

Organisers:



13th Annual Conference

# TUNNEL CONSTRUCTION IN INDIA

Emerging Trends, New Technologies and Opportunities  
June 6-7, 2022 | ITC Maratha, Mumbai

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# TUNNEL CONSTRUCTION IN INDIA

## Mission

- The tunnelling segment has seen increased activity in the past two to three years both in terms of project award as well as work on the ground. Longer and larger tunnels are being developed. In the past two years, more than 110 km of tunnel length has been constructed across railways, metro, hydropower, roads and water sectors. Another 1,390 km is in various stages of construction.
- New technologies and techniques are also being adopted to ensure better execution of the tunnelling projects. TBM and NATM technologies are being used for construction of metro, rail, road and highway projects. Another method of tunnelling that has been witnessing increasing acceptance is micro-tunnelling or the trenchless construction method. Meanwhile, drill & blast method continues to be the dominant mode of tunnelling, especially in the Himalayan region and the Western Ghats.
- Greater emphasis is being given to safety in design and operation of tunnels. Tunnels are being deployed with smart and intelligent features such as integrated tunnel control systems, video surveillance, wireless communication systems, entrance detection control and electrical fire signalling systems.
- Contracting practices have also evolved from item-rate contracts to engineering, procurement and construction and design-build-operate contracts. Contractors are paying greater attention to project design, implementation and timely completion. New and advanced features have been added to tunnelling equipment, thereby increasing efficiency. Internet of things is also being implemented by players on big machines. The quality of construction materials used has also improved with advanced materials such as geotextiles, waterproofing membranes, fibre and rock reinforcements witnessing greater deployment.
- Going forward, the overall outlook for tunnel development in the country remains promising. According to India Infrastructure Research, the tunnelling segment offers a strong pipeline of 895 tunnels, spanning a length of over 2,700 km. Over the next two to three years, the tunnelling sector will offer multifold opportunities across sectors. This holds immense promise for engineering, procurement and construction contractors, consultants, technology and equipment providers, construction material supplies, etc. over the long term.
- **The mission of this conference is to highlight the recent trends and developments, discuss the key challenges and discuss the emerging tunnelling technologies across various sectors. The conference will also showcase the noteworthy projects and best practices.**

## Target Audience

The conference is targeted at top and middle-level managers from:

- Project Developers
- Metro Rail Operators
- Water & Sewage System Developers
- Hydro Power Developers
- Technology Providers (TBMs, excavator, drill rigs, cranes, loaders, roadheaders, shotcrete machines, etc)
- Consultants and Design Service Providers
- EPC Contractors
- Indian Railways
- Urban Local Bodies
- Irrigation Companies
- Etc.

## Previous Participants

*The organisations that have participated in our previous conferences on “Tunnel Construction in India” include Aarvee Associates, ADCOS, AECOM, Afcons Infrastructure, Aker, Aldesa, Amberg, Ambuja Cements, Alccofine Micro Materials, Atkins, Bangalore Metro Rail Corporation, Bekaert, Border Roads Organisation, CH2M Hill, Chennai Metro Rail Corporation, COWI, Dassault, DFCCIL, Delhi Jal Board, Dextra, Delhi Metro Rail Corporation, DRDO, DSI Bridgecon, DSI-Dywidag, EGIS, FOGTEC, Gammon, Gates India, Geoconsult, Geo Constech, Geodata, Giertsen Tunnel, GMR, GMW, GR Infraprojects, Grenix Project, Gujarat Metro Rail Corporation, GVK Group, Halfen, HCC, Herrenknecht, Hill International, Hitachi Zosen, HPPCL, Hochtief, HPRIDC, ILF Asia, IRB Infrastructure, IRCON International, Isolux Corsan, ITD Cementation, J&K SPDC, J Square, Jaipur Metro Rail Corporation, Jal India, JCB India, Jindal power, Jindal Steel, JMC Projects, JSW Infrastructure, K Rajagopalan & Co, Kalpan Hydro, Kameng Dam Hydro Power, 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, Lanco, Leighton, L&T Construction, Leica Geosystems, Lombardi, Louis Berger, Lucknow Metro Rail Corporation, Mallcom, Marti India, MBL Infrastructures, MC Bauchemie, Mekaster, MIT, Mitsui, Modern Road Makers, Monnet Projects, Mumbai Metro Rail Corporation, Mumbai Rail Vikas Corporation, Mumbai Metropolitan Region Development Authority, Municipal Corporation of Greater Mumbai, MYK Arment, Nagarjuna Construction Company, Nagpur Metro Rail Corporation, NCRTC, Newkem, NHAI, NHIDCL, NHPC, National High Speed Rail Corporation, Nina Concrete, Normet, North East Frontier Railway, Northern Railway, NTPC, OBO Betterman, Outokompu, Patel Engineering, Poyry, Pratibha Industries, Precision Drawell, PWD- Mumbai, Rail Vikas Nigam, Ramboll, RDSO, Reinforced Earth India, Renesco, RITES, Robbins, Sandvik, Savronik Sistem, SERING Ingegneria, SEW Infrastructure, Sika India, Simplex Infrastructure, SJVN, SMC India, SMEC, SMS Infrastructure, SNC Lavalin Engineering, SUCG Infrastructure, Systemair India, Systra MVA Consulting, TAM Construction Chemicals, TCE, Telcon, Telegra DOO, Terratec, THDC, Tata Power, Tata Projects, Tej Engineering, Totem, Uttar Pradesh Metro Rail Corporation, etc.*



## AGENDA/STRUCTURE

### TRENDS, DEVELOPMENTS AND OUTLOOK

- What have been the key trends and developments in the tunnelling sector?
- What are the new and emerging opportunities?
- What are the key challenges and the future outlook?

### CONTRACTORS' VIEWPOINT: EXPERIENCE AND UNADDRESSED CHALLENGES

- 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 is the short-term outlook for the tunnelling segment?

### ADVANCEMENTS IN ENGINEERING AND CONSTRUCTION PRACTICES

- What are the new trends and advancements in engineering and construction of tunnels?
- What has been the trend in the uptake of new technologies and solutions for tunnel construction?
- What are the specific issues and challenges?

### FOCUS ON HVAC SYSTEMS IN TUNNELS

- What are the new and emerging requirements for HVAC systems (fire safety, ventilation, lighting, etc.)?
- What are the recent trends and advancements in this space?
- What are the specific issues and challenges?

### ADVANCEMENTS IN GEOTECHNICAL INVESTIGATIONS, DESIGN AND MONITORING

- What are the geotechnical investigation, survey and monitoring practices being followed? What are the new and emerging requirements?
- What are the technological advancements and innovations in this field?
- What are the specific issues & challenges? How are they being addressed?

### METRO RAIL TUNNELS: EXPERIENCE AND CHALLENGES WITH TBM TECHNOLOGY

- What has been the experience in metro rail tunnel construction?
- What are the techniques/methods currently deployed for metro tunnel construction? What are the recent trends and advancements in TBM tunnelling?
- What are some of the noteworthy projects? What are the key lessons learnt from their implementation?

### EQUIPMENT SHOWCASE

- 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?
- What have been the biggest challenges? How are they being addressed?

### EMERGING TUNNEL CONSTRUCTION TECHNIQUES: EXPERIENCE, CHALLENGES AND NEW OPPORTUNITIES

#### NATM Technology and Microtunnelling

- What has been the experience with NATM/microtunnelling? What are its specific features (in terms of cost per km, equipment, material and manpower requirements, etc.)?
- What are the emerging trends and advancements in this field??
- What are some of the best practices and noteworthy projects? What lessons can be learnt from the experience?

### SEGMENT FOCUS: PROJECTS, TECHNOLOGIES AND OPPORTUNITIES

#### Rail Tunnels

#### Hydropower Tunnels

#### Roads and Highways

#### Water and Sewage Tunnels

- What has been the experience in tunnel construction in the segment?
- What are the techniques/methods currently deployed for construction? What are the new trends and advancements in this field?
- What are the biggest issues and challenges?

### SMART SAFETY AND INSPECTION SOLUTIONS

- What are the emerging trends and advancements in safety and inspection of tunnels?
- What are the new technologies, automation and robotic solutions available in this space?
- What are some of the best practices? What were the challenges faced and the steps taken to overcome them?

### CHALLENGES AND STRATEGIES FOR TUNNELLING IN HIMALAYAN REGION

- What has been the experience in tunnel construction in the Himalayan region?
- 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 are the key lessons learnt?

### ADVANCEMENTS IN ROCK BLASTING AND EXCAVATION TECHNIQUES

- What has been the experience in tunnel construction in hard rock strata?
- What are the challenges associated with the drilling, blasting and excavation? How are these being addressed?
- What are some of the noteworthy projects? What can be learnt from them?

### NEW MATERIAL REQUIREMENTS

- 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? What have been the associated cost savings?

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## Registration Fee

Fee

Delegates	INR	GST@18%	Total INR	Total USD
One delegate	25,000	4,500	29,500	450
Two delegates	40,000	7,200	47,200	700
Three delegates	55,000	9,900	64,900	950
Four delegates	70,000	12,600	82,600	1,200

- GST @18 per cent is applicable on the registration fee.
- Registration will be confirmed on receipt of the payment

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