AGS

WE NEED TO TALK ABOUT GROUNDWATER

2024

WEDNESDAY 6TH NOVEMBER 2024, 09.00–17.00
ETC.VENUES, MANCHESTER, 11 PORTLAND STREET, MANCHESTER, M1 3HU

DELTA-SIMONS ENVIRONMENTAL CONSULTANTS

WELCOME TO OUR GROUNDWATER CONFERENCE AT ETC.VENUES, MANCHESTER

The need to consider the impact and effect of groundwater during all stages of the design and construction process is of paramount importance for almost all construction and building projects. However, the impact of groundwater is often poorly understood.

At our Ground Risk conference held in November 2023, the Institute of Structural Engineers highlighted to us common foundation risks and problems they encounter due to insufficient information relating to groundwater being obtained, (or worse yet – perhaps not being interpreted appropriately). In this age of modular degrees and split responsibility on interpretation of groundwater data – is groundwater at risk of becoming a side issue rather than front and centre? Do we really give groundwater the attention it truly deserves? This full day, CPD conference aims to address some common issues and raise awareness of how groundwater can impact construction.

During the conference, we have morning and afternoon joint Q&A discussions with our session speakers which we hope you will engage with. This is an ideal time for you to question and learn from our selection of renowned speakers. I encourage you to submit questions and enter our polls via Mentimeter during the conference, (by scanning the QR codes which can be found on page 8).

We hope you enjoy the networking opportunities available and that you find time to visit the 10 exhibitors we have supporting the event.

As your Trade Association, we are constantly trying to improve our service and your feedback on the event really helps us do that.

Finally, if you or your company wish to get involved in the activities of the Association, please feel free to talk to us at the conference or send an e-mail to **ags@ags.org.uk.**

VIVIEN DENT
AGS CHAIR

#AGSGROUNDWATER

SPEAKERS & PRESENTATIONS

VIVIEN DENT
AGS Chair and Technical Specialist: Green Growth and Delivery at the Environment Agency

Vivien is a hydrogeologist with over 26 years' experience working in contaminated land, specialising in groundwater risk assessment. She recently moved to the Environment Agency where she works on major projects in the Hertfordshire and North London areas. Vivien is the current Chair of the Association of Geotechnical and Geoenvironmental Specialists.

DR ANDREW BOND
Director at Geocentrix

Dr Andrew Bond specialises in geotechnical design, software development, and professional training. He is Chair of B/526, the British Standards committee for geotechnics and working on National Annexes for the second-generation Eurocode 7. Andrew was Chair of the Eurocode 7 committee from 2010 to 2019 and was a member of the team that rewrote EN 1990 Basis of structural and geotechnical design. Andrew was the lead author of the highly successful book Decoding Eurocode 7, which he is currently revising.

PRESENTATION
GROUNDWATER PRESSURES IN THE SECOND-GENERATION EUROCODES

This presentation will explain how groundwater pressures are determined in the second-generation Eurocodes, starting from the definition of a water action in EN 1990 Basis of structural and geotechnical design, and proceeding to simplify the specification for the particular circumstances in which such actions arise in the ground. Techniques for analysing large data sets of groundwater levels will be presented as well as simpler methods for more commonly-encountered sparse data sets. Real-world examples will illustrate the strengths and weaknesses of these methods.

WILL CAPPS
Technical Manager at Lucion Delta-Simons

Will has worked in the Geoenvironmental industry for over 17 years and has experience of operating as a Site Engineer in a wide variety of site scenarios. Throughout these years he has tended to focus heavily on the physical site side of Geoenvironmental Site Investigation including the determination of groundwater and geohydraulic properties.

PRESENTATION
EUROCODE, GROUNDWATER AND GEOHYDRAULIC PROPERTIES, THE NEXT GENERATION

With groundwater being a key component throughout the next generation of Eurocode, understanding and accurately determining groundwater and geohydraulic properties such as pressures and hydraulic conductivity is important. This presentation will aim to refresh, replenish and educate attendees on where we currently are with the standards, with hydrogeological testing methods and considerations to be given when carrying them out and standards that relate to these. The methods presented in the current standards will be given consideration and any potential pitfalls or methods that may cause spurious results examined.

STEVE WILSON
Technical Director at EPG

Steve is a Chartered Civil Engineer and Registered Ground Engineering Advisor. He has over 30 years' experience in the testing, design and construction of infiltration (soakaway) drainage systems. Steve has extensive practical experience of various methods of infiltration and permeability testing. He is one of the authors of the SuDS Manual and the CIRIA Guide to SuDS Construction.

PRESENTATION
INFILTRATION TESTS – THERE ARE BETTER OPTIONS THAN BRE 365

This presentation will explore various methods of infiltration testing that are viable (and in some cases better) alternatives to the BRE365 test. Steve will also dispel some common myths around the use of infiltration such as "it cannot be used within 5m of buildings".

LEN THREADGOLD
Geotechnical Adviser at Geotechnics

Len has over 50 years' experience in geotechnical engineering and site investigation with extensive experience of managing a diverse range of small and large-scale geotechnical investigation projects. He is a Registered Ground Engineering Adviser, panel member of UK RoGEP and was awarded the John Mitchell Medal by the ICE for excellence in geotechnical practice in 2017.

PRESENTATION
GROUNDWATER IN SLOPES AND ITS RELATIONSHIP TO STABILITY

Catastrophic landslides and less spectacular ones are often associated with high rainfalls. However, rainfall is not groundwater until it enters the ground and affects the shear strength of the soils and rocks of which it is composed. Positive porewater pressures reduce the effective stress between soil particles, and hence shear strength, but this applies whether pressure

is from above, below or the side of failure surfaces. It is vital that such sources are identified in attempting to understand mechanisms, causes and consequences as well as devising preventative measures or remediation. The presentation will seek to illustrate these elements with reference to case histories.

DR STEPHEN THOMAS
Founder, Director and Chair at OGI Groundwater Specialists

Dr Stephen Thomas has over 43 years' of experience in the field of ground, groundwater engineering and management, and over 30 publications to his name. He has gained substantial experience from many ground and groundwater projects with over 300 designs of groundwater control, slope engineering & artesian pressure reduction systems. He is a Fellow of the Institution of Civil Engineers, a member of the Executive Committee of the British Geotechnical Association and an Honorary Fellow at the University of Durham. In 2023, Stephen was elected as the Vice-President of the Groundwater Commission of the Portuguese Association of Water Resources.

PRESENTATION
STABILISATION OF STEEP SLOPES IN SATURATED GROUND USING GROUNDWATER CONTROL & PASSIVE DRAINAGE ANCHORS

OGI's client was awarded the contract to construct a deep rectangular wastewater detention tank in Royton, Greater Manchester. The options of construction were constrained by a number of factors including highly variable geology comprising weak alluvium ground with a high-water table, all overlying rock. OGI's solution comprised the combination of active groundwater control to lower the water table using a series of suction wells, together with a system of Platipus Anchors which were enhanced with strong wick type passive drains to reduce the pore water within the slope. The resulting system enabled safe and stable steep slopes and saved the contractor over £250,000 over alternative techniques. This project achieved the 2018 Ground Engineering Award for Technical Excellence.

CLAIRE HOWARTH (SESSION ONE Q&A CHAIR)
Senior Principal Engineering Hydrogeologist at Mott MacDonald

With 23 years engineering and environmental consultancy experience, Claire is the Senior Principal Engineering Hydrogeologist within the Metros and Civils division of Mott MacDonald. She is groundwater technical lead for major D&B infrastructure projects in the UK and overseas (including HS2, Tideway, and Crossrail), and asset management clients (including Eurotunnel).

CHRIS RAISON
Director at Raison Foster Associates

Chris is the owner and one of the founder members of Raison Foster Associates, a Specialist Geotechnical Consulting company working for a range of clients including Main Contractors, Ground Improvement Contractors, Civil and Structural Consulting Engineers. Chris is a member of the AGS Executive Committee and the Geotechnical Working Group. He is also a member of the British Standards Institution B/526 Geotechnics Committee and has been involved in the development, drafting and technical review of the Second-Generation Eurocode with particular involvement in Clause 6 Piled Foundations.

PRESENTATION
SECOND-GENERATION EUROCODES – DEALING WITH THE CHEMICAL EFFECTS OF COMMON GROUNDWATER SOLUTES ON STRUCTURAL CONCRETE

A very brief step through some of the updated rules and requirements of BS EN 1992-1-1:2023, FprEN 1997:2024, other British Standards and BRE SD1, and how AGS members can provide the required input and guidance for assessing groundwater.

DR MAJDI MANSOUR
Groundwater Modeller at the British Geological Survey

Dr Majdi Mansour is a Civil Engineer by training with 22 years' experience in the field of groundwater modelling and research. His work focuses on the development and application of numerical solutions to study groundwater water resources under changing climate conditions and investigating the role of groundwater on landslides and coastal erosion.

PRESENTATION
GROUNDWATER EXTREMES UNDER CLIMATE CHANGE

Sustained periods of dry or wet weather can lead to excessive lowering of the water table (groundwater drought) or rising of the water table above the land surface (groundwater flooding). Groundwater level extremes have a relatively long duration which exacerbates their impact. The frequency and severity of groundwater extremes in the UK will change in an increasingly warm and variable climate. This presentation will analyse the kinds of changes we expect to see over the 21st century across the UK, drawing on the latest state-of-the-art groundwater forecasts produced at the British Geological Survey.

SPEAKERS & PRESENTATIONS

CLIVE EVERETT
Technical Claims Surveying Manager at National House Building Council (NHBC)

Clive has 39 years' of diverse experience in the construction industry. He has previously worked as Façade Technical Director at LABC Warranty & Premier Guarantee, and Technical Director at Saint Gobain and Façade Director at global multidisciplinary engineering consultancy practices CBRE, Ramboll and Gifford.

Clive has extensive technical knowledge and project management delivery experience. He has supplied solutions to a wide range of complex projects in new build and refurbishment sectors, supporting the residential, commercial, education, and transportation industries.

PRESENTATION
WHATDUNNIT (BASEMENT FAILURES)

A Façade Consultant talking about basements! – what could possibly go wrong? The Whatdunnit basement failure presentation will take the audience through the investigation journey of several residential basement failure case studies, where things were not always what they seemed to be, and where determining the causation became the main challenge.

DR MARTIN PREENE
Technical Director at Coffey Geotechnics

Dr Martin Preene is a Chartered Civil Engineer and Chartered Geologist with more than 35 years' experience in groundwater control, having worked on projects in more than 40 countries. He is a past Chair of the British Geotechnical Association and in 2021 was awarded the John Mitchel Medal by the Institution of Civil Engineers for Excellence in Geotechnical Practice.

He is the author of more than 80 papers and publications, including a dewatering textbook and several industry guidance documents on the investigation and control of groundwater.

PRESENTATION
CHALLENGES OF PERMEABILITY ASSESSMENT FOR GEOTECHNICAL PURPOSES

Permeability (also known as hydraulic conductivity) is a fundamental parameter in the analysis of many geotechnical processes including consolidation, groundwater inflow to excavations and migration of contamination. Unfortunately, permeability is a challenging parameter to assess; even on a site with a simple conceptual model, permeability values within the dataset can vary by several orders of magnitude. This could reflect geological variability but is often also influenced by limitations in the various permeability testing methods. This presentation will discuss the available methods to assess permeability values and propose approaches to allow datasets can be used to develop realistic values for use in design.

STEPHEN WALTHALL
Retired Engineering Geologist

Steve is a Chartered Geologist and a Chartered Scientist with over 50 years' experience in engineering geology, geotechnical engineering and hydrogeology. After working for GI contractors, he spent many years as a hydrogeologist responsible for the detailed investigation of water supply aquifers. He then continued his career in geotechnical engineering working on large scale infrastructure projects in the UK, Europe and the Middle East. He is a founding member of the AGS Data Management Working Group.

PRESENTATION
INTRIGUING OBSERVATIONS AND THEIR SIGNIFICANCE IN GROUNDWATER MANAGEMENT

This will be a presentation "from the backwoods", i.e. a walk through a number of projects (in career order) where various intriguing observations were made, the investigation and science behind them and their long-term significance in understanding the ground. The presentation will combine hydrogeology, engineering geology, geotechnical engineering and construction. These will include such elements as observations made during the long-term monitoring of groundwater observation networks, deep borehole packer testing, large scale pumping tests, groundwater modelling and their application to groundwater control during the construction phase.

GEORGINA DONBROSKI (SESSION TWO Q&A CHAIR)
Director – Technical and Quality at RSK Geosciences

Georgina is a Chartered Civil Engineer with 25+ years' experience in the water and then geosciences sectors. In 2021, Georgina became Technical Director for RSK Geosciences, overseeing the Technical, Quality and Data strategy for the 350 strong geotechnical and geo-environmental consultancy business. Georgina is a member of the AGS Geotechnical Working Group.

UPCOMING LIVE & VIRTUAL EVENTS

AGS WEBINAR — A CLIENT'S GUIDE TO CONE PENETRATION TESTS

Date: 29th January 2025
Time: 11:00 – 13:00
Price: Registration is FOC for AGS Members and £50 for Non-Members. Prices exclude VAT.

Join webinar Chair, Emma Bell (Senior Technical Engineer at Socotec) and our four expert speakers as they provide an introduction to the Client's Guide to Cone Penetration Tests (CPTs), highlighting each section and the pertinent points within it.

This online event, taking place on 29th January, will be supported with case studies and personal practical experience from the presenters, and will provide a strong introduction to the concepts and terminology surrounding CPTs whilst highlight the usefulness of the new guide.

To register for the event, or for further information on the scan the QR code.

SPONSORSHIP

We have both Headline and Associate Sponsorship packages available for companies who wish to have a presence during the live webinar and recording. Prices start from just £150 for AGS Members. For package details please email Caroline Kratz on **ags@ags.org.uk.**

AGS ANNUAL CONFERENCE 2025

Date: Thursday 1st May 2025
Time: 09:15 – 20:30
Location: One Great George Street, London
Price: A limited number of complimentary tickets are available for AGS Members. Additional tickets are priced at £115 for AGS Members and £185 for non-AGS Members. Prices exclude VAT.

We're pleased to announce that the AGS Annual Conference will return once again to One Great George Street in London's Westminster this spring.

Chaired by Vivien Dent, this full day, CPD event will feature a series of expert speakers from across the geotechnical and geoenvironmental sector, each presenting on a topic with an overarching theme of The Future. The conference will also include short reports from each of the AGS Working Group Leaders which will summarise their aims and accomplishments over the past 12 months.
The day will conclude with a networking drinks and canapé reception.

To register for the event, or for further information regarding the conference and our available sponsorship opportunities, please scan the QR code.

Projects for Nature

The AGS will be donating a percentage of the surplus generated from the We Need to Talk About Groundwater conference to Projects for Nature which is an initiative that aims to restore nature recovery in the UK.

We know a healthy natural environment is essential for mitigating climate change, protecting biodiversity, and supporting human life, yet the UK is one of the most nature depleted countries in the world. We need to turn a corner towards protecting and restoring nature by recognising its value and supporting its path to recovery.

Projects for Nature was formed by the Council for Sustainable Business, Accenture, Defra, Natural England, Environment Agency and Crowdfunder to help bridge the nature funding gap and accelerate urgently needed nature recovery in England. It was launched by the Secretary of State at COP28 and is a pioneering platform that connects corporate donors with nature recovery projects across England that have been initially funded by Government and screened by its agencies.

Projects for Nature believes that we need to turn a corner towards protecting and restoring nature by recognising its value and supporting its path to recovery.

For further information please visit **www.projectsfornature.com**

SPONSORS

GEOSENSE

Geosense is an award-winning UK manufacturer of instrumentation for the design and construction of earth structures, basements, foundations, and linear infrastructure. Our range of sensors and data acquisition systems provide reliable real-time data. With over 30 years' experience, Geosense products have been on major projects including HS2 and the Lower Thames Crossing.
www.geosense.co.uk

SOIL ENGINEERING

Soil Engineering's high-quality investigation, testing, instrumentation and monitoring services can provide valuable insight into a site's ground and groundwater conditions. Our grouting capabilities can deliver excellent groundwater control. So, talk to us, and explore the optimum combination of our capabilities to de-risk your next project.
www.soil-engineering.co.uk

GROUNDSURE

Groundsure provides essential data to gain insights on environmental risks for site assessment and development. Our unrivalled library includes the largest historical land use data, unique datasets, current and historic mapping. Now with groundsure.io, our consultancy and geotechnical clients can integrate site risk data into their project workflow seamlessly and easily.
www.groundsure.com/land-use-data-and-map-packs

NORMEC DETS

Normec DETS provides leading analytical services for the environmental, construction, waste, fuel and engineering industries and is accredited to ISO 17025 and MCERTS for soils and waters.
Our dedicated team can also provide bespoke reports such as AGS, HWOL and CSV to help you process your analytical data.
www.normecdets.com

AFITEXINOV UK

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Geospatial data unlocks value by providing property and environmental insight to help you make the right decisions for your clients. Landmark Geodata offers a range of data products and expert-led services that are informed by decades of experience and designed to give you the clarity to drive every project forward with confidence.

www.landmark.co.uk/geodata-services

BAM RITCHIES

BAM Ritchies are the award winning SMARter Ground Engineering contractor with over 60 years' experience. We've built a reputation as the go-to ground engineering team for complex problem solving and best-value, sustainable delivery. We use industry-leading digital construction methods to stage digital rehearsals, so you'll know exactly what to expect from your project.

www.bamnuttall.co.uk/groundengineering

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HUESKER is a market leader in the manufacture of geosynthetics. Its products and services provide solutions for business areas such as earthworks and foundations, roads and pavements, environmental and hydraulic engineering. Our range of innovative products makes us an ideal partner for Contractors, Consultants and Clients alike.

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i2 Analytical offers extensive analytical services encompassing environmental, geotechnical, water analysis, and air testing for various industries. Complemented by exceptional customer service, i2's streamlined logistics ensures a timely and reliable collection service. i2 prioritises client needs, delivering accurate results and expert guidance for informed decision-making and regulatory compliance. **www.i2analytical.com**

ENVIROLAB

Envirolab is a BS EN ISO/IEC 17025 and MCertS accredited laboratory, based in Hattersley, UK, that has provided analytical services on soil and water for over 25 years. Envirolab do not negotiate on quality, the highest standard is set every time.

Contact Envirolab on 01613684921 or ask@envlab.co.uk
www.envlab.co.uk

PROGRAMME

09:00 REGISTRATION

09:30 OPENING ADDRESS
Vivien Dent, AGS Chair and Technical Specialist: Green Growth and Delivery at the Environment Agency

SESSION 1

GROUNDWATER PRESSURES IN THE SECOND-GENERATION EUROCODES
Dr Andrew Bond, Director at Geocentrix

EUROCODE, GROUNDWATER AND GEOHYDRAULIC PROPERTIES, THE NEXT GENERATION
Will Capps, Technical Manager at Lucion Delta-Simons
Scan the QR code to participate

INFILTRATION TESTS – THERE ARE BETTER OPTIONS THAN BRE 365
Steve Wilson, Technical Director at EPG
Scan the QR code to participate

10:50 REFRESHMENT BREAK

GROUNDWATER IN SLOPES AND ITS RELATIONSHIP TO STABILITY
Len Threadgold, Geotechnical Adviser at Geotechnics

STABILISATION OF STEEP SLOPES IN SATURATED GROUND USING GROUNDWATER CONTROL & PASSIVE DRAINAGE ANCHORS
Dr Stephen Thomas, Founder, Director and Chairman of OGI Groundwater Specialists

Q&A DISCUSSION WITH SESSION ONE SPEAKERS
Chaired by Claire Howarth, Senior Principal Engineering Hydrogeologist at Mott MacDonald
Scan the QR code to submit your questions

12:50 LUNCH

SESSION 2

SECOND-GENERATION EUROCODES – DEALING WITH THE CHEMICAL EFFECTS OF COMMON GROUNDWATER SOLUTES ON STRUCTURAL CONCRETE
Chris Raison, Director at Raison Foster Associates

GROUNDWATER EXTREMES UNDER CLIMATE CHANGE
Dr Majdi Mansour, Groundwater Modeller at the British Geological Survey

WHATDUNNIT (BASEMENT FAILURES)
Clive Everett, Technical Claims Surveying Manager at National House Building Council (NHBC)

14:45 REFRESHMENT BREAK

CHALLENGES OF PERMEABILITY ASSESSMENT FOR GEOTECHNICAL PURPOSES
Dr Martin Preene, Technical Director at Coffey Geotechnics

INTRIGUING OBSERVATIONS AND THEIR SIGNIFICANCE IN GROUNDWATER MANAGEMENT
Stephen Walthall, Retired Engineering Geologist

Q&A DISCUSSION WITH SESSION TWO SPEAKERS
Chaired by Georgina Donbroski, Director – Technical and Quality at RSK Geosciences
Scan the QR code to submit your questions

CLOSING ADDRESS
Vivien Dent, AGS Chair and Technical Specialist: Green Growth and Delivery at the Environment Agency