



9th Annual Conference on

TUNNEL CONSTRUCTION IN INDIA

Needs & Requirements, Strategies and Solutions

May 14-15, 2018, Grand Hyatt, Mumbai

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TUNNEL CONSTRUCTION IN INDIA

Mission

- The tunnel construction industry has witnessed positive breakthroughs in the past few years. A total of 1,900 km of tunnel length has been constructed so far, and about 3,000 km is either under construction or is planned to be taken up in the future. Hydro tunnels account for the largest share, followed by railways, irrigation, metro rail, water supply and sewerage, and roads and highways.
- Important tunnels such as the Chenani-Nashri road tunnel, the Banihal-Quazigund rail tunnel, the Kashang hydro tunnel and Teesta 3 have been commissioned. A number of tunnels have also been completed for Delhi, Kolkata and Chennai metro projects.
- Meanwhile, many landmark and challenging projects are under execution. These include the 14 km Zojila tunnel, the 9 km Rohtang tunnel on the Leh-Manali highway and the 11.55 km tunnel on the Jiribam Tupul-Imphal rail line.
- While conventional methods dominate the railway and hydro segments, mechanised methods such as TBM and NATM are gaining traction in the metro and road segments. In special cases/conditions, techniques/methodologies such as the P5 system and ground freezing are being used.
- Besides, contractors are experimenting with new and innovative materials such as geo-synthetics, geo-membrane, steel anchors and self-drilling rock bolt.
- There is a growing focus on smart/intelligent tunnels, which feature integrated traffic control system, video surveillance, wireless communication, entrance detection control, electrical fire signalling, SOS call boxes, etc. The Chenani-Nashri tunnel is a case in point.
- Geological complexities continue to be the biggest challenge, more so in the Himalayan region and the Western Ghats. Soil and rock investigation, analysis of ground behaviour during tunnelling and proper assessment of risks are important considerations.
- Going ahead, big investments in infrastructure across segments will give a push to tunnel construction. The railways' capex target for 2018-19 is at an all-time high of Rs 1.48 trillion. Hydropower capacity is expected to increase by 13 GW in the next five to six years. Around 10 per cent of the upcoming length under metro rail projects is planned as underground.
- Besides, centrally sponsored programmes such as Bharatmala, Chardham Connectivity, AMRUT, and the Smart Cities Mission will offer ample opportunities to tunnel contractors, consultants, equipment and technology providers.
- **The mission of this conference is to highlight the opportunities in tunnelling, examine the key challenges and discuss possible solutions. It will provide a platform to showcase recent innovations in technology and equipment. It will also showcase noteworthy projects and best practices.**

Target Audience

The conference is targeted at:

- MRTS project developers
- Equipment providers
- Hydropower generators
- Fire protection and safety system providers
- Water and sewerage system developers
- Communication and security equipment suppliers
- Indian Railways
- Consultancy and design service providers
- Road developers
- Urban local bodies and relevant government agencies
- Pollution control and ventilation equipment manufacturers
- Tunnel design and construction organisations
- Civil contractors
- Technology providers
- Other service providers, etc.

Previous Participants

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, Ambuja Cements, Alcofine Micro Materials, Atkins, Atlas Copco, Bajaj Allianz, Bangalore Metro Rail Corporation, Bekaert, Border Roads Organisation, Cads Software, Chicago Pneumatic Construction Equipment, CH2M Hill, Chennai Metro Rail, CMRL, COWI, Dassault, DFCCIL, Delhi Jal Board, Dextra India, DMRC, Draeger Safety India, DRDO, DSI Bridgecon, Duraflex, Dywidag, Egis, ES Ein Shemer Rubber, Essar Power, Essel Infraprojects, Eurostar Engineering, FOGTEC, Gammon, Gates India, Geoconsult, Geo Constech, Geodata, Giertsen Tunnel, GMR, GMW, GR Infraprojects, Grenix Project, GVK Group, Halfen, HCC, Herrenknecht, Hill International, Hitachi Zosen, HPPCL, Hochtief, HPRIDC, IL&FS Transportation Networks, ILF Asia, IRB Infrastructure, Ircon International, Isolux Corsan, ITD Cementation, ITNL, J&K SPDC, J Square, Jaipur Metro, Jal India, JCB India, Jindal power, Jindal Steel, JMC Projects, JSW Infrastructure, K Rajagopalan & Co., Kalpan Hydro, Kalpataru Power Transmission, 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, Laviosa India, Leica Geosystems, Lombardi, Louis Berger, Mallcom, Marti India, MBL Infrastructures, MC Bauchemie, Mekaster, MIT, Mitsui, Modern Road Makers, Monnet Projects, Mumbai Metro, Mumbai Rail Vikas Corporation, Municipal Corporation of Greater Mumbai, Nagarjuna Construction Company, National Academy of Railways, Newkern, NHAI, NHIDCL, NHPC, Nina Concrete, NIS Marketing, Normet, North East Frontier Railway, Northern Railway Construction, NTPC, OBO Betterman, Outokompu, Patel Engineering, Poyry, Pratiiba Industries, Precision Drawell, Promat India, Punj Lloyd, PWD, Rail Vikas Nigam, Railway Board, Ramboll, RDSO, Reinforced Earth India, Renesco, Rex Polyextrusion, RITES, Robbins, RVNL, Sammon Infracorp, 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, Systemair India, Systra MVA Consulting, TAM Construction Chemicals, TCE, Telcon, Telegra DOO, Terratec, THDC, Tata Power, Tata Projects, Tej Engineering, Totem Infra, Tractors India, Transstroy India, TROX India, Tvastar Engineering, Uniquist Infra, Unity Infraprojects, Ultra Tech Cement, Vayam Technologies, Vijay Nirman Company, Welspun, etc.

AGENDA/STRUCTURE

KEY TRENDS AND OUTLOOK

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

CONTRACTORS' PERSPECTIVE

- ❖ What has been the experience of contractors?
- ❖ What have been the key challenges and lessons learnt?
- ❖ What are the future plans/priorities?

TUNNELLING METHODS AND TECHNIQUES - MECHANISED

- ❖ What are the most prevalent mechanised methods for tunnel construction (TBM, NATM, Trenchless Boring, etc.)?
- ❖ Where are they most applicable? What are the pros and cons?
- ❖ What are the key issues and challenges?

CONVENTIONAL TUNNELLING METHODS AND TECHNOLOGIES

- ❖ What are the most prevalent conventional methods for tunnel construction (drill and blast, cut and cover, etc.)?
- ❖ Where are they most applicable? What are the pros and cons?
- ❖ What are the key issues and challenges?

FOCUS ON PLANNING AND DESIGN

- ❖ What are the current practices?
- ❖ What are the cost and technical considerations at the planning stage?
- ❖ What are the key issues and challenges?

SPOTLIGHT ON SAFETY

- ❖ What are the current practices?
- ❖ What are the technological advancements in the safety and surveillance of tunnels?
- ❖ What can be learnt from the global experience?

SPOTLIGHT ON VENTILATION AND FIRE PROTECTION

- ❖ What are the current practices with regard to ventilation and fire protection systems?
- ❖ What can be learnt from the global experience?

EQUIPMENT AND TECHNOLOGY SOLUTIONS

- ❖ What are the key equipment requirements for tunnel construction?
- ❖ What are the recent technology developments and innovations in India and globally?
- ❖ What are the key issues and challenges? What is the outlook?

CHALLENGES AND STRATEGIES FOR TUNNELLING IN DIFFICULT TERRAIN

- ❖ What has been the tunnelling experience in the Himalayan region and the Western Ghats?
- ❖ What are the various risks involved?
- ❖ How can modern tunnel construction technologies help in managing such complexities?

GEOTECHNICAL INVESTIGATIONS

- ❖ What are the geotechnical investigation requirements for tunnel projects?
- ❖ What are the advancements in instruments and techniques for geotechnical investigations?
- ❖ What are the key challenges? How can they be addressed?

FOCUS ON SEISMIC CONSIDERATIONS

- ❖ What are the various seismic design specifications?
- ❖ What methods have been used in India to make the structures earthquake resilient?
- ❖ What are some of the noteworthy examples in India and abroad?

MATERIAL FOR TUNNEL CONSTRUCTION

- ❖ What are the material requirements and specifications? What are the new and innovative materials being used?
- ❖ What are some of the global advances?

METRO RAIL TUNNELS: PROJECT AND TECHNOLOGY SHOWCASE

- ❖ What has been the experience with metro tunnel construction? What are the key trends?
- ❖ What are the most prevalent techniques and methods for tunnelling?
- ❖ Which are some of the noteworthy projects? What can be learnt from them?
- ❖ What are the key issues and challenges?

HYDRO TUNNELS: PROJECT AND TECHNOLOGY SHOWCASE

- ❖ What has been the experience with hydro tunnel construction? What are the key trends in this space?
- ❖ What are the most prevalent techniques and methods for tunnelling?
- ❖ Which are some of the noteworthy projects? What can be learnt from them?
- ❖ What are the key challenges?

RAIL TUNNELS: PROJECT AND TECHNOLOGY SHOWCASE

- ❖ What has been the experience with rail tunnel construction? What are the key trends?
- ❖ What are the most prevalent techniques and methods for tunnelling?
- ❖ Which are some of the noteworthy projects? What can be learnt from them?
- ❖ What are the key challenges?

ROAD TUNNELS: PROJECT AND TECHNOLOGY SHOWCASE

- ❖ What has been the experience with rail tunnel construction? What are the key trends?
- ❖ What are the most prevalent techniques and methods for tunnelling?
- ❖ Which are some of the noteworthy projects? What can be learnt from them?
- ❖ What are the key challenges?

WATER AND SEWAGE TUNNELS: PROJECT AND TECHNOLOGY SHOWCASE

- ❖ What has been the experience with water and sewage tunnel construction? What are the key trends?
- ❖ What are the most prevalent techniques and methods for tunnelling?
- ❖ Which are some of the noteworthy tunnel projects? What can be learnt from them?
- ❖ What are the key challenges?

IRRIGATION TUNNELS: PROJECT AND TECHNOLOGY SHOWCASE

- ❖ What has been the experience with tunnel construction in this segment? What are the key trends?
- ❖ What are the most prevalent techniques and methods for tunnelling?
- ❖ Which are some of the noteworthy tunnel projects? What can be learnt from them?
- ❖ What are the key challenges?

Organisers

The conference is being organised by **India Infrastructure Publishing**, the leading provider of information on the infrastructure sectors through magazines, newsletters, reports and conferences. The company publishes **Power Line** magazine, **Power News** (a weekly newsletter), and a series of reports, including **Tunnelling in India**, **Hydro Power in India**, **Urban Rail in India**, **Road Development in India** and **Railways in India**.

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One delegate	20,000	3,600	23,600	393	25,000	4,500	29,500	492
Two delegates	32,000	5,760	37,760	629	40,000	7,200	47,200	787
Three delegates	44,000	7,920	51,920	865	55,000	9,900	64,900	1,082
Four delegates	56,000	10,080	66,080	1,101	70,000	12,600	82,600	1,377

- There is a 20 per cent "early bird" discount for those registering before April 24, 2018.
- There is a special low fee of Rs 5,000 per participant for state-owned hydro power producers, PWDs, ULBs, Indian Railways, metro rail corporations, research organisations and academic institutions.
- To register online, please log on to <http://indiainfrastructure.com/conf.html>
- Registration will be confirmed on receipt of the payment.

Payment Policy:

- Full payment must be received prior to the conference. Payments for "early bird" registrations should come in before the last date of discount.
- Conference fees cannot be substituted for any other product or service being extended by India Infrastructure Publishing Pvt. Ltd.
- Conference fee includes lunch, tea/coffee and conference material.

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