



NORTHERN IRELAND
GEOTECHNICAL GROUP

Evening Technical Talk

**The John Mitchell Lecture:
Thinking Conceptually About Groundwater Problems
Dr Martin Preene (Richter Associates)**



Past ICE President Rachel Skinner awarding Martin Preene with the John Mitchell Medal

Date: Thursday 29th September 2022
Time: 17:45 – 19:15 (lecture commencing 18:00)
Venue: Microsoft Teams Online Event ([Join here](#))

This event is sponsored by:

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Synopsis

Many excavations and tunnels experience problems and instability caused by uncontrolled groundwater inflows or pressures. Groundwater control measures are used to overcome these problems and create stable and workably dry conditions below groundwater level.



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A key challenge for designers is that the performance of the various different techniques is strongly influenced by the hydrogeological conditions at a site. Furthermore, the available ground investigation data may have data gaps or considerable uncertainty regarding key parameters such as permeability or hydraulic boundary conditions. This means that, when working with real-world data sets there are some groundwater problems where analysis involves so many assumptions and uncertainties that the design outcomes are of little practical value.

This lecture will discuss how thinking conceptually about groundwater problems can be of great benefit when developing groundwater control schemes, and that a robust conceptual model helps reduce the risk of designs being developed using inappropriate techniques. Examples will be given of cases where developing a conceptual understanding of groundwater conditions was vital in developing practical engineering solutions.

Biography

Dr Martin Preene is widely acknowledged as an expert in the investigation, design and implementation of temporary works designed for groundwater control for construction projects. A civil engineer by first training, he is both a Chartered Civil Engineer and a Chartered Geologist. He has 35 years' experience with both contractors and consultants, helping to deliver practical solutions to groundwater problems, and has worked on projects in more than 40 countries. He works as a Technical Director at Richter Associates where his focus is on integrating groundwater control into wider temporary works solutions.

Martin is a former Chairman of the British Geotechnical Association and is author or co-author of more than 70 technical publications, including CIRIA publication "*Groundwater Control – Design and Practice*" (C750) and the textbook "*Groundwater Lowering in Construction: A Practical Guide to Dewatering*", now in its 3rd edition. He has given invited lectures to a number of societies and worked with several universities as visiting lecturer and external examiner.

The John Mitchell Medal

The John Mitchell Medal is presented annually by the Institution of Civil Engineers (ICE), based on a nomination from the BGA (British Geotechnical Association), for significant contributions in the field of geotechnical engineering.

NI Geotechnical Group Calendar 2022-2023

Date	Time & Venue	Title
29 September 2022	18:00 <i>Online Webinar</i>	Thinking conceptually about groundwater problems Dr Martin Preene (Richter Associates)
26 October 2022	TBC	Cement-free binders for deep soil mixing stabilisation Dr Paul Sargent (Ulster University)
15 November 2022	18:00 <i>Online Webinar</i>	Geotechnical information management – unpacking the opportunities Jonny Neville (Mott MacDonald)
13 January 2023	-	NI Geotech Group Photo Competition Call for entries
6 February 2023	TBC	Geotechnical aspects of Islandmagee gas storage project – Joint ICE/ NI Geotech Group Mark Jessop (Islandmagee Energy), Dendrik Wilke & Christopher McMichael (Atkins)

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