



Friday, 29th September 2023



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ARUP

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BTSYM Conference 2023 Full Programme

80 Charlotte Street, Fitzrovia, London W1T 4QS

<https://britishtunnelling.com/events/conferences/btsym-conference-2023>

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Message

from the YM Chair

Dear Young Members, Colleagues
and Friends of the Tunnelling and
Underground Space family,

It is with great pleasure, on behalf of the British Tunnelling Society (BTS) and its Young Members group, to welcome you to the BTSYM Conference 2023. The BTSYM Conference is honoured and proud to be hosted, for the first time ever, in a brand new and outstanding venue. Being an event that focuses primarily on the young talent across the industry, it has always been embraced and supported by numerous industry leading organisations.

BTSYM is committed to bringing the young tunnellers together and help them establish long-lasting professional relationships within the UK and overseas. I feel sincerely proud and extremely humbled to have worked alongside the members of the BTSYM sub-committees to organize a successful conference and memorable day.

I am looking forward to meet you in person on the 29th of September.



George
Doulkas

BTSYM Chair 2023

Conference

Essentials



About this event

This is a conference about tunnel design and construction, organised and presented by under-35 industry professionals.

Growth & Success

By attending this full day event, you can take some time to break away from the daily routine and surround yourself with thought provoking peers that will have you talking about all the fresh ideas and strategies currently at play. Educational Opportunities & Industry Expertise Immerse yourself in four unique Technical Sessions on the latest UK industry updates and international topics. Our Speakers, chosen for their contribution to the tunnelling industry and ability to connect with the audience, will broaden your insight and share knowledge that you can apply in your day-to-day operations.

Real Value & Take-home learnings

Immerse yourself in discussions on real-life project performance. By keeping the conference focused, we bring together developmental opportunities and keep your conference learning experience dedicated only to the issues that matter most. Share your new-found knowledge with your co-workers and management team, and watch your team soar!

Attend, Learn, Network, Engage

More is better. Networking refreshment breaks and interactive closing events will complement the technical sessions. Nowhere else can you connect with such a diverse audience of like-minded goal-driven professionals in such an enjoyable way.



How much is it?

Free for BTSYM individual members - registration is required.

Further information on becoming BTSYM member available on the BTS Website.

Registration fee £65 for non-BTSYM members.



How to book

STEP 01

Register as a BTS Young Member

Visit <https://britishtunnelling.com/membership/btsym-membership> to join the BTSYM if you're not already a member. The subscription is billed at the same time as your ICE fee.

STEP 02

Register for the conference

Book your attendance at <https://britishtunnelling.com/products/btsym-conference-2023>. If you qualify for the YM rate, please check out using the 'invoice method'. You will not be charged.

STEP 03

Profit (from the knowledge)!

That's it! We're looking forward to seeing you on Friday, September 29th.

Location

Where to go



✓ Central location

Hosted at Arup's offices in London, the venue is easily accessible from all directions

✓ Breakfast, lunch & networking

Breakfast and lunch are provided, giving you an opportunity to network with other YM for the tunnelling industry.

Address:

ARUP
Offices

80 Charlotte Street, Fitzrovia, London W1T 4QS

E-mail:

btsym@britishtunnelling.com

Special Guest

Keynote speaker



Michael Devriendt

Associate Director, Transport Group, Arup

Keynote title:

Automated tunnel inspection and predictive maintenance

Mike is an Associate Director working in Arup's offices in London. He has over 25 years experience working predominantly in the geotechnical and tunnelling sectors. His project experience has included leading large multi-disciplinary design teams on projects such as Crossrail 2, HS2 and a range of commercial and residential building projects.

In recent years, Mike has been leading a number of projects focused on implementing hardware and software systems to automate tunnel inspection and support tunnel maintenance decision making. Through phased development stages, these projects have implemented, 'business as usual' systems that improve tunnel operator/maintainer's asset management processes. The projects have involved working alongside partners such as CERN, Network Rail (High Speed), Metrolinx, National Grid, UKPN and the Universities of Cambridge and UCL. To achieve successful outcomes on these projects, Arup have applied new technologies such as photogrammetry, machine learning, laser and thermal scanning to achieve health and safety benefits and operational cost and programme savings for infrastructure maintainers.

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Programme

September 29th | 2023

Registration, breakfast and opening

08:30 – 09:30 **Registration and breakfast**

09:30 – 10:00 **Opening and Keynote Lecture by Arup**

Session 1: **Tunnel design in the UK**

Chair: George Doulikas

10:00 – 11:15 **Tunnelling and the Great Grid Upgrade**

Nicholas McCrossan - Mott MacDonald

Pipe Jacking: Design, benefits, and limitations

Bryn Phillips - Ward and Burke / Pipe Jacking Association

Computational excellence in Thames Tideway CAT3 checks

Negin Dolatraftarhaghighi - Ramboll

Status update of Silvertown Tunnel Project Cross Passages

Michael Tinney - Gall Zeidler

Health & Safety and lessons learned on Shaft Access

François Hubert - XL Industries & Hochtief

Q&A

11:15 – 11:30 **Break**

Session 2: Tunnel construction on High Speed 2

Chair: Arabel Vilas

11:30 – 13:00 TBM and STP Selection for the Chiltern Tunnels

Chris Prince - Align JV

Long Itchington Wood Bored Tunnel: Performance of Variable Density Machine in Mercia mudstone

Thomas Townsend - Balfour Betty Vinci JV

A holistic overview of Atlas Road Logistics Tunnel construction

Divik Bandopadhyaya - Skanska Costain Strabag JV

Janagan Nithiananthan - Skanska Costain Strabag JV

Transforming Pre-cast construction via an innovative approach

Dinesh Sharma - Bouygues UK

References and workmanship specification in the field of tunnel waterproofing

Enrico Pavese - Renesco Holding AG

Q&A**13:00 – 14:00 Networking Lunch Break**

Session 3: Innovation and Sustainability in Tunnels

Chair: Benjamin Lafarga

14:00 – 15:30 **Improved TBM Navigation using AI**

Nicole Mattburger - VMT GmbH

Machine learning for tunnel condition assessment

Jack Smith - University of Leeds

Enhancing Sustainability through Maintenance and Rehabilitation of Infrastructure

Muhammad Junaid Bokhari - Atkins

Low Carbon Precast Segments with High Performance Steel fibres

Ben Vanheuverzwijn - Bekaert

Earth friendly concrete

Kaja Kacperska - Hochtief Murphy JV

Q&A

15:30 – 15:45 **Break**

Session 4: Design methodologies and construction techniques in Tunnels

Chair: Sandeep Nirmal / George Doulikas

15:45 - 16:45 **Challenging Toronto Ground Conditions for Underground Designs**

Enrique Alcanda Renquel - Mott MacDonald

Hybrid solution for permanent lining nozzle enlargements mined tunnels

Adrian Salas - Tyspa

LPT2: Ground Movements, Monitoring & Third Party Interfaces

Jake Johnson - Hochtief Murphy JV

Face Stability calculations from First Principles

Avantika Raj - Dr. Sauer and Partners

Q&A

16:45 - 17:00 **Conference Closing**

Family Photo

17:00 - late **Post Conference Social**

Networking event and talk by representatives of Itacus, Construction Youth Trust and Tunnelskills

Our Speakers

Your fellow YM

Nicholas McCrossan

Principal Tunnel Engineer - Mott MacDonald Ltd.



Nick is a Principal Tunnel Engineer with ten year's post graduate experience of major transportation, electricity and utility infrastructure projects in the United Kingdom and United States including Thames Tideway East Package, High Speed 2 Phase 1 Area North, and the Northern Line Extension to Battersea.

Bryn Phillips

Engineer - Pipe jacking assoc. & Ward and Burke Constru.



Bryn Graduated the University of Oxford in 2016 with a General Engineering degree. Since then, he has been working for Ward and Burke Construction on a variety of tunnelling projects including the 1241m Castlerigg tunnel as parts of United Utilities' West Cumbria Water Supplies scheme and both the shallow cover slurry TBM tunnel and 40m deep back actor excavated tunnel at the Thames Tideway Putney site. He has also been an active member with the PJA for the last 5 years helping to develop the technical and research activities of the organisation.

Negin Dolatraftarhaghghi

Graduate Engineer, Tunnel & Underground Space - Ramboll



Negin is a graduate engineer with two years' experience. She joined Ramboll after graduating from University College of London with a distinction in Civil Engineering. During her time in Ramboll Negin has spent time on various projects namely: Thames Tideway CAT3 checks, Barking Riverside Extension (Monitoring), Silvertown CAT3 checks and more. Negin is also a driver of Ramboll sustainability initiatives in Tunnel and Underground team as well as the wider company Strategy with a focus on being the leading force in sustainability and regenerative design solutions.

Michael Tinney

Senior Engineer - Gall Zeidler Consultants



Michael is a designer by trade and fills the role of DSR/Design Coordinator on the Silvertown Project. He has worked in the US and UK on underground construction projects ranging in deep shafts, SCL tunnels, pipe jacked tunnels, as well as more traditional geotechnical engineering projects including dewatering and slope stability assessments.

François Hubert



Director, XL Industries Limited

For over 10 years he has been delivering smart access solutions to challenging projects within construction and civil engineering.

After his first five years with XL in France, Francois moved to London to assist with the UK operation. Covering projects ranging from the heights of Canary Wharf to the depths of the London power tunnels access shafts, Francois has strived to help improve access solutions and health and Safety at Work.

Chris Prince



STP and WTP Engineer - Align JV

Chris joined the C1 Align project in June 2021 as a Graduate STP engineer, his first job in tunnelling, having Graduated from Loughborough University with a Masters Degree in Civil Engineering. After over 2 years on the project he completed the Bouygues Graduate scheme and his scope has increased to incorporate the Water Treatment Plant.

Thomas Townsend



Tunnels Design Manager - Balfour Beatty Vinci

Tom has 10 years post graduate experience on major tunnelling projects across the United Kingdom and Middle East. For the last 2 years Tom has been the Tunnels Design Manager for Balfour Beatty Vinci responsible for Long Itchington Wood Bored Tunnel & Bromford Bored Tunnel.

Divik Bandopadhyaya



Senior Tunnel Engineer, Atlas and Euston Tunnels - SCS JV

Divik has an MSc in Tunnelling and Underground Space from the University of Warwick, and works for London Bridge Associates Ltd. Having spent time working on major UK projects, such as Tideway and Hinkley Point C, since 2022 he has been seconded to Skanska Costain STRABAG JV (HS2 Lots S1 & S2) as the Senior Tunnel Engineer initially working on Northolt Tunnels West, and currently on Atlas Road & Euston Tunnels.

Janagan Nithiananthan



Tunnel Construction Manager, S1 Tunnels - SCS JV

Janagan holds an MSc in Civil Engineering from Nanyang Technological University Singapore and has accumulated over 12 years of experience in the tunnelling. He started his career in Singapore, on the LTA Down Town Line project, and progressed within LTA as a Deputy Project Manager. In 2020, Janagan moved back to the UK, working with Morgan Sindall on Werrington Grade Separation (Curved Jacked-box); following which, he joined Skanska Costain STRABAG JV (SCS JV). He is currently a Senior Tunnel Agent with Costain, whilst serving as the Tunnel Construction Manager for Atlas Road Logistics Tunnel and Euston Tunnels for SCS JV.

Dinesh Sharma



Tunnel Precast Engineer – Bouygues UK

Dinesh is graduated engineer from Kingston University London in 2022 with master's degree in Structural Design and Construction Management. Soon after, he started his professional career with Bouygues UK. Currently, Dinesh is positioned as a Tunnel Precast Engineer on C1 section of HS2, where he is directly involved with the manufacturing process of the precast segments for the Chiltern tunnels.

Enrico Pavese



Project Coordinator – Renesco Holding AG

Enrico is a waterproofing expert, specialising in waterproofing and injection products, for underground construction as well as providing required support to all parties (owner, designer, contractor) involved in the project, as per guidelines for respective country. Extensive chemical and industrial knowledge developed through previous position as Sales Engineer for Mapei (HQ Underground Construction Division) from 2014 to 2021 working on international underground structure and infrastructure projects.

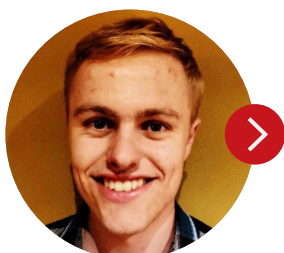
Nicole Mattburger



Sales Manager – VMT Germany

Nicole graduated University in Aalen Germany and is very passionate about new technologies. Her career journey has so far covered automotive, meteorology and Pharma Industries. She joined VMT because the tunnelling world is a very interesting industry with a lot of exciting fields to work in. At VMT she completed the British Tunnelling course in Warwick University which and has since been an engaged BTS member. She is passionate about innovation and bringing about revolution in the tunnelling industry and underground navigation one project at a time.

Jack Smith

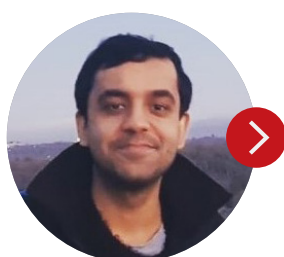


PhD Candidate – University of Leeds

Jack Smith graduated with a degree in Engineering Science from the University of Oxford with a specialisation in Civil Engineering. Supervised by Dr Chrysothemis Paraskevopoulou, he is currently studying for a PhD at the University of Leeds in the school of Earth and Environment. With industrial support from Bedi Consulting Ltd, Jack is using deep learning to investigate how new technologies can be applied to improve the condition assessment process of historical masonry lined tunnels.

Muhammad Junaid Bokhari

Tunnel Engineer – SNC Lavalin/Atkins



Muhammad is a tunnel engineer with a background in civil engineering. Over 4 years at Atkins he's had an opportunity to work on the design of tunnels in hard and soft ground, both in the UK and abroad. He is passionate about engineering a better future for our planet and its people. He is involved in the rehabilitation of masonry tunnels, both professionally and academically. He has published a paper in WTC on this topic which is titled "Insight into Modelling Techniques for the Analysis of Masonry Tunnels".

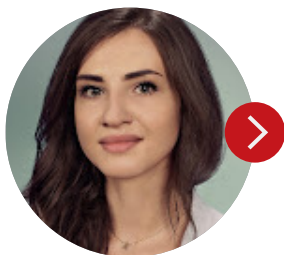
Ben Vanheuverzwijn



Area Sales Manager Southeast Asia – Bekaert

Ben has a MSc in Civil Engineering from Ghent University and UPC Barcelona. His experience at Bekaert includes Sales manager Dramix steel fibres Belgium – focusing on industrial flooring segment; Sales Engineer – technical support steel fibre solutions with focus on Benelux and Scandinavia; Business Development Manager – developing rafts segment with steel fibre solutions in Benelux and UK and developing new underground solutions; Area Sales Manager Southeast Asia – commercial lead for Dramix steel fibres in Southeast Asia for overground applications.

Kaja Kacperska



Section Engineer – Hochtief UK

Kaja completed a BSc(hon) in Civil Engineering in Cracow University of Technology in Poland in 2018 and started to work for Hochtief UK straight after. For the last 3 years she has been working on the London Power Tunnels 2 project as part of Hochtief Murphy JV. During this time, she contributed to successful delivery of multiple shafts, tunnel portals and headhouse building works. She was also involved in testing and implementing both temporary and permanent works cement free concrete.

Enrique Alcanda Renquel

Tunnel Engineer – Mott MacDonald Spain S.L



CEng MICE, MSc Civil Engineer with 8 years' experience in structural and tunnelling projects. Project site experience as a project engineer in the Parallel Thimble Shoal Tunnel Project in Virginia (USA). Since 2020 he has been working in Mott MacDonald Spain designing tunnel structures excavated in rock and soil grounds. Shafts designs, SEM Cavern design and Building Settlement Assessment both with empirical and Finite Element Analysis among other tasks.

Adrian Salas

Structural engineer – TYPSA



Adrián is currently working as Structural Engineer in TYPSA and has 6 years of experience in projects based in Canada, Australia, Spain, Portugal, and Ecuador. He has a Bachelor's Degree and a MSc in Civil Engineering from the Technical University of Madrid. Throughout his academic and professional career, he has specialised in the analysis and design of all types of structures in the field of civil engineering and buildings, participating in a wide variety of projects in close collaboration with architectural and construction companies, and intervening in large building projects, bridges and underground works.

Jake Johnson

Section Engineer – Hochtief–Murphy Joint Venture (HMJV)



Jake studied a masters in civil and environmental engineering at the University of Leeds and undertook post-graduate research in carbon accounting. He joined Murphy's graduate cohort in 2019 and worked within Network Rails CP6 Anglia framework on Earthworks projects, first as a design co-ordinator and then as a site engineer. For the past 2 years he's been working on LPT2 primarily managing the third party interfaces and monitoring works, as these works are now complete he's now involved in permanent and temporary works design management and site management works.



Photo courtesy of Bekaert

Thank you!

 **BTSYM CONFERENCE
2023**

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Keep in touch:
Scan to join the
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