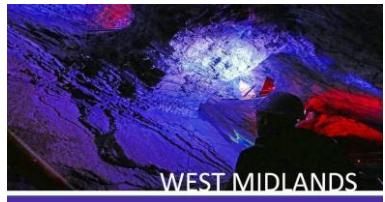


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### About the Speaker:

Dr Benoît Jones is the author of the first ever comprehensive textbook on soft ground tunnel design, titled *Soft Ground Tunnel Design*, published in 2022. Benoît has worked as a tunnel designer, contractor, consultant during his career, and set up and ran the MSc in Tunnelling and Underground Space at the University of Warwick (2011-2016). He is a Chartered Civil Engineer and Member of the Institution of Civil Engineers, and a Fellow of the Geological Society.



Benoît has been an elected committee member of the British Tunnelling Society and is still serving on its Technical Subcommittee several years later. He is also Chair of the International Tunnelling Association's ITAtech Activity Group on Low Carbon Concrete Linings, drafting a guideline published last year. He is currently the UK representative on the Eurocodes 'Ad Hoc Group' tasked with incorporating tunnel design into the Eurocodes.

Benoît has long been committed to innovation and best practice. He has written more than 60 articles and papers and has won several awards including the ICE Telford Premium, an ITA Award and three NCE Tunnelling Awards including one for 'Outstanding Contribution to the Industry'.

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