

REGISTRATION

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

Delegate/ Author	Research Student
Rs. 15,000*	Rs. 6,000*

* Service tax extra @ 14.00%.

10% discount will be given to Members of TAI & ISRM India.

EXHIBITION

Table Top exhibition facility will be provided to the sponsors organisations at the venue of the seminar. 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

SPONSORSHIP

The Conclave 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 Conclave. The sponsorship fees payable and benefits are mentioned below. Interested organizations may communicate their willingness to the Conclave Secretariat.

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Entitlement	Levels						
	Platinum	Golden	Silver	Supporter	Kit Sponsor	Lunch Sponsor	Dinner Sponsor
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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	-	-	-	-	-	✓	-
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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 Conclave Secretariat.

Conclave 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 1294 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

exhibition, and exhibitors will have an excellent opportunity of accessing a large number of potential buyers/decision 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

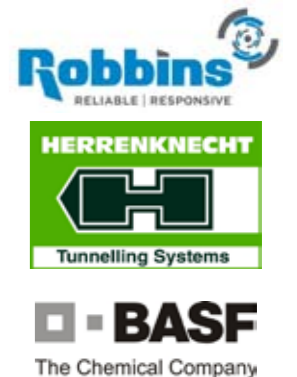
Conclave on Tunnelling in Infrastructure Development : Issues & Challenges

29-30 October 2015, Hotel ITC Maratha, Mumbai



Information Bulletin & Call for Papers

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ITA

International Tunnelling & Underground Space Association

Under the aegis of

INVITATION



Development underground is the need of the hour. Many infrastructure developments are taking place in the country in various fields such as metro transportation, hydropower generation, rail and road transportation, supply of drinking water for drinking and irrigation, underground storages etc. Many of them would need tunnels for various reasons. Metro works are planned for cities which has population of more than

20 lacs. Besides elevated metro works, tunneling is also being predominantly used for metro development. Tunnelling work also faces lot of problems. Tunnels have to pass through various geological configurations such as hard and soft rock, water bearing medium, low rock cover etc. During construction, many other problems arise. Adequate geological exploration, safe design and construction techniques are warranted. We have to keep pace with time. New design technology, latest construction equipments, safety precautions are needed for economical and timely execution of works.

It is in this context, this conclave on Tunneling in Infrastructure Development : Issues and Challenges is being organized by Tunnelling Association of India, Central Board of Irrigation and Power (CBIP), Mumbai Metro Rail Corporation Limited and ICI jointly on 29-30 October 2015 at Mumbai.

Experts in the relevant field of planning, design and construction would be presenting their experience and knowledge on the construction of tunnel works in the seminar. Participants will get the opportunity to exchange their views and ideas with these professionals and I am sure knowledge gained by them would be very useful for execution of their tunneling works.

On behalf of the Tunnelling Association of India, I take great pleasure in extending a cordial invitation to individuals, Utilities, Tunnel Building Contractors and Consultants, Manufacturers, IITs, Universities and Donor Agencies, to take part actively in the deliberations of the seminar.

I welcome you all for useful interaction and sharing your knowledge during the deliberations of the seminar.

(Mangu Singh)

*President, Tunnelling Association of India &
Managing Director
Delhi Metro Rail Corporation Ltd.*

INTRODUCTION

Growing needs for modern transportation and utility networks have increased the demand for a more extensive and elaborate use of underground space. As a result, more underground projects have to be completed in a variety of ground conditions, including weak water bearing soils, hard and soft rocks. Significant technological advances have rendered these projects possible. But there are new challenges to face as many of these projects have to be completed in difficult conditions, with very strict environmental constraints. In urban areas, the potential impact of tunneling on existing structures is a major concern. Lot of tunneling works for metro rail construction are undergoing in different cities of the country at present and many more are being planned in near future.

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 seminar 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 conclave on Tunneling in Infrastructure Development : Issues & Challenges, on 29-30 October 2015 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*

Constructing tunnels in hard and soft rock terrain in the urban cities is full of challenges. Experience has shown that construction of tunnels requires a good understanding of geology, adequate site investigation, proper tunnel design and selection of suitable construction methods and technologies. What is the limit of adequate investigation to reduce uncertainty is being asked by many. Some even question whether it is possible to do complete geological investigation before DPR stage. What is the way out to reduce uncertainties creating problem during execution of work. These issues are of paramount importance for a design and construction engineer. Proper tunnel design and selection of suitable construction methods based on geological conditions are important for design and construction of tunnels for different purposes. A proper understanding of all these issues can definitely help in



reducing time of construction as well as cost besides constructing safe tunnels.

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.

The theme of the seminar and the topics have been chosen keeping in view the above and will be relevant for all the agencies, consultants, designers, contractors, equipment manufacturers associated with tunnel and underground works for Metro, Railway, Highway, water supply and sewerage disposal and irrigation works etc.

With a view to provide information on the latest development in the field of design and construction experts who have gained knowledge and experience in the large scale underground structures and tunnel projects would be invited to this conclave which is being organized by Tunnelling Association of India, Central Board of Irrigation and Power (CBIP) Mumbai Metro Rail Corporation Limited and Indian Concrete Institute jointly on 29-30 October 2015 at Hotel ITC Maratha, Mumbai.

Participants will be provided with a unique opportunity through this seminar to facilitate exchange of views and ideas with professionals who have been actively involved in the success of the tunnel projects.

TOPICS

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

- Planning, Investigation & Interpretation of Geological Data;
- 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, NATM and TBM Tunnelling
- Micro Tunnelling;
- Soft Ground Tunnelling including Shotcrete Methods, Lining, Use of Fibres etc.
- 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;
- 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;
- Effective Ventilation in Tunnels and Practices.

Safety Issues – Standards and Policies

- Fire Safety Arrangement and Measures in Tunnels and New Developments.
- Behaviour Aspects of Tunnel Fires and Evacuations

Contractual, insurance aspects and Financing of Underground Construction Works

- Costing and Contractual Practices in Tunnel and Underground Works including Aspects of Measurements and Payment;
- Project and Equipment Financing;

WHO SHOULD ATTEND?

The conclave 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

There will be invited presentation only from the professionals. In the exceptional cases where the authors who wish to contribute papers related to the above mentioned themes are requested to send the full text of their papers on any of the above topics, so as to reach the organizers by 5th October 2015 either by e-mail or by post to the conclave Secretariat.

SCHEDULE

- Submission of Papers

5th October 2015

OFFICIAL LANGUAGE

The official language of the conclave is English.

DATE & VENUE

The conclave is to be held on 29-30 October, 2015 at Hotel ITC Maratha, Sahar, Mumbai 400 059.