



martes, 30 de abril de 2024

## ITA WTC2024 China - A clarion call for underground engineering

One of largest World Tunnel Congress events ever

- 3,000 registered delegates both in-person and online
- More than 60 countries of the world represented
- More than 200 exhibitors in a vast exhibition hall
- High ranking officials of China in attendance
- Special guests represent the United Nations
- A clarion call Muir Wood Lecture
- Roundtables on vital topics
- More than 200 papers presented in five simultaneous sessions
- More than 300 Poster Session presentations
- Eight organized Technical Tour visits
- ITA celebration of its 50th year Anniversary
- ITA business progressed at ITA General Assembly
- Embedded photos available in hi-res jpg format
- Linked videos available for download and

republishing on request

- Contact [Media@ITA-AITES.org](mailto:Media@ITA-AITES.org) for information

### China wows as host of the World Tunnel Congress 2024

China's remarkable urban development and importantly, its rapid underground infrastructure expansion, was on show when the international underground construction industry gathered for the World Tunnel Congress in Shenzhen. Delegates up to 3,000 representing 60 different countries heard from leading central and local Government officials of China and from representatives of the United Nations about how it is clear that at all levels the underground dimension are vital to the efficient and healthy functioning of society and for addressing critical issues that confront the global community currently.

Hosted this year by the Tunnel and Underground Engineering Branch of the China Civil Engineering Society Ms Jinxiu Jenny Yan, Immediate Past President of the ITA and Co-chair of the Organising Committee, was honoured to welcome senior Government officials of China and officials of the United Nations to the event, including Mr Ni Hong, Minister of Housing and Urban[1]Rural Development of the People's Republic of China; Mr Michal Mlynár, Assistant Secretary General of the United Nations and Acting Executive Director of UN-Habitat; Mr Sheng Ying, National Officer of UN-Habitat China; and Mr Qin Weizhong, Mayor of Shenzhen.

At a packed Opening Ceremony, honoured guest Minister Ni Hong described how China's investment in underground infrastructure has improved the lives of millions across the country and how his Ministry is facing the real challenges of the coming decades arising from continuing urban expansion, the real and present effects of evident climate change and the urgent and continuing need for urban and rural connectivity.

The Congress theme itself - Tunnelling for a Better Life - recognises the indisputable fact that underground infrastructure underpins all endeavours to improve living conditions at all society levels and is vital for sustaining communities and protecting the natural environment.

In a one-on-one meeting, Minister Ni Hong expressed to ITA President Dix his appreciation of the work of the ITA (International Tunnelling and Underground Space Association) and its commitment to promoting underground opportunities and alternatives worldwide.

President Dix assured Minister Ni Hong continuing ITA cooperation in supporting China's expansion of underground infrastructure and its rapid advances in excavation and underground infrastructure management technologies.

In speaking of his work with the United Nations, Mr Michal Mlynár communicated his concern for the fate of the underprivileged of this world in the face of mounting inequity and the threat of more frequent natural disasters - floods, droughts, food shortages, desperate housing conditions - that increase the number of humans and refugees on the move searching for a better life. He was grateful for the invitation to join the WTC and to become more consciously aware of the underground space construction industry and its work that is instrumental in uplifting people from poverty and providing the foundation for improving human life.

Warnings of similar and expanded themes continued in the Muir Wood Lecture presentation delivered this year by Professor Dr Prescilla P Nelson of the USA and Colorado School of Mines.

Titled *Underground Resources for a Sustainable Global Future* and presented in her inimitable style, Dr Nelson spoke frankly, earnestly and without pulling any punches. Among the many highlights of her pointed treatise that included clear and accredited facts about the inequality of human existence across the world, Dr Nelson, as an educator, presented stark evidence of the state of the work force in engineering and lack of qualified professionals, particularly in developed countries. "There is a generation of engineers coming to retirement and will never be replaced. We simply are not educating those who could take over." As an example, Dr Nelson illustrated that one university of mining in China produces more qualified mining engineers in a year than all the universities of mining study in the USA combined. "In the future, the new generation of mining engineers will be Chinese," was the reality check.

The keynote lecture by Professor Dr Hehua Zhu of Geotechnical Engineering at Tongji University, Shanghai, discussed the Development and Applications of Intelligent Tunnel Construction: The State-of-the-art and Future Perspectives. The presentation demonstrated how advanced China is in developing intelligent tunnelling systems to reduce the uncertainties in the excavation process and improve the quality, safety, and operating durability of creating and managing underground public infrastructure.

Two plenary Roundtable discussions explored first the Challenges and Path of Developing Future Tunnelling Technology. Moderated by Andre Assis (far left) of Brazil and a past resident of ITA, with panellists (from left) Rick Lovat, Canada; Jenny Jinxiu Yan, China; François Renault, France; Wojciech Mleczo, Poland; and Goh Kok Hun, Singapore, all agreed that introducing new innovations into the industry can only be achieved with team work and that the "team" includes owners and financiers.

The second Roundtable discussion considered the use of Tunnels and Underground Space Towards Sustainable Development. Moderated by Sanja Zlatanovic of USA and Andrea Pigorini of Italy, the panellists included Mrs Bunyamin, WFEO-World Federation of Engineering Organizations Executive Council Member from Malaysia; ITA President Arnold Dix, Australia; Ke Fang, Director General of the Implementation Monitoring Department of the AIIB-Asia Infrastructure Investment Bank; Samuel Huckle, Member of the ITA Young Steering Board and a civil engineer; Sheng Ying, National Officer of UN-Habitat China Office; and Alexis de Pomerol, Société des Grands Projets (SGP) of France. The upshot of the discussion was that the excavated underground space is not the thing - the thing is the ultimate purpose of that underground space and of how it will impact the lives of the many. The task of the engineer is to design and excavate that space as efficiently, safely and cost effectively as possible and to pass over an underground structure that is fit for purpose, durable, and maintenance efficient.

For the ITA family, the big occasion of the Congress was the celebration of the Association's 50th year anniversary. This was commemorated in a special plenary session at which all 17 Presidents of the Association since its founding in 1974 were honoured. Seven of the 17 were in person at the WTC in Shenzhen - Günter Girnau, Germany, 1980-1983; Alfred Haack, Germany, 1998-2001; Andre Assis, Brazil, 2001-2004 (far right); In Mo Lee, S Korea, 2010-2013; Soren Eiskesen, Denmark, 2013-2016; Jenny Jinxiu Yan, China, 2019-2022; and

current President Arnold Dix of Australia, 2022-2025. All are joined in the photograph by current and past members of the ITA Executive Council.

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Another four Past Presidents were present via a video presentation - Einar Broch, Norway, 1986-1989; Sebastiano Pelizza, Italy, 1995-1998; Martin Knights, UK, 2007-2010; and Tarcisio Celestino, Brazil, 2016-2019. Another six were remembered in spirit - Founding President Alan Muir Wood of UK, 1974-1977; Heinz Fischer, Switzerland, 1977-1980; Jack Lemley, USA, 1983-1986; Colin Kirkland, UK, 1989-1992; Dan Zdenek Eisenstein, Canada, 1992-1995; and Harvey Parker, USA, 2004-2007. Each of the Presidents in person recalled the memorable achievement of their presidency and expressed their hopes for the future of the Association. So much has happened over the past 50 years, they all agreed, not least the invention of computers, mobile phones and websites, and their wish for the future - that the Association remains an inclusive professional group where politics remain and the door and that the differences of the expanding family of Member Nations - now 80 with the welcome of the Philippians at this 2024 ITA General Assembly - continues to be embracing, with all helping each other in their underground infrastructure development aspirations and needs.

The celebration continued with launch of a booklet charting the history of the ITA in more than 1000 photographs, and publication of a book celebrating the 50 Iconic Projects of the last 50 years and supported by a video of the same content.

Together with these conference highlights, the delegates of the Congress discovered a vast array of equipment, machines, materials, new systems and services exhibited by the companies present in huge exhibition hall. It would take a week or more to do justice to the exhibits on display by the internationals and the significant and impressive contingent of Chinese companies.

At the same time, the work of the ITA and its management and activity by Working Groups, Committees, task forces, executives and the secretariate support staff continued at this WTC and General Assembly, bringing forward new options for individual membership of the Association, a new category of Observer Nation for those countries wanting to follow a pathway to full membership, and updating the corporate body on the financial health of the organisation.

At the closing ceremony on Wednesday, there was warm and heartfelt thanks to host Member Nation China for staging such an impressive and enjoyable event - 34 years after hosting the international ITA meeting in Chengdu in 1990 - and the baton for the next WTC and General Assembly was passed to Member Nation Sweden for an event to be staged in Stockholm in May 2025. The Gala Dinner closed out proceedings and delegates began bidding each other farewell for this year or joined technical tours for a last chance to marvel at the work being achieved in China as the busiest tunnelling nation on earth - by far - at present.

We meet again next year!

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