

Organised by:

**SOUTHEAST ASIA
INFRASTRUCTURE**

**Indian
Infrastructure**



VIRTUAL CONFERENCE

TUNNEL CONSTRUCTION IN ASIA

Trends, Challenges, Emerging Technologies and New Opportunities

March 9-10, 2021

Sponsors so far:



Tunnel Construction in Asia

Mission

- Tunnel development in Asia is largely driven by investments in the metro rail, railways, roads and highways, hydropower and water and sewerage sectors. The major tunnelling markets in the Asian region are China, Japan, India, South Korea and Singapore. Of late, Malaysia and Nepal have also made significant headway, with increased investments in rail and hydro tunnels.
- Over the past few years, the size of tunnelling projects in Asia has witnessed a substantial increase. Some of the noteworthy projects executed in the recent past are the 9.5 km long tunnel under Kuala Lumpur's New Klang Valley mass rapid transit (MRT) line in Malaysia; the 15.7 km long MRT tunnels in Jakarta in Indonesia; the 8.8 km long Rohtang tunnel in India, the world's longest tunnel at an altitude of above 3,000 metres; 60 metre deep electricity cable tunnels in Singapore; and Japan's 23.3 km long under-seabed rail tunnel.
- The region has progressed quite well in terms of deployment of modern techniques and technologies for tunnel construction. The tunnel boring machine (TBM) technology, the New Austrian Tunnelling Method and the micro tunnelling technique are common features in many projects. Technologies for better geological and geotechnical investigations are also being used. There is greater emphasis on building smart tunnels with integrated traffic control systems, video surveillance systems, wireless communications, entrance detection control systems, electrical fire signalling systems, SOS call boxes, etc. Aerial surveys, photogrammetry-based surveys and GPS-based systems with high accuracy levels are being used for mapping difficult terrain. In addition, new materials are being deployed to improve the durability and strength of tunnels.
- Over the next two to three years, the region is expected to achieve many firsts including the construction of the 14.15 km long Zojila tunnel in India, the longest bi-directional tunnel in the Asian region; the 16.2 km long undersea rail tunnel connecting the city of Ningbo and the island of Zhoushan, the longest such tunnel in China; and the 26 km long Melamchi drinking water project in Nepal.
- However, the Covid-19 pandemic has resulted in challenging times for the tunnelling industry due to reduced construction activity across most Asian countries. While no nation has been spared from the widespread disruption caused by Covid-19, the degree of disruption, timing and country response have varied significantly. More developed markets such as China, Japan and Singapore have witnessed better recovery rates and tunnel construction activity has picked up in these countries.
- Going forward, the tunnelling segment is expected to offer huge opportunities, given the large pipeline of tunnel projects and the increased thrust from governments to infrastructure projects. However, given the challenges posed by the pandemic, contractors and implementing agencies need to deploy innovative and advanced technologies and digital solutions for fast-tracking project execution.
- **The mission of this virtual conference is to analyse the key trends and developments in the tunnel construction market in Asia, discuss the experience and challenges in tunnel construction, and highlight the upcoming opportunities. The conference will also highlight the technologies and best practices in tunnel design, engineering and construction as well as showcase noteworthy projects.**

Target Audience

The event is expected to draw participation from executives, managers and decision-makers from:

- Project developers
- EPC contractors
- Hydropower developers
- Water & Sewage project developers
- Consultants (design and engineering)
- Technology providers (TBMs, excavators, drill rigs, cranes, loaders, roadheaders, shotcrete machines, etc.)
- Metro rail operators
- Road developers
- Railway operators/boards
- Fire safety organisations
- Construction material organisations (steel, cement, grouting, gaskets, soil reinforcement, etc.)
- Etc.

AGENDA (Tentative)

KEY TRENDS, DEVELOPMENTS AND POST-COVID-19 OUTLOOK

- ❖ What have been the key trends and developments in the tunnelling sector?
- ❖ What are the potential challenges in light of Covid-19 (in terms of implementation delays, shortage of labour and raw material, etc.)?
- ❖ What are the new and emerging opportunities and the future outlook?

COUNTRY PLANS AND PERSPECTIVE

- ❖ What have been the key trends and developments in the tunnelling sector?
- ❖ What are the new techniques and technologies being used for tunnel construction?
- ❖ What are the upcoming tunnelling projects?
- ❖ What are the issues and challenges? What is the future outlook?

CONTRACTORS' PERSPECTIVE

- ❖ What has been the experience of contractors? What are the key lessons learnt?
- ❖ What are the biggest issues and challenges? How are they being addressed?
- ❖ What specific steps are being taken to fast-track construction work post the lockdown? What are some of the relief measures announced by the government?

FOCUS ON TUNNEL BORING MACHINE TECHNOLOGY

- ❖ What has been the experience with tunnel boring machine technology? What are its specific features (cost per km, equipment, material and manpower requirements, etc.)?
- ❖ What are the key considerations in the selection of TBM technology? What are the emerging trends and advancements in this field?
- ❖ What are the key issues and challenges? What is the future outlook?

SMART SAFETY SOLUTIONS

- ❖ What have been the recent IT solutions deployed for ensuring safety in tunnel construction, operations and maintenance?
- ❖ What are the new innovations & advancements in the field of safety?
- ❖ What are some of the best practices? What were the challenges faced and the steps taken to overcome them?

DESIGN, ENGINEERING AND PROJECT MANAGEMENT

- ❖ What are the design and engineering practices being followed? What are the new and emerging requirements?
- ❖ What are the technological advancements & innovations in this field?
- ❖ What are some of the best practices and noteworthy projects? What lessons can be learnt from the experience of these projects?

OTHER TECHNIQUES/METHODS OF TUNNELLING (NATM, DBM, MICRO-TUNNELLING, ETC.)

- ❖ What has been the experience with the other techniques/methods of tunnelling? What are their specific features (cost per km, equipment, material and manpower requirements, etc.)?
- ❖ What are the key considerations in the selection of the technique/method of tunnelling?
- ❖ What are the key issues and challenges? What is the future outlook?

CHALLENGES AND RISKS IN COMPLEX TERRAIN

- ❖ What has been the experience in tunnel construction in geographically difficult locations?
- ❖ What are the challenges associated with the planning, design and construction of long-span tunnels? How are these being addressed?
- ❖ What are some of the noteworthy projects? What can be learnt from them?

FOCUS ON CONSTRUCTION MATERIALS

- ❖ What are the new and emerging material requirements for tunnel construction (steel, cement, anchors, explosives, girders, admixtures, etc.)?
- ❖ What are the new options and innovations (shotcrete material, fibre and rock reinforcement, geosynthetics, etc.)?
- ❖ What are some of the noteworthy initiatives in this space? What have been the associated cost savings?

SEGMENT FOCUS: CURRENT PRACTICES, EXPERIENCE AND UPCOMING PROJECTS

- ❖ METRO RAIL TUNNELS
- ❖ RAIL TUNNELS
- ❖ ROAD TUNNELS
- ❖ HYDRO TUNNELS
- ❖ WATER AND SEWAGE TUNNELS
- What has been the experience in tunnel construction?
- What are the techniques/methods currently deployed for tunnel construction? What are the new trends and advancements in this field?
- What are some of the noteworthy projects? What are the key lessons learnt from their experience?
- What has been the impact of Covid-19 on project delivery and implementation? What strategies are being considered to fast-track implementation?

(contd...)

AGENDA (Tentative) contd...

EQUIPMENT SHOWCASE (EXCAVATORS, DRILL RIGS, CRANES, LOADERS, ROADHEADERS, SHOTCRETE MACHINES, ETC.)

- ❖ What are the emerging trends and advancements in the equipment segment?
- ❖ How is the industry gearing up to meet the emerging equipment requirements for tunnel construction post Covid-19?
- ❖ What have been the biggest challenges? How are they being addressed?

PROJECT SHOWCASE AND CASE STUDIES

- ❖ What are some of the notable operational/under-construction tunnel projects?
- ❖ What are their innovative features?
- ❖ What has been the execution experience and challenges faced? What were the benefits delivered?

ABOUT THE ORGANISER

The conference is being organised by **India Infrastructure Publishing**. India Infrastructure Publishing is a company dedicated to providing information on the infrastructure sectors in India through magazines, conferences, newsletters and research reports. We bring out high-quality, world-class products backed by over two decades of experience, an extensive knowledge base, as well as relationships with all key stakeholder groups across the infrastructure sectors: power, renewable energy, oil & gas, ports & shipping, roads & bridges, telecommunications, aviation, railways, water, health, housing, banking & infra finance. We also publish a series of reports, including **Tunnelling in India**, **Hydro Power in India**, **Urban Rail in India**, **Road Development in India** and **Railways in India**.

The company publishes **South East Asia Infrastructure** and **Indian Infrastructure** magazines.

South East Asia Infrastructure magazine (www.southeastasiainfra.com) is a leading source of information on infrastructure development in Southeast Asia. It tracks key developments, analyses emerging trends, features industry players and perspectives, highlights key initiatives, and profiles exemplary projects.

Indian Infrastructure magazine (<https://indianinfrastructure.com>) is targeted at the very top decision-makers and financial managers in the infrastructure sectors. The sectors covered include power, telecom, roads & bridges, construction, oil & gas, ports & shipping, aviation, railways, urban infrastructure and infrastructure finance. The magazine provides news, information and analysis of the latest developments related to policy, projects and investments in these sectors in India. It is published monthly.

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The organisations that have participated in our previous conferences on “Tunnel Construction in India” include **Aarvee Associates, Adcos, AECOM, AF Colenco, Afcons, Aker, Aldesa, Amberg Engineering, Bangalore Metro Rail Corporation, BeKaert, Border Roads Organisation, Chennai Metro Rail, CMRL, COWI, Dassault, DFCCIL, Delhi Jal Board, Dextra India, Delhi Metro Rail Corporation, Draeger Safety, DRDO, DSI Bridgecon, Duraflex, Dywidag, Egis, FOGTEC, Gammon, Gates, Geoconsult, Geo Constech, Geodata, Giertsen Tunnel, GMR, GMW, HCC, Herrenknecht, Hill International, Hitachi Zosen, Hochtief, ILF Asia, IRB Infrastructure, Ircan International, Isolux Corsan, ITD Cementation, Jaipur Metro, JCB, Jindal power, Jindal Steel, JMC Projects, JSW Infrastructure, K Rajagopalan & Co, KEC International, Kolkata Metro Rail Corporation, Kross Air Distribution Systems, Konkan Railway Corporation, Krishna Hydro Projects, KSK Dibbin Hydro Power, Kutch Railways, Larsen & Toubro, Lahmeyer, Leighton, L&T, Leica Geosystems, Lombardi, Louis Berger, Lucknow Metro Rail Corporation, MC Bauchemie, Mumbai Metro, Mumbai Rail Vikas Corporation, Mumbai Metropolitan Region Development Authority, Municipal Corporation of Greater Mumbai, Newkem, NHAI, NHIDCL, NHPC, National High Speed Rail Corporation, Nina Precept, Normet, North East Frontier Railway, Northern Railway, NTPC, OBO Betterman, Outokompu, Patel Engineering, Poyry, Precision Drawell, Railway Board, Ramboll, RDSO, Renesco, Rex Polyextrusion, RITES, Robbins, RVNL, Sandvik, Savronik Sistem, SERING Ingegneria, SEW Infrastructure, Sika India, Simplex Infrastructure, SJVN, SMC India, SMEC, SMS Infrastructure, SNC Lavalin Engineering, Spectrum, Star Drilling, Sterling Wilson, Sunil Chemicals, SUCG Infrastructure, Systemair, Systra MVA Consulting, TAM Construction Chemicals, TCE, Telcon, Telega DOO, Terratec, THDC, Tata Power, Tata Projects, Tej Engineering, Totem, etc.**

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	Price
1 Logins	USD 250
2-3 Logins	USD 400
4-5 Logins	USD 550
6-9 Logins	USD 700
10-20 Logins	USD 850

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All credit card payments will be subject to standard credit card charges

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- Substitutions/name changes are welcome at no extra charge. Please send these in writing at least two days prior to the conference.
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