

China Wows At Record World Tunnel Congress 2024



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China's remarkable urban development and rapid underground infrastructure expansion was on show when the international underground construction industry gathered for the World Tunnel Congress in Shenzhen from 19th – 25th April. Record numbers of delegates of up to 3,000 representing 60 countries heard from leading central and local Government officials of China and from representatives of the United Nations who extolled the value of the underground dimension as vital for the healthy functioning of society and for addressing critical issues, such as climate change, that confront the global community today.

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, welcomed senior Chinese Government officials and officials of the United Nations to the event, including Mr Ni Hong, Minister of Housing and Urban 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 challenges of the coming decades arising from continued urban expansion, the real and present effects of climate change, and the urgent and continuing need for urban and rural connectivity.

Minister Ni Hong expressed to ITA President, Arnold Dix his appreciation of the work undertaken by the ITA and its commitment in promoting underground opportunities and alternatives worldwide. President Dix assured Minister Ni Hong the Association's continued cooperation in supporting China's underground infrastructure expansion and its rapid advances in excavation and underground infrastructure management technologies.

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In speaking of his work with the United Nations, Mr Michal Mlynár expressed his concern for the world's underprivileged in the face of mounting inequity and the threat of more frequent natural disasters, such as floods, droughts, food shortages, and desperate housing conditions, that increase the number of refugees searching for a better life elsewhere. He was grateful for the invitation to join the WTC and to become more aware of the underground space construction industry and its work in helping to provide a foundation for an improved human life.

Warnings continued in the Muir Wood Lecture presentation, delivered this year by Professor Dr Priscilla 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 presentation – that included clear and accredited facts about the inequality of human existence across the world – Dr Nelson presented stark evidence of the state of the work force in engineering and of the 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," she said.

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 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 underground public infrastructure.

Two plenary Roundtable discussions explored firstly the Challenges and Path of Developing Future Tunnelling Technology. Moderated by Andre Assis of Brazil and a past President of ITA, with panellists Rick Lovat, Canada, Jenny Jinxiu Yan, China, François Renault, France, Wojciech Mleczko, Poland, and Goh Kok Hun, Singapore, who all agreed that the introduction of new innovations into the industry can only be achieved via 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 Zlatanic of USA and Andrea Pigorini of Italy, the panellists included Mrs Buniyamin, 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 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.

The Congress also celebrated 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 at the WTC in Shenzhen – Günter Girnau, Germany, 1980-1983, Alfred Haack, Germany, 1998-2001, Andre Assis, Brazil, 2001-2004, 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.

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 recalled the memorable achievements of their presidency and expressed their hopes that the Association remains an inclusive professional group where politics remains at the door, and that the expanding family of Member Nations – now 80 with the welcoming of the Philippians at this 2024 ITA General Assembly – continues to be all embracing.

The celebration continued with the launch of a booklet charting the history of the ITA through more than 1000 photographs, and the publication of a book celebrating the 50 Iconic Projects over the past 50 years.

The conference featured over 200 papers presented across five sessions, with 300 poster presentations, and eight technical tours. Delegates also discovered a vast array of equipment, machines, materials, new systems and services in the huge exhibition hall housing more than 200 exhibitors.

Concurrently, the work of the ITA and its Working Groups, Committees, task forces, executives and secretariate support staff continued proposing new options for individual membership to the Association, a new category of Observer Nation for those countries wanting to follow a pathway to full membership, and the updating of the corporate body on the financial health of the organisation.

At the closing ceremony on the Wednesday, warm and heartfelt thanks were given to host Member Nation China for staging such an impressive event – 34 years after hosting the international ITA meeting in Chengdu in 1990 – with the baton for the next WTC and General Assembly passed to Member Nation Sweden for the event that will be staged in Stockholm in May 2025.
