

REGISTRATION

The registration fee payable by the participants, including, for participation in the workshop is as follows:

Delegate/ Author	Research Student
Rs. 10,000*	Rs. 5,000*

* Service tax extra @ 15.00%.

10% discount will be given to Members of CBIP, TAI and ISRM.

EXHIBITION

Table Top exhibition facility will be provided to the sponsors organisations at the venue of the Conference. The exhibition will provide a scope to present the new technologies, materials and mechanisms including software. Participants will enjoy sufficient time and opportunity to inspect the exhibition, and exhibitors will have an excellent opportunity of accessing a large number of potential buyers/decision

SPONSORSHIP

The Conference will provide an excellent opportunity to national and international organizations; central / state government organizations, public sector undertakings, industrial organizations, equipment manufacturers, entrepreneurs, financial and funding institutions, consulting and construction organizations to publicize themselves by being Platinum / Golden / Silver sponsors or Supporter of the Conference. The sponsorship fees payable and benefits are mentioned below. Interested organizations may communicate their willingness to the Conference Secretariat.

SPONSORSHIP OPPORTUNITIES

Entitlement	Levels						
	Platinum	Golden	Silver	Supporter	Kit Sponsor	Lunch Sponsor	Dinner Sponsor
	INR 5.00 lacs	INR 4.00 lacs	INR 3.00 lacs	INR 2.00 lacs	INR 2.00 lacs	INR 3.00 lacs	INR 4.00 lacs
Logo on the Backdrop	✓	✓	✓	✓	✓	✓	✓
Complimentary Delegates	10	6	4	2	2	4	6
Audio Visual Presentation (in minutes)	15	10	-	-	-	-	-
Distribution of catalogues	✓	✓	✓	✓	✓	✓	✓
Table Top display facility	✓	✓	-	-	-	-	-
Advertisements (in page/s)	Two	One	One	Half	Half	One	One
Display of name during lunch hours	-	-	-	-	-	✓	-
Display of name during Dinner hours	-	-	-	-	-	-	✓
Name & Logo in the inner flap of the Kit	-	-	-	-	✓	-	-

PAYMENT

All payments are to be made by the following methods:

Banker's Cheque payable to : Central Board of Irrigation & Power, New Delhi

• **Bank Transfer :** Name of Bank : HDFC Bank Ltd. 209-214, Kailash Building, 26 K.G. Marg, New Delhi - 110 001

Beneficiary Details

Organization : Central Board of Irrigation & Power

Account No. : 00031110004411 MICR Code No. : 110240001 Swift Code : HDFCCINBDEL Branch IFSC : HDFC0000003

Bank charges if any, must be borne by the organisation/participants and should not be deducted from the amount remitted to the Conference Secretariat.

Conference Secretariat

**Secretary General, Tunnelling Association of India and
Secretary, Central Board of Irrigation & Power**

Malcha Marg, Chanakyapuri, New Delhi - 110 021, India Phone : 91-11-2611 5984 / 2611 6567 Ext. 113; Fax : 91-11-2611 6347

Contact Person : Mr. A.C. Gupta (Mobile No 91-9871995996) / Mr. Sunil Sharma (Mobile No 91-9811299136)

Email : sunil@cbip.org; cbip@cbip.org; Website : http:// www.cbip.org

makers each day. This opportunity will be allotted on first-cum-first served basis.

Silver Sponsor and Supporter can also avail this opportunity by making additional payment of Rs. 50,000/-.

ADVERTISEMENT OPPORTUNITIES

A limited space will be made available on first-come-first-served basis, for coloured advertisement to the organizations, involved in the concerned field, in the proceedings volume of the seminar. The interested organizations are required to send the CD of the advertisement material in Coreldraw software or in PDF format, in A4 size along with payments as detailed below:

Inner Pages	2nd & 3rd Cover	Back Cover
INR 30,000*	INR 50,000*	INR 75,000*

* Service tax extra @ 15.00%.

TUNNELLING ASIA' 2017

International Conference on

Design, Construction and Risk Management in Underground Construction : Issues & Challenges

9 - 10 February, 2017 at Hotel Grand ITC Maratha, Mumbai

&

Workshop on

Tunnel Design and Construction : Issues and Challenges

7 - 8 February, 2017 at Hotel Kohinoor Continental, Mumbai



Sponsored by :



Under the aegis of



International Tunnelling & Underground Space Association



Tunnelling Association of India
Central Board of Irrigation & Power
&
ISRM (India)



ISRM (India)

Organised by :



Delhi Metro Rail Corpn.



Mumbai Metro Rail Corpn.



Indian Concrete Institute

Co-Organised by :

INVITATION



Tunnelling Asia' 2017, the biennial conference is being organized by Tunnelling Association of India (TAI) and the CBIP under the aegis of International Tunnelling and Underground Space Association (ITA) at Mumbai, the capital city of India. The organizers of this popular series event recognize the industry's fast evolution and advances in underground space engineering; the larger tunnel boring machines are only one example of such advances and progress. Other areas of underground engineering have become highly sophisticated over the recent years. The conference is the industry's opportunity to share their knowledge, experiences besides the case studies describing the real world applications for the benefit of the participants and for the industry to continue on path of evolution.

On behalf of the Tunnelling Association of India, I take great pleasure in extending a cordial invitation to individuals, Regulatory Bodies, Govt. Departments, Tunnel Building Contractors and Consultants, Manufacturers, Technical Research Institutes, Universities and Funding Agencies, who are actively involved in the tunnel and underground construction, to participate in the exciting **Tunnelling Asia' 2017** conference being held 9-10 February 2017 at Mumbai.

I also extend a cordial invitation to all the National Committees of ITA and the agencies involved in tunnel and underground construction including planners, designers, geologist, construction firms, consultants, insurance agencies, equipment manufacturers to participate in the exhibition being organized from 9- 10 February 2017 in conjunction with the Tunnelling Asia' 2017 conference at Mumbai. Since many underground structures are either under construction or being planned in this country, there is vast scope for concerned agencies to participate in these construction works and by taking part in the exhibition where they can demonstrate their capability either in providing services or equipment.

We look forward to welcoming you in Mumbai, and hope that your stay and experience here will be a memorable one.

(Mangu Singh)

President

Tunnelling Association of India &
Managing Director

Delhi Metro Rail Corporation Ltd.

INTRODUCTION

Location of various facilities underground will be the order of the day in the immediate future to ensure sustainable life for future societies by providing necessary infrastructure to accommodate transportation, communication utility networks and complexes for handling, processing and storage of many kinds of materials, more so in urban areas which will have to accommodate large populations. Application of new technologies besides use of sophisticated equipment for underground construction works would be warranted for execution of works in a cost effective manner conforming to sustainable development. With rapid growth of underground structures anticipated, there will be evolution of new technologies and innovative construction practices.

With a view to provide information at international level of knowledge and experience gained in the large scale underground structures and tunnel projects for the benefit of future projects throughout the world, delegates will be provided with a unique opportunity through this conference to facilitate exchange of views and ideas with professionals who have been actively involved in the success of the tunnel projects. A large number of experts are likely to participate to stimulate the debate on the challenges met and the lessons learnt, with the application of new practices and technologies. It is in this context that this International Conference "Tunnelling Asia' 2017", is being organised by Tunnelling Association of India, Central Board of Irrigation and Power (CBIP), Delhi Metro Rail Corporation Ltd. and

INVITATION

Tunnels are playing an important role in infrastructure development in the field of metro rails, railways, highways, water supply and sewerage disposal, hydropower and transfer of water for irrigation.

Tunnelling for metro works is fast developing in the country. Mumbai is also planning to execute underground metro line 3 in the city. We have to keep ourselves abreast with the latest in this field of tunnel technology. Lot of advancements have been taken place in tunnel technology and underground space engineering, the large size tunnel boring machines are only one example of such advances and progress. Other areas of underground engineering have become highly sophisticated over the recent years. There will be a good opportunity to the professionals to share their knowledge, experiences besides the case studies describing the real world applications for the benefit of the participants and for the industry to continue on path of evolution.

Since Mumbai Metro Rail Corporation is beginning construction on the 33 km first underground Metro line in the city by this year itself, there is vast scope for tunnel and underground industry to participate in the aforesaid construction works and this conference would provide them an excellent opportunity to come in the fore front by taking part in the table top exhibition where they can demonstrate their capability either in providing services or equipments.

On behalf of the Mumbai Metro Rail Corporation Limited and Chairman of the Organizing Committee, I take great pleasure in extending a cordial invitation to professionals, (planners, designers, geologist), Metro authorities, Insurance agencies and Regulatory Bodies, Govt. Departments, Tunnel Building Contractors, Consultants, Manufacturers, Technical Research Institutes, Universities and Funding donor Agencies, who are actively involved in the tunnel and underground construction, to participate in the exciting conference on Tunneling in Infrastructure Development : Issues & Challenges, on 9-10 February 2017 at Mumbai.

I look forward to welcoming you in Mumbai, and hope that interaction on the different aspects of tunneling during the two day deliberations will be a memorable one and shall be highly beneficial to all those associated with tunnelling industry.

(Ms. Ashwini Bhide)

Managing Director

Mumbai Metro Rail Corporation Limited &
Chairman of the Organizing Committee



Mumbai Metro Rail Corporation Ltd. jointly on 9-10 February 2017 at Hotel Grand ITC Maratha, Mumbai which would be unique experience for the participants.

TOPICS

Planning, Investigation and Design of Tunnel, Cavern & Underground Projects

- Planning, Investigation & Interpretation of Geological Data;
- Engineering Classification and Characterization of Rock Mass;
- Hydraulic and Structural Design of Tunnels;
- Stabilization and Support System for Tunnelling;
- Determination of In-situ Stresses for Underground Excavation;
- Instrumentation Monitoring, Back-analysis and Modelling Methodologies;
- Analysis and Design Methodologies including Effect of Seismicity on the Underground Structure.

Tunnel & Cavern Construction Technologies and Equipment

- Construction Methodologies for Tunnels, Caverns, Underground Storages including Remedial Measures for Large Collapses;
- Tunnelling in Urban Areas - Cut & Cover Method and TBM Tunnelling
- Micro Tunnelling;
- Soft Ground Tunnelling including Shotcrete Methods, Lining;
- New Developments – TBM Performance & NATM Experiences;
- Trenchless Technology – Practice and Evaluation;
- Cost optimization in tunnel construction – Assessment of new developments and cost saving in Excavation, construction equipments, single shell lining system, spray applied water proofing membranes etc.

Risk Management

- Better Preparedness against Tunnel Related Natural Hazards;
- Fixed fire fighting systems and new challenges in the fire protection of tunnels
- Risk Analysis and Decision-making Techniques for Large Underground Projects.

Environmental and Social Impacts

- Environmental and Social Impact Assessment of Underground Works and their Norms and Methodologies;
- Environmental Control in Tunnel/Cavern and Underground Spaces;
- Effective Ventilation in Tunnels and Practices.

Safety Issues – Standards and Policies

- Fire Safety Arrangement and Measures in Tunnels and Transport;
- Safety Standards and Policies in Different Countries and New Developments.
- Traffic Management while construction of underground space.
- Behaviour aspects of tunnel fires and evacuations
- Tunnel ventilation

Contractual, insurance aspects and Financing of Underground Construction Works

- Costing and Contractual Practices in Tunnel and Underground Works including Aspects of Measurements and Payment;
- Experience and Structure of Model Contract Document;
- Project and Equipment Financing of Build Operate Transfer (BOT) Projects;

Research & Development

- Robotisation of TBM Tunnelling

INDUSTRY SPECIAL ASPECTS

In addition, the following Tunnel and Underground Industry special aspects will also be covered in the special session on industries special aspects will be presented by the sponsor organisation during the conference

EXCAVATION :

1. Mechanised Tunnelling Equipment

Tunnel Boring Machines

- ❖ Case Histories for tunneling in Urban areas
- ❖ Monitored disk cutters
- ❖ Cutter optimization
- ❖ Large diameter TBM
- ❖ Solution for Mechanised Tunnelling

Drill and Blast Method

2. Roadheaders

- ❖ Use of road header in tunnel and underground construction
- ❖ Instrumented road headers
- ❖ Tool optimization
- ❖ Conquering different ground

3. Innovation in Concrete Pumps, Formwork, Ventilation Fan and Instruments for Underground Construction

4. Materials

- ❖ Innovation in materials, segments and shotcrete
- ❖ Future development of shotcrete lining & associated methods
- ❖ Innovation in materials, segments and shotcrete
- ❖ Speed Dam/ Smart Dynamic Concrete Technology
- ❖ Use of Fibres for fire control

5. Waterproofing

- ❖ Overview of the Waterproofing for Tunnels and Underground Structures
- ❖ Waterproofing Methods and Case Histories : Injections, Pre-grouting, Membrane Sheets, Spray-on Water Proofing Membranes
- ❖ Composite Tunnel Lining
- ❖ Contractual Aspects, Liability and Costs
- ❖ Fire protection during Construction and Consequences during Operation

WHO SHOULD ATTEND?

The conference will be of interest to Tunnel Designer & Operators, Engineers, Geologists, Regulatory Bodies, Government Departments, Tunnel Building Contractors & Consultants, Suppliers of Products & Services for Tunnelling Construction, Fire Authorities dealing with Infrastructure Tunnels, Technical and Research Institutes, Universities dealing with Tunnelling, Organization & Associations active in the Tunnelling World Instruments manufactures and Funding Agencies.

CALL FOR PAPERS/CASE STUDIES

The papers/case studies on the subject are invited. Intending authors may send full text of paper(s)/case study(ies) as per the guidelines/ instructions given below so as to reach the Conference Secretariat by **30th November 2016**. The papers/case studies accepted for presentation will be notified immediately thereafter. Only original contributions that have not been published or presented at any other conference/symposium/seminar are acceptable, otherwise the paper will not be considered. The full length paper will be reviewed by the Technical Committee for oral presentation.

GUIDELINES FOR PREPARATION OF PAPERS/CASE STUDIES

Please refer Website : [http:// www.cbip.org](http://www.cbip.org)

SCHEDULE

- Submission of Papers **15th December 2016**
- Intimation of acceptance of Papers **31st December 2016**

OFFICIAL LANGUAGE

The official language of the Conference is English.

DATE & VENUE

The conference is proposed to be held in 9-10 February 2017 at Hotel Grand ITC Maratha, Mumbai.

REGISTRATION

The registration fee payable by the delegates, including authors of papers, for participation in the conference is as follows:

Countries	Delegate/ Author	Research Student	Accompanying Person
India	Rs. 15,000*	Rs. 7,500*	Rs. 7,500*
Others	US\$ 700*	US\$ 300*	US\$ 300*

* Service tax extra @ 15%.

10% discount will be given to Members of CBIP, TAI and ISRM.

WORKSHOP

The objective of this workshop is to update the knowledge of tunnelling professionals, i.e., Engineers, Geologists and tunnel technician to understand the various issues & challenges being faced during investigations, design, construction and how they can be overcome.

TOPICS

General

- Linkages between site investigation, design and construction
- Surface and sub-surface Investigation

Tunnel Design

- Design Philosophy : Tunnel Design and Management
- Specificities and Stages of tunnel design
- Structural design (Calculation, Dimensioning, Face stability)
 - Ground reinforcement techniques
- Geo-investigation and Tunnel Modeling parameters
- Influence of construction methods in design approach
- Empirical, Analytical and numerical modelling methods
- Ventilation
- Design of Face pressure, Soil condition, Backfilling
- Segment lining design for soft ground and hard rock

Tunnel Construction

Conventional Tunnelling

- Sequential excavation in soft ground and hard rock
- Performance Monitoring
- Water Control and Drainages, Grouting, Water Proofing
- Safety and Quality Control
- Excavation in difficult ground (cavities, fault zones etc.)
- Monitoring for Conventional (Drill & Blast) and Mechanized Tunnelling
- Permanent lining

Mechanized Tunnelling

- Types of machines and support systems
- Interface between TBM and Lining

Date & Venue: 7–8 February 2017 at Hotel Kohinoor Continental, Mumbai

Faculty : National and International Resource Speakers having vast experience on the Tunnel Design construction will be delivering lectures. The CD containing the Power Point Presentation made by experts will be given to the participants for the Workshop.