



ASSOCIATION  
INTERNATIONALE DES TUNNELS  
ET DE L'ESPACE SOUTERRAIN

AITES

ITA

INTERNATIONAL TUNNELLING  
AND UNDERGROUND SPACE  
ASSOCIATION



# ACTIVITY REPORT 2024

April 2023 - March 2024

A photograph of a modern tunnel interior, likely a transit or utility tunnel. The walls and ceiling are illuminated with a vibrant blue light. A large, white, semi-transparent circular overlay is centered in the image, containing text. The tunnel floor is paved and has yellow double lines. In the distance, there are various traffic signs and a yellow-lit structure.

**The Executive Committee is pleased to present the annual Activity Report of the International Tunnelling and Underground Space Association. This report highlights the Association's significant efforts and accomplishments throughout the past year.**

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# FOREWORDS



**ARNOLD DIX**  
ITA-AITES PRESIDENT

The Executive Council has assumed an active and dynamic role in overseeing all aspects of ITA's operations, working closely with the invigorated Secretariat and our consultants.

Following the resignation of our new Executive Director, the ITA now operates under the direct authority of the Executive Council, in collaboration with the Secretariat and our consultants. This new working arrangement has granted the Executive Council unprecedented access to all facets of ITA's activities and administrative functions, offering valuable insights into the work of the Secretariat and opportunities to enhance ITA's operations further.

The collaboration between the Secretariat staff and the Executive Council has resulted in heightened engagement from the Executive Council, progressing beyond the implementation of reforms recommended by the ORCA report to actively working alongside the Secretariat in running the ITA.

This partnership has facilitated various initiatives, including website updates, the opening of individual membership, and the delivery of governance reforms. Additionally, efforts to promote equity, diversity, and inclusion within the ITA have commenced, drawing upon the expertise of Member Nations, while an interim sustainability committee has been diligently preparing initial deliverables. The Executive Council has adapted its meeting format from quarterly in-person gatherings, as was typical in the 80s, to dynamic real-time decision-making through dedicated virtual sub-groups. These sub-groups work tirelessly around the clock to address ITA's challenges as they arise, ensuring swift and effective solutions.

The ITA Executive Council has been highly active and committed to its mandated reform and transformation agenda. In addition to traditional in-person meetings held in Athens, Toronto, Mumbai, and Cape Town, members of the Executive Council have physically attended gatherings in various locations worldwide, including Singapore, Germany, the United Kingdom, Slovenia, India, Indonesia, New Zealand, South America, North America, and Nepal. This global physical presence underscores the Executive Council's dedication to driving the necessary reforms and transformations to make ITA even more dynamic and relevant in today's rapidly changing world.

## 2023 KEY FIGURES



Founded in 1974 by the initiative of nineteen Nations, the International Tunnelling and Underground Space Association (ITA) mission is to lead, advocate and facilitate the development of sustainable and innovative solutions for increased, optimised, safe and equitable use of Underground Space, enabling the tunnelling industry and its stakeholders to excel in delivering:

- Technical knowledge in the field of tunnelling and underground space through publication of guidelines, training, and creating platforms for exchanging information and ideas;
- Best practices in health-and-safety, planning, engineering, contracting, construction, operation, and maintenance;
- The tools to empower decision makers and allied professionals to make informed choices about the underground;
- Reliable and economical underground solutions to urbanisation and environmental challenges;
- Efficient and resilient underground infrastructure for current and future generations.

Since 1987, ITA has got the Special Consultative Status with ECOSOC, the Economic and Social Council of the United Nations. ITA has been involved in Habitat II, studies for crossing of the Gibraltar Straits, reduction of poverty program . Moreover, ITA is strongly involved in World Urban Forum as a major player advocating for the use of underground space in the cities.



# GOVERNANCE 2023-2024

## ITA EXECUTIVE COUNCIL



**ARNOLD DIX**  
President  
2022-2025



**JINXIU (JENNY) YAN**  
Past President  
2022-2025



**ANDRES MARULANDA**  
First Vice-President  
2022-2025



**HANGSEOK CHOI**  
Vice-President  
2022-2025



**JAMAL ROSTAMI**  
Vice-President  
2022-2025



**IOANNIS FIKIRIS**  
Vice-President  
2023-2026



**SINDRE LOG**  
Member  
2022-2025



**DAMIAN MCGIRR**  
Member  
2022-2025



**MONIKA MITEW-CZAJEWSKA**  
Member  
2022-2025



**ANDREA PIGORINI**  
Member  
2022-2025



**KLAUS RIEKER**  
Member  
2022-2025



**SANJA ZLATANIC**  
Member  
2022-2025



**GERARD SEINGRE**  
Treasurer  
2022-2025



**THOMAS DALMALM**  
WTC2025  
2022-2025



**RICK LOVAT**  
WTC2026  
2023-2026

## ITA GOVERNANCE COUNCIL



LESLIE PAKIANATHAN  
GOVERNANCE COUNCIL



BILL NEWNS  
GOVERNANCE COUNCIL

## ITA PS REPRESENTATIVE



PEKKA NIEMINEN  
PRIME SPONSORS  
REPRESENTATIVE

## ITA ADVISERS

Former members of ITA Executive Council have been invited to be advisers of the current ExCo.

- MARTIN KNIGHTS, UK, ITA Former President
- ANDRE ASSIS, Brazil, ITA Former President
- LARS BABENDERERDE, Germany, ITA Former Vice-President
- CLAUDE BERENGUIER, France, ITA Former General Secretary
- EINAR BROCH, Norway, ITA Former President
- TARCISIO CELESTINO, Brazil, ITA Former President
- SØREN DEGN ESKESEN, Denmark, ITA Former President
- RANDALL ESSEX, USA, ITA Former Vice-President
- ALEXANDER GOMEZ, Australia, ITA Former Vice-President
- ALFRED HAACK, Germany, ITA Former President
- FELIX AMBERG, Switzerland, ITA Former Treasurer
- TIMO LAITINEN, Finland, ITA Former Rep. of PS
- YANN LEBLAIS, France, ITA Former Vice-President
- ERIC LECA, France, ITA Former Vice-President
- IN-MO LEE, Republic of Korea, ITA Former President
- GUISEPPE LUNARDI, Italy, ITA Former Vice-President
- TOM MELBYE, Switzerland, ITA Former Rep. of PS
- DANIELE PEILA, Italy, ITA Former Vice-President
- SEBASTIANO PELIZZA, Italy, ITA Former President
- HARALD WAGNER, Austria, ITA Former Vice-President

## WORKING GROUPS

	<b>ANIMATEUR</b>	<b>VICE-ANIMATEUR</b>
<b>WG2</b>	Elena Chiriotti	Camilo Marulanda
<b>WG3</b>	Matthias Neunschwander	Gonzalo Diniz Vieira
<b>WG5</b>	Michael Halwachs	Werner Burger
<b>WG6</b>	Sallo Van der Woude	Jeanne Doreau-Malioche
<b>WG9</b>	Conrad Felice	Haitao Yu
<b>WG11</b>	Marcel't Hart	Jian Liu
<b>WG12</b>	Karl Gunnar Holter	David Oliveira
<b>WG14</b>	Laurence Delplace	Karin Böppler
<b>WG15</b>	Nikolai Bobylev	Carmine Todaro
<b>WG17</b>	Magali Schivre	Roberto Schuerch
<b>WG19</b>	Etienne Garin	Vojtech Gall
<b>WG20</b>	Giuseppe M. Gaspari	Andrea Bruschi
<b>WG21</b>	Panagiotis Panos Spyridys	Nobuharu Isago
<b>WG22</b>	Florent Robert	Alessandro Menozzi
<b>WG23</b>	Siamak Hashemi	Verya Nasri

## COMMITTEES

	<b>CHAIR</b>	<b>VICE-CHAIR</b>
<b>ITA-CET</b>	Robert Galler	Michel Deffayet
<b>ITA-COSUF</b>	Eric Premat	
<b>ITAtch</b>	Nick Chittenden	Jens Classen
	<b>CO-CHAIR</b>	<b>CO-CHAIR</b>
<b>ITACUS</b>	Han Admiraal	Antonia Cornaro



## YOUNG MEMBERS

CHAIR	VICE-CHAIR
Alex Novak La Flor	Eyðbjörg Amanda Petersen

## SECRETARIAT

Roland Herr	Executive Director
Anne Brissaud	Communication Officer
Christiane Linkenbach	Executive Secretary
Jocelyne Kervinio	Accountant
Sonia Salles	ITAtch Secretariat & Awards secretary
Olivier Vion	Consultant

## ITA COMMITTEE ON SUSTAINABILITY

The committee was established at World Tunnel Congress (WTC) 2023 in Athens.

Task lead: Gaspari Giuseppe,  
Goetz Vollmann, Tommy Olsen,  
Nikolai Bobylev, Dani Delaloye



# MEMBER NATIONS

The Executive Council has continued to prioritize the development of its relations with Member Nations. Throughout the past year, specific meetings were conducted in member countries, attended by members of the ITA Executive Council.

ExCo members traveled to all continents, engaging with numerous influential figures and decision-makers while inspecting various projects. Numerous visits were made to Member Nations, and Exco members also took part in several conferences.

## Communication with the Member Nations:

- The Executive Director visited UCA/SME in Denver in September and attended a national conference in Nepal;
- ITA President, Arnold Dix visited USA, South Africa, Canada, Finland (Normet)(Sandvic) Poland New Zealand, Germany, Finland, United Kingdom, France, Slovenia, Italy, Vietnam, Indonesia, Singapore, India;
- Both visited Slovenia and participated at a conference in Ljubljana.

The use of a private LinkedIn Member nation was trialed – but with limited success. ExCo has entirely reinvented how it conducts its communications – both amongst its membership and with the secretariate. ITAs communication with member nations could readily be upgraded too.

## Onsite and online events:

Numerous online events were attended by the president in Countries as diverse as Peru South Korea, India, Pakistan, and Abu Dhabi. The President also supported events in person in multiple locations ranging from New Zealand and Germany to South Africa and Poland.

## Development of the contacts:

The Executive Council pursued the relations with several countries, not yet ITA members, notably by the presentation of ITA at various digital congresses and meetings in which Executive Members participated. Cameroon and Papua New Guinea are both taking their first steps to becoming Member Nations. Senegal: Through the Nigerian Tunnelling Association contact has been made with interested people in Senegal. Contacts will be followed.

For the eighth consecutive year, activity reports have been compiled into a dedicated magazine. This year, reports were received from 37 out of the 79 Member Nations. Through the collaborative efforts of each Member Nation, the ITA Secretariat, and Tunnelling Journal, we are able to disseminate to all stakeholders the diverse activities undertaken in ITA Member Nations, as well as gather information on current and future tunnelling endeavors worldwide.



# EXECUTIVE COUNCIL ACTIVITIES

## Functioning of the Executive Council:

During the activity year period the Executive Council met on average almost monthly in both physical and digital meetings. In total, seven e-meetings took place, and four physical meetings – in Athens, Toronto, Mumbai and Cape Town.

Throughout the previous year EXCO worked on various topics related to ITA activities while also focused on an upgrade of the organization of ITA activities in order to become more efficient and fully transparent. Roland Herr who was announced Executive Director at the General Assembly in Athens terminated his contract – effective February 2024 and ExCo has run ITA in close collaboration with the Secretariate thereafter.

During this past period main topics dealt with:

- The re-organization of the secretariat in Geneva. Various organizational changes were made with EXCO, assuming effective control over the last four months in close collaboration with the secretariate, following the EDs departure.
- New Governance guidelines were established, to provide clear and transparent procedures for the various activities that are running within ITA (i.e. working groups and committees elections, decision processes within EXCO etc)
- Lessons learned from previous events that ITA organizes were reviewed and specific proposal set for GA's approval.
- Collaboration models with existing external suppliers were reviewed and wherever needed specific changes were applied or planned to be applied (i.e. IT support, media support).
- Training activities: relation between ITA and ITACET Foundation was revisited and several changes implemented including the Foundation embracing new funding models and ITA representation in the Board.
- Finances and funding model: the financial situation is closely monitored, ITA's financial model was reevaluated, a risk assessment analysis has been established and is continuously updated, supplementary funding supports are examined.
- Membership: an updated membership policy applies including fee variations. A new Affiliated Membership categories (Individual and Owner) were established since January 2024, as per September 2023 GA's decision.
- The ITA webpage was restructured, modernized and updated.
- Working Groups and Committees were reviewed to better motivate and incentivize the membership and improve the relationship between the committees and Working Groups. Initiative to review WG structure was launched with WG leads to better align WGs with ONE ITA vision, mission and objectives.
- Data exchange management tools are examined in order to facilitate efficient work procedures both for the secretariat and the EXCO members.
- The contract between ITA and the Member Nations organizing the upcoming WTCs and General Assemblies has been redrafted as a Standard Form Contract. The contracts for the WTCs until 2026 have now been finalized.
- The engagement of new Nations within the ITA, from all over the world, was a priority for the EXCO. Specific actions took place in Africa, Latin America, Asia, Indonesia and Balkans through reconnection with non-active MNs and listening sessions leading to discovery of aspects important to non-active Member Nations.
- Communication procedures were reviewed in order to maximize the outreach to the

industry. Following the resignation of the ED, contract with Media Expertise was halted and a trial media partner collaboration for WTC2024 was implemented.

- A New “Observer Status” has been proposed as an interim step toward ITA ‘Member Nation’ membership status.

Additional online meetings were held regularly between the President, various ExCo members, and Task Forces, to prepare for upcoming events and decisions (ITA Awards, 50th ITA Anniversary, Working Groups, Secretariat, Organizational Changes, Governance, and others).

The ITA’s strategy goal towards ONE ITA is being followed.

To respond to Strategic Plan informed by ORCA recommendations, specific tasks had been undertaken by numerous groups organized following a ‘Task Force’ model, consisting of members of ExCo, Secretariat and Governance Council.



### ITA 50th anniversary:

This year (2024) is the year of the ITA 50th Anniversary.

A Task Force has been working on organizing different events including presentations and publications. These will be launched at WTC 2024 and would continue throughout the year globally (following Member Nations specific initiative for celebrating the ITA 50th Anniversary). The main focus of the celebrations is to showcase the main achievements and advances in the realm of tunnels and tunneling in the past 50 years primarily through on-site and virtual presentations, videos, multi-media promotions, photo-contests, publications, and special sponsorships. Major landmark projects, globally, and technical innovations and advancements throughout the industry will be highlighted and celebrated in terms of planning, design, and construction of tunnels and underground space, and will include all

Member Nations and Affiliated membership (showing initiative or desire to participate).



### Orca:

Background: In 2019, a few Member Nations requested an independent Organizational Review and Compliance Assessment (ORCA) is undertaken after concerns had arisen about the effectiveness, efficiency, transparency, and accountability of ITA’s governance as well as management of its Secretariat. ORCA Report was presented to GA in August 2022 at the WTC in Copenhagen.

ExCo addressed ORCA recommendations, which informed ITA Strategic Plan. Summary of ExCo actions were presented in a document entitled ‘ORCA Follow Up - Summary of ExCo.

### Meeting with Prime Sponsors:

During the WTC2023, a meeting took place between ExCo members and PS. The scope of this meeting was to strengthen the bonds of ITA’s elected council (i.e. EXCO) with the PS representatives, to discuss the expectations of the PS and to establish procedures so that both parties can better contribute to the development of the tunnelling industry.



# COMMITTEES & WORKING GROUPS



After the pandemic period that pushed ITACOSUF to use new communication tools and organize virtual meetings and events, the last year period allowed our committee to regain its dynamism following 2022's trend and was very active. The will is to increase the membership and to attract new talents. Concerning the committee's organization, Severin Wälchli, co-leader of AG2, was elected during ITACOSUF General Assembly in Hamburg (05/12/2023). This will have to be confirmed formally during ITA GA in Shenzhen. Since last WTC in Athens, 3 Steering Board were organized : Athens, Greece on 16 May 2023 in hybrid mode, Bron, France on 29 August 2023, Hamburg, Germany on 05 December 2023 and a virtual meeting on 22 March 2024. Each of the 4 AG organized several virtual and physical (during WTC2023 and Hamburg workshop) meetings. A new website was launched in 2023 (<https://www.ita-cosuf.org/>).



The committee was fully involved in the preparation and the organization of PIARC Workshop India 19 and 20 April 2023. For this specific event on Road Tunnels (construction and operation) that was a real success, ITACOSUF together with the Indian committee and PIARC Road Tunnel TC4.4 ensured the link with the civil engineering experts of ITA. Several lecturers from ITA and ITACOSUF community gave very relevant presentations.

During WTC2023 in Athens, ITACOSUF participated in the Round Table "Safety, risk and Operation of Underground Infrastructure" and in the Technical Session dedicated to operational safety. Another highlight was the workshop "Digitalization of tunnels – Towards BIM-based operation and maintenance" organized on 06 December 2023 in Hamburg by AG1 and AG3. Very high quality keynote lectures and presentations gave a wide overview on current developments, perspective and expectations. More than 50 participants attended and were fully satisfied by the very fruitful discussions on this promising and appealing topic that raises a lot of questions. The activity was also intense for AG4 during the past period. First of all, a great job was achieved to elaborate guidelines to provide guidance to Safety Officers and those who interact with them to meet the duties of EU Directive 2004-54-EC. These "TSO guidelines" should be soon published. Then another important task was to start preparing next TSO European Forum TSO Forum that will take place in Lyon, May 30th & 31st May 2024. The program is already completed and no doubt that this event will again be a successful story as past TSO forums. On the way to TSO7, ITACOSUF organized also together with KPT a webinar about road tunnel safety that was well attended and appreciated. Concerning the link with other ITA activities, during this last year period Götz Vollmann was appointed by ITACOSUF to be its corresponding member participating in the activities of the ITA group on "Benchmarking Underground Development from a United Nations SDG and Climate Emergency Perspective- A quantitative Framework". He took the lead of Task A : "Categorization and adoption" focusing on the use of BREEAM Infra for underground infrastructures.

Last but not least Eric Premat participated in the meetings organized by Jamal Rostami about the opportunity to create a Research Committee.



ITAtch is a committee formed by the International Tunnelling Association (ITA) to facilitate technology advancements and foster collaboration within the tunnelling industry. Over the last year we have had just one change in the list of Prime Sponsor with Mosproekt-3 having stopped their support of the ITA. The current membership of ITAtch consists of the 13 Prime Sponsors and 37 Supporters of the ITA.



The Steering Board meetings were made open to all prime sponsors however typically only representatives from Bekeart, Herrenknecht, Implenia, Master Builders, Normet, Robbins, Sandvik, Sika and Swiss Tunnelling Consultants are active in their engagement.

In the WTC 2023 it was confirmed that Jens Classen would replace Alberto Rey as the Vice Chair of the committee. As Nick Chittenden has been the Chair for the last 6 years it will be required to establish a new Chair during 2024. Jens Claasen has unfortunately confirmed that he will not be able to take on this role but will continue to support as Vice Chair. As yet, no nominations have been received for the new Chair.

Since the last World Tunnel Congress in September five on-line meetings of the Steering Board have been held with numerous smaller

meetings of the activity groups, in particular the activity group on Low Carbon Concrete for Tunnel Linings.

#### **TBM Material Consumables Activity Group:**

The document prepared by the activity group for TBM Material Consumables / Foam Polymers has been finalized and will be presented at WTC 2024.

The group has proposed an extension of the work to cover an update on the Best Practices for Segment Backfilling.

#### **Low Carbon Concrete Activity Group:**

This activity group created significant interest from many of the Prime Sponsors and Supporters. With this enthusiasm, the first draft document has already been completed in a short time and has been provided to the ITA Secretariat for peer review. The document should also be ready for WTC 2024 where the discussion panels will be based around the two ITAtch publications.

The latest guideline to be identified for development is on Small Diameter Tunnelling and is being led by Marcus Lubbers from Herrenknecht.

#### **Lunchtime Lecture Series:**

ITAtch personnel have supported the continued success of the ITACET lunchtime lecture series. #25 on the Service of Machinery in Mechanized Tunnelling was presented based on the ITAtch Guideline and Ross Dimmock presented as part of the WG12 discussing the benefits and Use of Sprayed Concrete in session #33.

Bekaert, Herrenknecht, Sandvik, Robbins and CREG are all supporting the ITACET Training Course at WTC 2024 in Shenzhen.

#### **ITA Working Group Structure:**

ITAtch have been heavily involved and supported the development of the proposed new ITA structure for the Working Groups, highlighting the support and engagement that the prime sponsors can provide to the development of best practice.

There are currently 30 “academic” and 14 “industry” members, some of whom sit on the Steering Board. The Steering Board also comprises representatives of the ITA COSUF, ITACUS and ITAtech Committees, the ITACET Foundation and the ITA Young Members Group. Administrative matters and communication actions are dealt with by the Committee’s Administrative Secretary. The Tutor for ITA-CET is Jamal Rostami.

### Education and training within the ITA’s Strategy:

In its Mission Statement, ITA declares that its purpose is to:

- Advocate and raise awareness of the use of Tunnelling and Underground Space;
- Facilitate more interaction and joint activities between Member Nations and industry for development and sharing of knowledge and experiences between stakeholders;
- Create a platform for Education and Training of engineers on available technologies for construction and maintenance of tunnels through contribution of Working Groups and Committees;
- Streamline the activities of the ITA for efficient interaction between Executive Council, Secretariat, Member Nations, Working Groups, and Committees through restructuring of the organization.

Raising awareness of the use of tunnelling and underground space, knowledge sharing and education and training are the core activities of ITA-CET and are therefore fully in line with this mission statement.

### Meetings:

A meeting on ITA training activities was organized in Athens during the WTC and gathered 29 participants: ITA Executive Council members, WG animateurs, Committee

representatives, representatives of academic establishments, ITA-CET Steering Board members. The purpose of this meeting was to promote the Committee’s activities and foster long-term collaborations.

Since the WTC in Athens, the Steering Board has held several online meetings (September 2023, November 2023, February 2024).

### Development of e-learning:

The ITA-CET Committee has continued to pursue its “Lunchtime lecture series”, co-organized with the ITACET Foundation. These lectures are generally organized on the second Tuesday of every month and are held from 13:00 to 14:30 CET. They include presentations made by prominent members of the ITA Working Groups and (often the animateurs/chairs) and generally attract around 150 live participants, with many more registering to stream the event afterwards. On average, the latest sessions have attracted around 400-500 registrants in total.



### Training and Education for ITA Member Nations:

There has been a noticeable reduction in Member Nation requests for training sessions over the last several years. There are several possible explanations for this drop:

- the unstable political context in some region;
- growing financial constraints and uncertainties;
- the renewal of certain Member Nation representatives, with a lack of awareness of ITA-CET activities amongst newcomers;
- the availability of free lectures through the lunchtime lecture series.

However, over the period May 2023- April 2024, the ITA-CET Committee and ITACET Foundation have co-organized the following training sessions for Member Nations:

- France: tunnel boring machines and their use, France, organized within the scope of the AFTES international congress (in person),
- Argentina: risk management in tunnelling, organized within the scope of the annual AATES tunnelling an underground space days (online),
- Nigeria: main aspects of managing underground projects, organized within the scope of the 4th Nigerian international tunnelling and underground space conference (in person).

### Training and education for industry (blue-collar training):

The ITA-CET Committee has prepared an initial draft proposal of a global training initiative which aims to address the growing need for comprehensive, accessible and standardized training and education for blue-collar workers. This initiative aims to establish a list of priority training topics for training and then develop “train-the-trainer” courses, so as to ensure maximum outreach and efficiency whilst minimizing training costs. These courses could be conducted globally at ITA-CET acknowledged training facilities.

### University network:

This network currently comprises 30 official members from universities and higher education establishments around the globe (Europe, North America, South America, Asia, Australia), that offer Master or post-Master courses in tunnelling and underground space. Efforts have been made recently to increase the scope and outreach of this network and ITA Member Nations have been invited to provide information on university professors and other academics involved in teaching in their respective countries.

ITA-CET is also responsible for examining and approving requests for ITA endorsement of Master courses. The latest course to receive

such endorsement is the Mtech in tunnel engineering at MIT World Peace University in Pune, India. This Master received ITA-CET endorsement in October 2023.

### Communication on ITA-CET activities:

The Committee has continued to publish its twice-yearly newsletter. Advertisement of ITA-CET activities is also made on the Committee’s web pages, the ITACET Foundation web site and via the university network group on LinkedIn.



ITACUS was active in 2023-24 in 13 external events, hosting workshops, round table talks and training sessions on the use of underground space. Its 5 activity groups are busy developing their respective research domains. Also, the ITACUS activity groups have grown in outreach, numbers and contributors.

**AG 2** co-led by Petr Salak and Rosanne Verloop had a publication and presentation in the city of Gdansk on their Young Professional Think Deep Programme (YPTDP), as well as at the ACUUS 2023 conference, where Rosanne earned an award for best presentation. The final report will be available soon.

**AG 5**, led by Marilu Melo and **AG 4** led by Abidemi Agwor, published in 2023 “Underground Urbanism in Africa: splintered subterranean space in Lagos, Nigeria”. Authors ITACUS; Abidemi Agwor; Marilu Melo Zurita; Paul Munro, and presented at ACUUS 2023.

**AG 3**, led by Mahak Agrawal, published and was awarded the Young Scholar Award by ACUUS, for Mahak Agrawal’s work on “embedding circularity and resource efficiency in underground data centres” co-authored with ITACUS co-chairs Antonia Cornaro and Han Admiraal and published with UN Environment Programme (UNEP).





**AG3** also submitted a 4-week course proposal to Terra.do focusing on underground urbanism for climate resilience and net-zero goals. Moreover AG3 secured opportunity to lead Springer Nature book project, titled "Underground Spaces for Climate Resilience and Sustainability" publication due in the second half of 2024.

Co-Chair Antonia Cornaro published "Underground space use for renewable energy production and storage" and presented at ACUUS 2023 in Singapore (forthcoming with Springer), jointly with Han Admiraal, Hagerbach Test Gallery and Subspace Energy Hub. ITACUS events 2023-24. The following external events took place with strong ITACUS engagement as panellists, roundtable hosts, moderators or presenters:

- Latest ITACUS Publication on Underground Urbanism in Africa;
- Special ITACUS session at WTC 2023;
- WTC 2023: ITACUS special session 2023 "The Way Forward";
- WTC 2023 ITACUS presentation at ITACET Training Course;
- Breakfast Meeting, hosted by the Tunnelling Association of Kenya;
- Joint ISOCARP-ITACUS Young Professionals Workshop;
- Joined ACUUS 2023 Conference in Singapore;
- Held a presentation at AFTES;
- Hosted panel discussion at placemaking week Europe in Strasbourg;
- ITACUS hosted "Reconsidering the value of underground spaces in a sustainable urban future".



#### WTC 2023:

- The ITAYm General Assembly took place on 16 May 2023. Elections took place to fill one vacant position within the Steering Committee. Brodie Aitchison (Australia) won the election among six candidates

- A workshop was also organised during the ITAYm session on the theme of "Overcoming challenges and fostering a resilient industry". This first workshop helped to facilitate active networking, generate debate and consensus, develop critical thinking and generate opinions, stimulate thinking on the topic of sustainable infrastructure and provide concise feedback publicly.

#### Communication and events:

- Continued publication of an independent Breakthrough newsletter with information from youth groups around the world. Two newsletters have been published since the last WTC;
- Engaged with the ITA communications team to streamline output from the ITAYm group going forward;
- Celebration of World Tunnel Day on 4 December with an awareness campaign on social media. National ym groups were encouraged to share their celebrations, projects and national ym news using the hashtags #BoringDay and #WorldTunnelDay;
- Focused on being active on Social media, especially LinkedIn, including promoting ITA-CET Lunch time series.

#### WTC 2024:

- Working together with the organizing committee of WTC 2024 for the ITAYm-Session and Social Event;



# WORKING GROUPS

Among the numerous working groups established within the ITA, 20 are currently active.



## WG 2 – Research

WG2 is focusing on updating guidelines related to risk management, stress measurement, and settlement recommendations in tunneling projects. They are also addressing issues like face support pressure calculations and tunneling-induced damages on utilities.



WG 2

WG 3

## WG 3 – Contractual practices in underground construction

This group is discussing various topics related to contractual practices in underground construction such as procurement practices, risk management, and dealing with unforeseeable events. They are also collaborating on publications and guidelines.

## WG 5 – Health and Safety in Works

WG5 is revising and updating several reports related to health and safety in underground works, including reports on stress measurement, human factors, and settlement recommendations. They are also involved in developing guidelines for small diameter tunneling.



WG 5

## WG 6 – Maintenance and repair of underground structures

The primary goal of this group is to develop guidelines for maintenance and repair activities related to underground structures. They are currently focusing on injection repair, damage cataloging, and fire protection lining.



WG 6

WG 9

## WG 9 – Seismic Effects

This group is working on compiling a database and synthesis document regarding seismic design and construction guidelines for underground structures, with a focus on seismic effects and mitigation measures.

## WG 11 – Immersed and floating tunnels

WG11 is developing various products including maintenance and repair leaflets, publications on sustainability, and courses. They are also updating project databases and the annexes of existing owner guides.



WG 11

WG 12

## WG 12 – Sprayed concrete use

This group is working on a technical report about the in-service condition of sprayed concrete in tunnel linings. They hold regular web meetings to discuss content and progress.





### WG 14 – Mechanization of excavation

WG14 is collaborating on establishing industry guidelines for TBM specifications. They hold regular meetings to discuss progress on various tasks within the group.



WG 14



WG 15

### WG 15 – Underground and environment

WG15 is focusing on environmental risk assessment and sustainability in underground construction. They hold regular meetings to discuss progress and plan future activities.

### WG 17 – Long tunnels at great depth

This group is developing guidelines for mitigating safety risks during the construction of long and deep tunnels. They have published a guideline on logistics aspects and are planning further meetings and site visits.



WG 17



WG 19

### WG 19 – Conventional tunnelling

WG19 is working on guidelines for the design and implementation of conventional tunneling in urban settings. They also participate in sustainability initiatives and collaborate with other working groups.

### WG 20 – Urban problems - Underground solutions

This group is investigating the role of underground space in urban resilience and sustainability. They hold regular meetings to track progress and plan future activities.



WG 20



WG 21

### WG 21 – Life Cycle Asset Management

WG21 aims to prepare guidelines for life cycle asset management for tunnel owners and clients. Due to logistical challenges, they have not been able to hold meetings but plan to resume activities when feasible.

### WG 22 - Information Modelling in Tunnelling

This group is working on guidelines for sustainable BIM approaches in tunneling projects. They hold regular meetings and collaborate with other organizations to finalize documents.



WG 22



WG 23

### WG 23 - Shaft Construction

WG23 is focusing on various aspects of shaft construction, including methods selection and site investigation. They hold meetings, webinars, and collaborate with other organizations to develop guidelines and share knowledge.

Communication holds significant importance within ITA-AITES as an integral aspect of its strategy. A yearly communication plan has been devised and is consistently updated. This comprehensive document consolidates all envisioned communication endeavors aimed at promoting ITA across various platforms such as print, web, social media, and video, targeting diverse audiences including internal stakeholders, the tunnelling industry, the general public, and the media. Several noteworthy actions have been executed this year:

### Publications & Reports:

As every year, committees produce reports. 7 reports have been published:

- WG11: an Owner's guide to submerged Floating Tunnels;
- Muir Wood 2023 : the tunnel behavior at the face of excavation contracts, Marc Panet;
- WG20: urban underground space for resilient cities: urban problems, underground solutions,;
- WG17: logistics aspects of long and deep Tunnels;
- ITAtech Group Excavation: guideline for use of rock classification systems for ground support on TBM Tunnels;
- ITAtech Subgroup Bolts & Arches: guideline for radially installed bolts in Tunnelling;
- ITA and IMIA: code of practice for risk management of tunnels works – 3rd edition.

**TUST** is available in electronic version for all the members (Member Nations and Affiliate Members). It is also available to individual members who have subscribed to it. The access is through the private area available from ITA web portal.



ITA has published in May 2023 at the occasion of the General Assembly its annual activity report and the ITA Member Nations report. For the 8th year, the ITA Young member Group in Association with Tunnelling journal published Breakthrough Magazine.

### Publication of the electronic ita@newsletter:

This year 6 newsletters have been sent including specific news documents about WTCs and Awards...

### Scoop-it newsletter:

ITA continues to publish twice a month a scoop-it on tunnelling and underground works. Every two week about 10 articles published in the international press are selected and put together for the tunnelling community. A special issue was produced for the 100th newsletter.

### Website:

In January 2024 the Portal website (giving access to all ITA sites) and the ITA Activities website has been redesigned to improve the user's experience and to celebrate the 50th anniversary.

The main objective for redesign were :

- Focus on the Portal (Access to all Sites) and the Activities Website;
- Better Users Experience: facilitate access to the different websites and specific pages (as ITA is a very complex and rich digital asset with thousands of pages and documents);



- A more organic, attractive, and modern design (in line with the ITA graphical guidelines and new design trends for websites);
- Reflect of the ITA vision: Underground Solution for a better world;
- Specific improvements for ITA Activities: message from the President (or other member of ITA), more focus on News and the ITA Community (Members and Sponsors), a new Interactive Map for all countries, a new client forum page, improved design for all pages ....

We also focused on a new page and new functionality for Individual Membership registration by adding a pop-up and dedicating a new registration page.



### Traffic of ITA Websites: 1 year April 2023 – April 2024:

Traffic is now measured with Google Analytics 4, a new system different from previous Google Analytics version.

The most visited sites are Ita Activities (45 000 sessions and 32 000 users) and About Tunnelling (45 000 sessions and 38 000 users) ITA Portal, which is the access door to all sites and pages rank third with (23 000 sessions and 18 000 users)

Focus on ITA Library: at the moment more than 2,000 papers are available coming from the proceedings of WTC 2014, 2015,2017, 2018, 2020 and 2022. All the proceedings are now free, nevertheless everyone needs to register to be able to download a paper.

SITE	LAST YEAR 04/2022 to 04/2023		THIS YEAR 04/2023 to 04/2024		
	SESSIONS	USERS	SESSIONS	USERS	% USERS
ITA Portal	19,300	14,100	22,851	17,548	24%
About Tunnelling	37,600	31,150	44,526	37,869	18%
Project Database	4,800	4,100	5,189	4,400	7%
ITA Activities	43,100	32,600	45,211	32,363	-1%
MY ITA (private area)	2,280	1,980	2,806	2,139	8%
ITA Awards	14,100	10,100	14,000	10,000	NA
ITA Library	13,900	12,600	16,999	14,405	14%

### Press:

ITA directly or indirectly participated in articles published in technical journals or current affairs programs. Some of them are available on ITA web site in the sections ITA Press releases and ITA in the Press.



### Social Media:

**LinkedIn** company page: significant increase in the number of subscribers, with over 7,500 new members joining us, marking a remarkable growth of 25% within a year. Additionally, our ITA LinkedIn group has surpassed 3,150 members, further solidifying our community's strength and influence."

### Youtube

The channel has about 1150 subscribers. Several videos have been added, including the ITA Awards 2023 and a ITA 50th anniversary promotional clips.

### X ex Twitter

ITA has a twitter account, @ita\_aites with now more than 1490 followers. Increase of 7 % in one year.



# CONFERENCES & EVENTS

## WTC 2023

The 49th ITA-AITES General Assembly and World Tunnel Congress were hosted by the Greek Tunnelling Society (GTS) at the Megaron Athens International Conference Center (MAICC) in Athens from May 12 to May 18, 2023.

Placed under the angle of the expanding underground, 2146 people celebrated and contributed to the advancement of tunnelling, to innovate, to project solutions for the public space and the citizens around the world.

This bustling week for WTC exhibitors and visitors commenced with the traditional opening ceremony, attended by the Mayor of Athens, Kostas Bakoyannis, who emphasized the significance of the underground network in the host city.



ITA-AITES 49th General Assembly

The program of the WTC 2023 started with a two-day (May 12-13) ITACET training session on "Risk management and sustainable underground solutions", whereas the main congress activities (i.e. scientific program and technical exhibition) took place between Monday (May 15) and Wednesday (May 17). During the whole congress week, all regular annual ITA activities were organized (i.e. General Assemblies etc), along with the various meetings of the working groups and of ITA's committees.

Last but not least, thanks to the construction activities that took place in Athens by 2023, several technical visits were organized, offering delegates various alternatives to choose from.

This session ended by a conclusion from ITA President Arnold Dix on the initiation of the sustainability initiative.

Within the program of the WTC, there were several highlights comprising:

- The Client Forum. For the first time, the WTC organised a special moment dedicated to the end-users of tunneling works, giving them the possibility to exchange with the actors of tunnelling about their needs. This forum will return next year at the WTC China edition.
- The remarkable first ever "Women in Tunnelling" Forum. We not only heard from women leaders in the tunnels about their careers and achievements, but also about the challenges they faced during their career in a predominantly male sector.

### WTC 2023 AT A GLANCE

- 412 presentations**
- 153 oral presentations**
- 45 countries**
- 121 exhibitors**
- ~2100 participants (both physical & virtual)**
- Delegates from 66 countries**



ITA Athletic event: Participants competed in sports in a cricket competition



The 12th Muir Wood lecture delivered by Professor Marc Panet (France)



## NEXT WTC

2024 Shenzhen, China  
 2025 Stockholm, Sweden  
 2026 Montréal, Canada



## ITA AWARDS 2023



The 9th edition of the ITA Tunnelling and Underground Space Awards took place in Mumbai, India November 2023. This hybrid event, has been organized by ITA-AITES and Tunnelling Association of India (TAI). This will be one day conference during Tunnelling Asia Conference.

ITA promoted this event through media partners and the social media with specific campaigns. The awards ceremony was executed as a hybrid event allowing distance participation for the ITA family members. During the morning of the one-day awards event various round tables took place following the presentation of the shortlisted projects per category. Each finalist was able to briefly present his project/initiative for about 7-8 minutes.

In total fifty-three (53) international construction projects and Young Engineers have entered as candidates.

The finalists and the winners were selected by the 18 members of the panel of judges and, through them, ITA identified and rewarded major disruptive innovation and groundbreaking projects classified within seven (7) different categories. The winner of every category is listed below:

- Major Project of the Year (over €500M): EOLE – Paris East-West Rail Express Link, France



- Project of the Year (between €50M and €500M): Comprehensive Project of Shenzhen Binhai Avenue (Headquarters Base Section) Coastal Wide Underground Space, China
- Project of the Year incl. Renovation (up to €50M): Mount Royal Tunnel – Double Arch Replacement & Rehabilitation for the REM Project, Canada
- Technical Innovation of the year: Building Blocks in a Foundation Pit – Prefabrication and Assembly Construction Technology for Metro Stations, China
- Product/Equipment Innovation of the year: Hard Rock Shield + earth pressure + slurry three-mode TBM, China
- Beyond Engineering: Permanent Sprayed Concrete Linings on Mumbai Metro Line 3 Sahar Road crossover cavern, India
- Young Tunneller of the year: Cláudio David Cabral Dias, Portugal

## NEXT ITA TUNNELLING AWARDS





ASSOCIATION  
INTERNATIONALE DES TUNNELS  
ET DE L'ESPACE SOUTERRAIN

**AITES**

**ITA**

INTERNATIONAL TUNNELLING  
AND UNDERGROUND SPACE  
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