ITA-CET
Committee on Education and Training

Newsletter
Issue 21
October 2026



Dear ITA friends,

We are sure you will all agree that the World Tunnel Congress in Montreal earlier this year was a resounding success, thanks to the hard work of our Canadian hosts, the ITA team and all those who played an active part in this major international event.

It was great to meet up with so many men and women passionate about the underground and eager to share their knowledge with their peers. Indeed, knowledge sharing is at the very heart of the ITA and following a long-standing tradition, the WTC kicked off with a two-day training session which brought together an impressive line-up of speakers from around the globe. You can find out more in our article.

The WTC was also a chance for members of the ITA interested in our training activities to come together and discuss Member Nation training requirements, the development of blue-collar skills, academic courses and news on training and research facilities. Our article on pages 4 and 5 takes a closer look at what was discussed in this annual meeting.

The Lunchtime lecture series continues to attract an ever-growing audience and in this issue we take a closer look at the profile of the participants.

The ITA-CET university network has remained active and on the 1st and 2nd July held the fourth edition of its PhD students conference in Bochum, Germany. Check out our article for more details.

Training for Member Nations remains a core objective of ITA-CET and on pages 10 and 11 you can find out about the two-day course recently organized for AMITOS, the Mexican association of tunnelling and underground space.

Finally, in this issue we take the opportunity to present two new members of our Steering Board, who we are delighted to have on our team!

Indeed, we are always ready to welcome new members to our committee, either through our university network or in our other activities. If you are interested in joining us, don't hesitate to contact our secretariat!

Robert Galler and Michel Deffayet
(Committee Chair and Vice chair)

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For more information

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http://www.ita-aites.org/en/wg-committees/committees/ita-cet



A wealth of knowledge at the *WTC training course*

Over 110 participants took part in this two-day event held on 15th-16th May in Montreal. We take a look back at some of the highlights.

Although the WTC training course is traditionally held prior to the official opening ceremony, it is considered an integral part of the congress and over the years has become a high-profile educational event for both young engineers and more seasoned professionals alike.

As well as sharing the latest knowledge in the field, these courses aim to challenge thinking and spark discussions among participants by highlighting the current and future challenges faced by the tunnelling and underground space community.

This year's two-day course was held on 15th-16th May in Montreal and organized by the Tunnelling Association of Canada (TAC) in partnership with the ITACET Foundation, the ITA-CET Committee, Mott Macdonald and Lovat Tunnelling Solutions. This sold-out event brought together a world-class lineup of speakers from around the globe, including prominent ITA members.

Under the theme "*Building the Future – Delivering Tunnel Projects for the Next Generation*", the programme was split into four consecutive sessions and provided a dynamic mix of case studies, round table sessions and networking opportunities. The objective was to provide the participants with an overview of the complete life cycle of underground projects.

The first session therefore logically kicked off with a look at site investigation and geo-characterisation, highlighting the importance of understanding ground conditions prior to design. The consequences of inadequate site investigations were stressed and the presentations demonstrated how early decisions influence project outcomes.

Session 2 took a look at the choice of excavation methods and ground control methodologies, showing how ground behaviour drives design and construction decisions, with several case studies from high-profile projects around the world.

The following session moved onto contracting and delivery methods. With project delivery models evolving worldwide, the aim of this session was to help participants understand risk allocation, collaboration frameworks, and how procurement shapes technical outcomes. Case studies from major international infrastructure projects provided the participants with concrete examples.





The final session focused on safety, sustainability and innovation, in a context where the industry is striving to adapt lower-carbon solutions, discovering the potential benefits of artificial intelligence and machine learning in tunnel engineering and is faced with the challenge of rehabilitating aging tunnels.

An informal evening get-together followed the course, enabling the 110 participants from 28 different countries to network and continue discussions with the speakers in a relaxed an informal setting. The ITA-CET Committee and ITACET Foundation wish to thank our Canadian hosts for their efficient organization which made this event a resounding success!

Industry roundtable
on training and education



An open meeting during the WTC enabled the ITA community to promote ongoing activities in training and research, voice suggestions for new training actions and identify possible future collaborations.

The ITA-CET Committee and ITACET Foundation continuously strive to adapt their strategy to the needs of the industry as a whole. As part of this approach, an invitation to a meeting on ITA training actions was extended to other Committees, Working Groups, Executive Council members and Member Nation representatives during the WTC in Montreal, in order to provide updates on ongoing actions and better identify training requirements for both white and blue-collar professionals around the globe.

With a meeting room close to full capacity, the 35 participants included both academia and industry representatives. Open discussions focused on a number of issues, starting with training organised for Member Nations. Updates were provided on sessions organised in collaboration with Nepal and Mexico and the attendees were reminded that the ITA-CET Committee and ITACET Foundation can provide tailor-made online or face-to face training sessions on request. These sessions can be standalone or organised within the context of a wider event, such as a national tunnel congress.

Any interested Member Nations are invited to contact either the ITA-CET Committee or the ITACET Foundation secretariat to express their needs. A portfolio of topics is available on the ITACET Foundation web site, but additional topics can be envisaged and programmes adapted as necessary, either in terms of content or duration.

Various local training initiatives are being developed by some Member Nations, notably in Asia. During the meeting, Pakistan presented its Tunnelling Institute which has developed a "Tunnel Talk" webinar series, in addition to a university outreach programme and various workshops. Collaboration with ITA-CET on a micro-tunnelling course is also envisaged.

An example of another initiative can be found in India's Centre of Excellence for Tunnelling and Underground Construction which aims to bridge the gap between white and blue-collar training by providing a platform for applied research, hands-on training, and technology development.

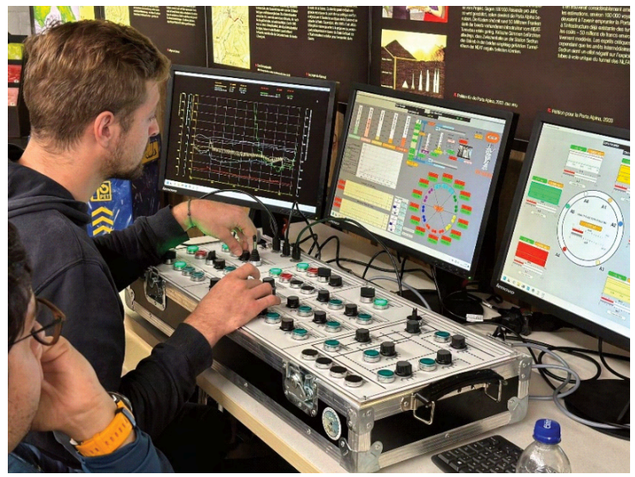
As for the lunchtime lecture series, it continues to attract a wide audience from around the globe (see our detailed article on pages 6 and 7). Various suggestions for new topics were put forward during the meeting, such as "ITAtech guidelines on segmental lining and pipe jacking", "ground investigations in karstic conditions" and the use of AI, BIM and digital twins in tunnelling.

In terms of blue-collar training requirements, the ITA-CET Committee and ITACET Foundation presented the "global training initiative", the aim of which is to :

- identify a list of priority training topics after consultation with stakeholders and industry;
- team up with ITAtech and interested training entities around the globe to develop "train-the trainer" concepts that can then be rolled out in identified countries;
- offer courses at ITA-endorsed training facilities globally (after identifying minimum endorsement requirements);
- develop pedagogical content on existing ITA publications and material.

It is currently difficult for ITA-CET to ascertain what training facilities exist around the globe and therefore to contact entities that may be potentially interested in this initiative.

Some project-specific academies have already been largely mediatised, such as the Victoria tunnelling centre in Australia and TUCA in the UK. Other non project-specific and more permanent blue-collar training facilities exist, such as ZaB – Zentrum am Berg, in Austria, or the Hagerbach Test Gallery in Switzerland, but a more comprehensive view of such facilities around the globe is needed. Member Nations will therefore shortly be contacted in order to obtain more information on current blue-collar training facilities in their respective countries.



Simulator used during the EFNARC TBM pilot course at the Hagerbach Test Gallery, Switzerland

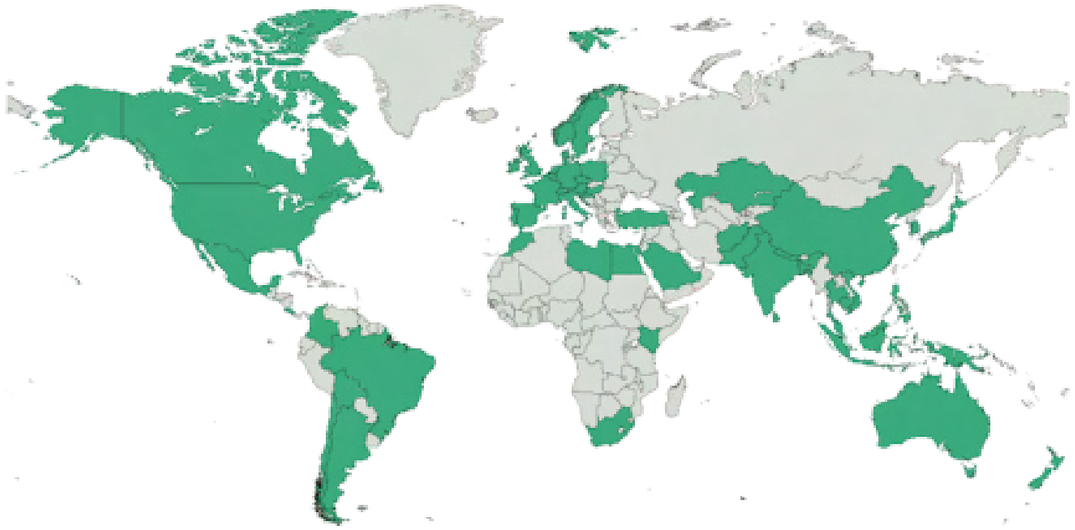
The meeting in Montreal was also a chance for the ITA-CET university network to present its latest news, notably on the PhD students conference in Bochum (see pages 8 and 9 for details) and on new research facilities. In Norway, the CISU research centre for innovative and sustainable underground is led by SINTEF, and aims to help shape the cities of the future by enabling smarter, safer, and more sustainable use of the subsurface. The centre is funded by the Research Council of Norway. Collaboration with members of the ITA-CET University network could be envisaged in the future, as the centre will be welcoming PhD students.

Also recently launched is the Centre for Infrastructure and and Tunnel Engineering in Singapore which conducts and facilitates applied research to augment safety standards in the design, construction, operation and maintenance of tunnels, and other civil engineering.

These fruitful discussions showed the considerable interest of the ITA community in supporting training and education actions, highlighted new topics for which training actions could be developed and potential avenues for future collaboration with ITA-CET.

The Committee and Foundation would like to thank all those who participated for their constructive input!





Global success for the *lunchtime lecture series*

The remarkable level of interest in the lunchtime lecture series can be seen through its ever-growing audience, but who are the participants and where do they come from ? Let's take a closer look..

Over the last year more than 8,000 members of the international tunnelling and underground space community have registered to attend the ITACET lunchtime lecture series. As the map above shows, the audience spans all continents and is a good reflection of current tunnelling activities around the globe.

This truly global outreach is largely down to the fact that although the live session is at 13: 00 CET, each episode can be streamed afterwards for a four-week period. This enables participants to benefit from the free webinars at their leisure and no matter where they are based in the world.

On average, over the period June 2025 to July 2026, an average of 71 countries attended each webinar. Although participant figures per country vary according to the topic presented, in general the countries which tend to have the most viewers are France, India, Australia, Canada, Spain, the UK and the USA.



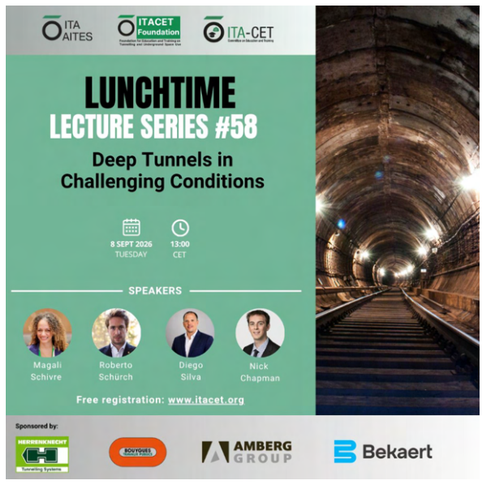
Whilst word of mouth obviously helps to attract viewers, participant figures at a local level also depend on strong support from ITA Member Nations and both the ITA-CET Committee and ITACET Foundation strongly rely on advertising by individual Member Nation associations and their local networks.

Overall participant figures are steadily growing and several recent episodes of the lunchtime lecture series have clocked up over 1,200 registered participants in total, with about half this number attending live.

This remarkable level of engagement is due to the diversity and quality of the lectures given, with topics ranging from sustainability and urban resilience to digitisation, asset management, and innovations in construction techniques. These topics reflect current and emerging challenges faced by the underground construction profession, with practical insights, often based on case studies, helping participants to address similar issues in their own projects.

Analysis of participant profiles shows that around 80% are tunnelling and geotechnical engineers, whilst the remaining 20% are either students or university professors.

Taking a closer look at the engineers' profiles, around 21% of them declare that they hold a senior engineer or director's position. About 5% are project managers, showing that all professional levels take an interest in these webinars.



Participants

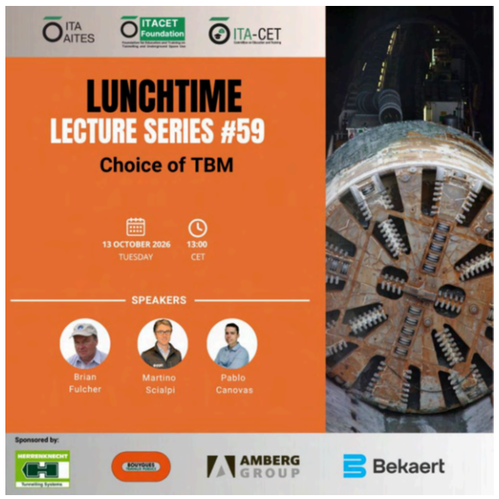


80%
engineers



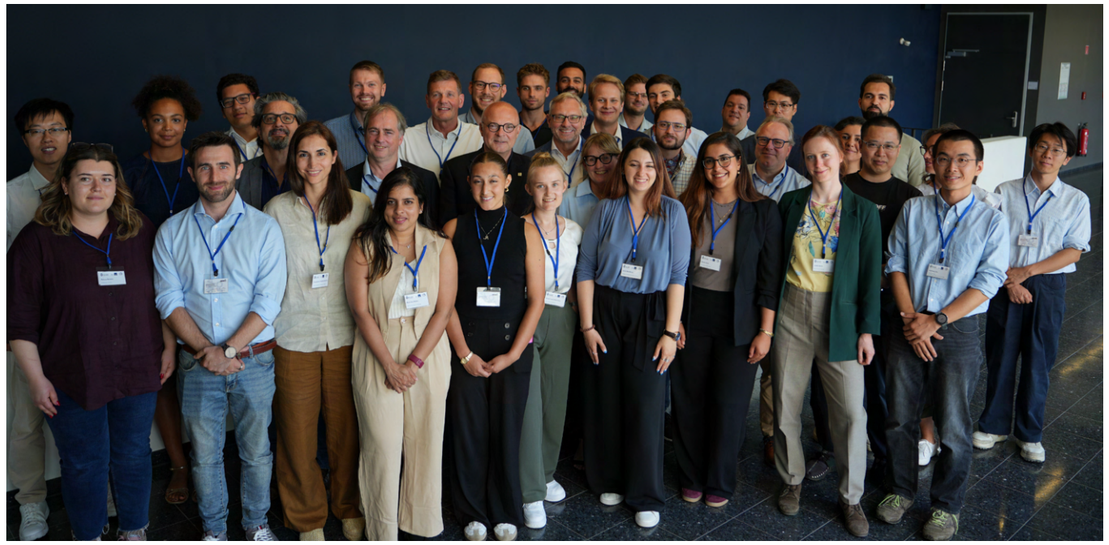
20%
students or professors

The ITA-CET Committee and ITACET Foundation would like to take this opportunity to thank all those who have contributed to making this series an internationally recognised platform for knowledge sharing in the tunnelling and underground space industry : our four industry sponsors (Amberg, Bouygues, Bekaert and Herrenknech, our outstanding lecturers from the ITA Committees, Working Groups and industry partners and last but not least, the participants themselves, whose continuous eagerness to learn and grow is our greatest reward!



PhD research work

under the spotlight



A look back at the fourth edition of the ITA-CET PhD students conference which took place in July...

Promoting and encouring research work in tunnelling and underground space is one of ITA-CET's core objectives and is facilitated through the activities of the ITA-CET university network. This network currently comprises 31 universities and other higher education establishments from around the globe.

In order to enable professors and students to meet and showcase their respective research topics, the first ITA-CET PhD students conference was organized in Italy, in 2019. Due to the succes of this initial event, similar events were organized in Austria in 2022, Switzerland in 2024 and more recently Germany, on 1st-2nd July 2026.

This latest edition was hosted by Ruhr Universität Bochum (RUB) and brought together professors and students from ten different universities.





The conference was organised around four sessions and the fourteen presentations covered a wide variety of research topics:

- Azad, Zuzan (Ruhr University Bochum, Germany): *Predictive Maintenance for existing Road Tunnels through AI-supported Digital Twins*
- Baucal-Poyac, Lucille (Ecole National des Ponts et Chaussées, France): *Predictive modelling of Life Cycle Assessment of mechanised tunnelling*
- De Jong, Arne (Delft University of Technology, Netherlands): *Effective design of immersed tunnel foundation using numeric modelling*
- Di Giovanni, Alfio (Politecnico di Torino, Italy): *Laboratory research on the reuse of waste mud from Slurry Shield TBM in Two-Component Backfilling Grout*
- Evangelatos, Alexandros (Montanuniversität Leoben / Technical University of Leoben, Austria): *Sustainable Segment Reinforcements: Advantages and Limitations of Different Reinforcement Materials*
- Far, Arsham Moayedi (Montanuniversität Leoben / Technical University of Leoben, Austria) : *Tunnels as a large-scale Hydrogen Storage Solution*
- Han, Bingxiao (Sapienza University of Rome, Italy): *Three-dimensional seismic response of an inclined tunnel considering soil–structure interaction: the TT10 tunnel at CERN*
- Patsekha, Aliaksei (Montanuniversität Leoben / Technical University of Leoben, Austria): *Experimental Investigation and CFD Modelling of Hazardous Gas Dispersion in Underground Transport Infrastructure*
- Pierce, Ian (Delft University of Technology, Netherlands): *Various Impacts on Immersed Tunnel Deformations: The Curious and the Mundane*
- Rengshausen, Matthias (Ruhr University Bochum, Germany): *Sprayed concrete research at Ruhr University: Cement-free steel fiber reinforced sprayed concrete systems and subsequent fiber orientation analysis*
- Skenderas, Doris (National Technical University of Athens, Greece): *Understanding Domino Effects in Underground Projects: Integrating Technical and Non-Technical Risks Across the Project Life Cycle*
- Sun, Jiacheng (Tongji University, China): *A rheology-based analytical model for evaluating the spatial distribution of clogging risk in EPB shields*
- Zhang, Zhihan (Tongji University, China): *Seismic response of a multi-segment underground station transversing inclined ground: Insights from shaking table tests*

An informal dinner enabled participants to network and pursue discussions with their peers. The event was a great success and ITA-CET would like to take this opportunity to express its sincere thanks to Professor Markus Thewes for organizing this event.

The next PhD students conference will take place in 2028 at the National Technical University of Athens, Greece, and we hope to attract even more universities. More information will be available shortly, so watch this space!

Successful

Collaboration with AMITOS

The Mexican tunnelling and underground association, AMITOS, is a longstanding partner of the ITA-CET Committee and ITACET Foundation. Collaboration started back in 2013 through the co-organization of a short course on *The principles of tunnel design.* Since the success of this initial event, AMITOS has regularly called upon ITA-CET to co-organize events: two courses on *Mechanized tunnelling* in 2014 and 2015, a more specific course on *Mechanized tunnelling in soft soil* in 2016, a course on *Calculation methods in tunnel design* in 2021 and a course on the *Principles, design and application of sprayed concrete* in 2024.

Initially organised in a face-to-face format, the more recent sessions have been organized online, following a general trend since the pandemic. The latest collaboration concerned a two-day online course on *Tunnelling supervision fundamentals* which took place on 21st-22nd October 2026.

This two-day online course covered conventional tunnelling, NATM and mining-based excavation methods. The course content aimed to provide the participants with knowledge enabling them to:

- Understand the roles and responsibilities of tunnel supervision.
- Interpret geotechnical conditions during excavation.
- Supervise conventional, NATM and mining tunnelling operations.
- Identify and manage geotechnical, safety and environmental risks.
- Make informed decisions in real site conditions.

The course addressed the principal aspects of tunnelling supervision, including excavation methods, support systems, geotechnical control, monitoring, quality control, safety, risk management and environmental considerations. Practical site management and field decision-making were also addressed through case studies.

The lecturers (shown below) included prominent figures from the international tunnelling community including several ITA Working Grouping Animateurs or Committee chairs.

This event aimed at civil engineers, mining engineers, geotechnical engineers, site supervisors and project managers drew 157 participants from eight countries, who were able to receive a certificate of attendance.

The ITA-CET Committee and ITACET Foundation would like to take this opportunity to thank all those who attended, with particular thanks to the lecturers and AMITOS for their continued commitment to ITA training actions over the years.



Laurence Delplace
Amberg Engineering, Switzerland
CEO · Animateur WG14 Mechanized Tunnelling



Etienne Garin
WSP-BG, Switzerland
Head of Underground Works · Animateur WG19 Conventional Tunnelling



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Montanuniversität Leoben, Austria
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Camilo Marulanda E.
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Technical Manager · Animateur WG2 Design and Engineering



Andrés Marulanda E.
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Alexander Poisel
IGT Geotechnik und Tunnelbau, Austria
Team leader, structural and geotechnical engineering



Dietmar Bach
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Managing Director and Partner



Michael Halwachs
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Corporate Health and Safety Manager, Tunnelling Division



Carmine Todaro
Politecnico di Torino, Italy
Assistant Professor · Coordinator WG15 Underground and Environment



Federico Bergamo
FS Engineering, Italy
Speaker · Low-vibration excavation techniques



José Francisco Suárez Fino
Consultec Ingeniería, Arquitectura y Supervisión, Mexico
Managing Director · Professional Expert in Tunnels and Underground Works, CICM

Welome to our new
Steering Board members



ITA-CET is honoured to welcome Sindre Log as its new Tutor. Sindre is Vice President of the ITA and no stranger to the activities of the Committee as he represented the Young Members Group on the Steering Board some years ago. We are sure that his involvement will lead to fruitful discussions.



A warm welcome to Daniela Boldini, Professor at Sapienza University, Rome, and a member of the ITA-CET university network. Daniela will be involved in Activity Group 1 which deals with organizing training actions for Member Nations.

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