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11th Annual Conference

TUNNEL CONSTRUCTION IN INDIA

Experience & Challenges; New Technologies & Opportunities

April 21-22, 2020, ITC Maratha, Mumbai

Organisers:



Co-sponsor so far:*



*Sponsorship slots are available

MEET THE PROJECT DEVELOPERS



TUNNEL CONSTRUCTION IN INDIA

Mission

- Tunnel development in the country is driven by investments in the metro rail, railway, roads and highways, hydropower, underground crude oil storage, and water and sewerage segments. Over the past few years, the size of tunneling projects has witnessed a substantial increase. A number of landmark and challenging tunnel construction projects are under execution -- the Katra-Banihal railway line in Jammu & Kashmir (with a total tunnel length of 163 km), the Kaleshwaram Lift Irrigation Scheme (with a total tunnel length of 203 km) and the 33.5 km Mumbai Metro Line 3, as well as the Mumbai-Ahmedabad high-speed rail project (7-km undersea tunnel).
- With regard to tunnel construction techniques and technologies, the tunnel boring machine (TBM) and the New Austrian Tunnelling Method (NATM) are gaining traction for tunnelling activities in urban areas. Another advanced method which is seeing increasing acceptance is micro-tunnelling. Nevertheless, conventional techniques such as the drill and blast method (DBM) continue to play a dominant role in the execution of tunnel construction projects.
- There is an increased demand for high-tech equipment as geological complexities are the biggest challenge in tunnelling projects. Meanwhile, navigation systems, computerised jumbos and advanced drilling systems are being deployed for precision and better monitoring. New materials are also being deployed to improve the durability and strength of tunnels.
- However, the tunnelling segment continues to struggle with the issues of inadequate investigation, geological complexities, and mismanaged contracts although there has been some improvement on these fronts. Projects have also been stalled or surrendered due to contractual issues.
- Going forward, there will be a huge number of potential opportunities across multiple sectors, given the large pipeline of projects. The tunnelling segment holds immense promise for EPC contractors, technology and equipment providers, etc. over the long term.
- **The mission of this conference is to discuss the trends and developments, and highlight the opportunities and challenges in the tunnelling segment. The conference will provide a platform to showcase noteworthy projects, best practices as well as the recent innovations in technology and equipment.**

Target Audience

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

- Project Developers
- Metro Rail Operators
- Consultants and Design Service Providers
- Hydro Power Developers
- Technology Providers (TBMs, excavator, drill rigs, cranes, loaders, roadheaders, shotcrete machines, etc)
- EPC Contractors
- Indian Railways
- Urban Local Bodies
- Irrigation Companies
- Water & Sewage System Developers
- 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 | Alkins | 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 Eln Shemer Rubber | Essar Power | Essel Infraprojects | Eurostar Engineering | FOGTEC | Gammon | Gates India | Geoconsult | Geo Constech | Geodata | Gertsen 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 | Itron 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 Transmision | 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 | Lelca Geosystems | Lombardi | Louis Berger | Lucknow Metro Rail Corporation | Mallcom | Marti India | MBL Infrastructures | MC Baucherme | Mekaster | MIT | Mitsui | Modern Road Makers | Monnet Projects | Mumbai Metro | Mumbai Rail Vikas Corporation | Mumbai Metropolitan Region Development Authority | Municipal Corporation of Greater Mumbai | Nagarjuna Construction Company | National Academy of Railways | Newkem | NHAI | NHIDCL | NHPC | National High Speed Rail Corporation | Nina Concrete | NIS Marketing | Normet | North East Frontier Railway | Northern Railway | NTPC | OBO Betterman | Outokumpu | Patel Engineering | Poyry | Pratibha 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 | SUGG Infrastructure | 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 | Tvestar Engineering | Uniquest Infra | Unity Infraprojects | Ultra Tech Cement | Vayam Technologies | Vijay Nirman Company | Welspun | etc.

Previous Speakers

- Ashwani Bhide, Mumbai Metropolitan Regional Development Authority
- Saibaba Ankala, Indian Railways
- R.B Bamble, Municipal Corporation of Greater Mumbai
- Purnachandra Bhawe, Afcons
- Arindom Chakrabort, NHPC
- D.P. Deshmukh, Mumbai Metro Rail Corporation
- S.K. Dharmadhikari, NHAI
- R.N. Dwivedi, Chennai Metro Rail Corporation
- Ashish Gupta, Gammon
- N.C. Karmali, Kolkata Metro Rail Corporation
- A.H. Khan, Mumbai Metro, L&T Construction
- Dr Florian Krenn, Geoconsult India
- Satish Kumar Sharma, HCC
- R.R. Kumar and Abhijeet Chaudhary, Mumbai Metro Rail Corporation
- R. Rajendra Kumar, Afcons Infrastructure
- Stephen Lowry, Delhi Metro Rail Corporation
- Parikshit Mehra, Border Roads Organisation
- G.B. Nagendra, Konkan Railway Corporation
- Ram Gopal Saini and Sushil Kumar Gupta, Mega Metro Engineering
- C.Sankaralingam, L&T Construction
- Ashwani Saxena, Jaipur Metro Rail Corporation
- Vijay Sharma and Sandeep Gupta, USBRL Project, Northern Railway
- U.P. Singh, NHRCL
- Hari Singh, Northeast Frontier Railway
- Dr D. V. Subrahmanyam, Rail Vikas Nigam
- Sunilkumar Vishwakarma, Tata Projects

AGENDA/STRUCTURE

CONSTRUCTION EXPERIENCE, NEW REQUIREMENTS & CHALLENGES

TRENDS, DEVELOPMENTS AND OUTLOOK

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

CONTRACTORS' PERSPECTIVE: CONTRACTING PRACTICES AND UNADDRESSED ISSUES

- ❖ 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 are their expectations from the government and other stakeholders?

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 in this field?
- ❖ What are some of the best practices and noteworthy projects? What lessons can be learnt from the experience of these projects?

FOCUS ON SAFETY REQUIREMENTS

- ❖ What are the current safety requirements for tunnel construction?
- ❖ What are the technological advancements in this field?
- ❖ What are the new initiatives/measures being taken to improve tunnel safety? What can be learnt from the global experience?

CHALLENGES AND RISKS IN HIMALAYAN AND WESTERN GHATS

- ❖ 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 were the associated cost savings?

FOCUS ON MEP SYSTEMS (POWER SUPPLY, TUNNEL VENTILATION, LIGHTING, FIRE FIGHTING, TRAFFIC MANAGEMENT, ETC.)

- ❖ What are the new and emerging requirements for MEP systems?
- ❖ What are the recent trends and advancements in this field?
- ❖ What are some of the noteworthy initiatives? What are the challenges and lessons learnt?

ALTERNATIVE USES OF TUNNEL CONSTRUCTION WASTE

- ❖ What are the current practices in handling tunnel construction waste?
- ❖ What are the alternative uses of the construction debris? What are some of the best practices in this space?
- ❖ What are the key issues and challenges?

EXPERIENCE SO FAR, NOTEWORTHY PROJECTS AND UPCOMING OPPORTUNITIES

METRO RAIL TUNNELS

- ❖ What has been the experience with metro rail tunnel construction?
- ❖ What are the techniques/methods currently deployed for construction? What are the new trends and advancements in this field?
- ❖ What are some of the noteworthy projects? What are the challenges and lessons learnt?

RAIL TUNNELS

- ❖ What has been the experience with rail tunnel construction?
- ❖ What are the techniques/methods currently deployed for construction? What are the new trends and advancements in this field?
- ❖ What are some of the noteworthy projects? What are the challenges and lessons learnt?

ROAD TUNNELS

- ❖ What has been the experience with rail tunnel construction?
- ❖ What are the techniques/methods currently deployed for construction? What are the new trends and advancements in this field?
- ❖ What are some of the noteworthy projects? What are the key challenges and lessons learnt?

HYDRO TUNNELS

- ❖ What has been the experience with hydro tunnel construction?
- ❖ What are the techniques/methods currently deployed for construction? What are the new trends and advancements in this field?
- ❖ What are some of the noteworthy projects? What are the key challenges and lessons learnt?

IRRIGATION, WATER AND SEWAGE TUNNELS

- ❖ What has been the experience with irrigation, water and sewage tunnel construction?
- ❖ What are the techniques/methods currently deployed for construction? What are the new trends and advancements in this field?
- ❖ What are some of the noteworthy projects? What are the key challenges and lessons learnt?

UNDERGROUND CRUDE OIL CAVERNS

- ❖ What has been the experience with construction of underground crude oil caverns?
- ❖ What are the techniques/methods currently deployed for construction? What are the new trends and advancements in this field?
- ❖ What are some of the existing projects? What are the key challenges and lessons learnt?

TECHNOLOGY AND EQUIPMENT SHOWCASE

DRILL AND BLAST METHOD

- ❖ What has been the experience with DBM? What are its specific features (in terms of cost per km, equipment, material & manpower requirements, etc.)?
- ❖ What are the recent trends and advancements in this field? What are the global best practices?
- ❖ What are the key issues and challenges? What is the future outlook?

NEW AUSTRIAN TUNNELING METHOD

- ❖ What has been the experience with the NATM? What are its specific features (in terms of cost per km, equipment, material & manpower requirements, etc.)?
- ❖ What are the recent trends and advancements in this field? What are the global best practices?
- ❖ What are the key issues and challenges? What is the future outlook?

TUNNEL BORING MACHINE TECHNOLOGY

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

TRENCHLESS TECHNOLOGIES: MICRO TUNNELLING AND HORIZONTAL DIRECTIONAL DRILLING

- ❖ What has been the experience with trenchless technologies? What are its specific features (in terms of cost per km, equipment, material & manpower requirements, etc.)?
- ❖ What are the recent trends and advancements in this field? What are the global best practices?
- ❖ What are the key issues and challenges? What is the future outlook?

FOCUS ON EQUIPMENT (EXCAVATOR, 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?
- ❖ What are the key issues and challenges?

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