

- Manage tunnel construction projects more successfully and safely;
- Develop an awareness for the latest tunnelling techniques and future trends in the industry.

**Date & venue** : April 13-14, 2015 at CBIP Conference Hall, Malcha Marg, Chanakyapuri at New Delhi.

**Faculty** : International Resource Speakers who have vast experience in the field.

#### REGISTRATION FEE

Countries	Delegate/Author	Research Student
India & SAARC Countries	Rs. 10,000*	Rs. 5,000*

\* Service tax extra @ 12.36%

10% discount will be applicable to Members of TAI/CBIP/ISRM India

#### 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.

Level	Fee	Benefit / Complimentary included Items
Platinum Sponsor	USD 15,000 INR 5,00,000	<ul style="list-style-type: none"> <li>• Full registration for ten delegates</li> <li>• Company name and logo on conference, Web Page (linked to the company website) promotion material like proceedings volume, banner/ signage, stationary items etc.</li> <li>• A full page advertisement in the Souvenir</li> <li>• 10 min. time slot for technical presentation in the respective session</li> <li>• Distribution of Literature/ Brochures</li> <li>• One Exhibition Stall of 3 m x 3 m</li> </ul>
Golden Sponsor	USD 10,500 INR 4,00,000	<ul style="list-style-type: none"> <li>• Full registration for six delegates</li> <li>• Company name and logo on conference, Web Page (linked to the company website) promotion material like proceedings volume, banner/signage, stationary items etc.</li> <li>• A full page advertisement in the Souvenir</li> <li>• Distribution of Literature/ Brochures</li> <li>• One Exhibition Stall of 3 m x 3 m</li> </ul>
Silver Sponsor	USD 7,500 INR 3,00,000	<ul style="list-style-type: none"> <li>• Full registration for four delegates</li> <li>• Company name and logo on conference, Web Page (linked to the company website) promotion material like proceedings volume, banner / signage, stationary items etc.</li> <li>• A full page advertisement in the Souvenir</li> <li>• Distribution of Literature/ Brochures</li> <li>• 50% Discount on booking of one Exhibition Stall of 3 m x 3 m</li> </ul>
Supporter	USD 5,000 INR 2,00,000	<ul style="list-style-type: none"> <li>• Full registration for two delegates</li> <li>• Company name &amp; logo in conference proceedings volume</li> <li>• A full page advertisement in the Souvenir</li> <li>• Distribution of Literature/Brochures</li> </ul>

#### EXHIBITION

The "TUNNEL Expo 2015" will be held on April 15-16, 2015, at venue of the conference, A.P. Shinde Auditorium, NASC Complex, Pusa, at New Delhi, in conjunction with the Tunnelling Asia where participants' daily Tea/Coffee and lunch will be served exclusively. 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 makers each day. Built-up stalls in octonorm style complete

with basic facilities are available in sizes 3 x 3 sq mtr. The stall will be allotted on first-cum-first served basis.

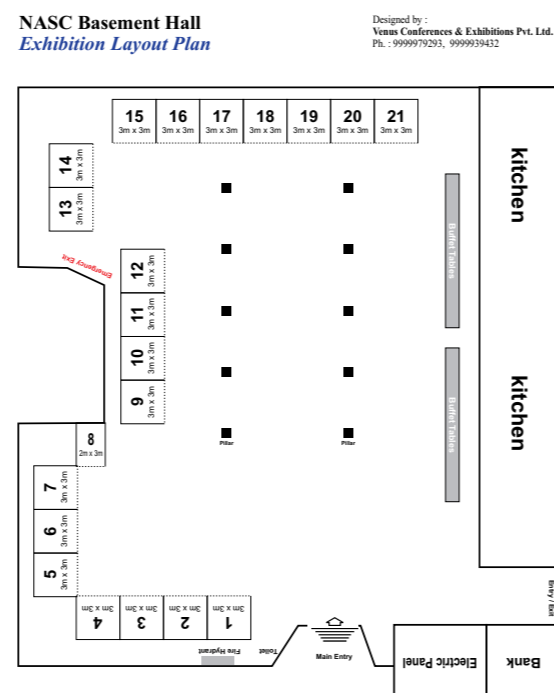
#### Exhibition Participation Fee

Tariff for SAARC countries : INR 10000 per sq. mtr. + Service tax @ 12.36%

Tariff for other countries : USD 500 per sq. mtr. + Service tax @ 12.36%

- Schedule for Exhibition : Exhibition Installation April. 14, 2015 (Night)

#### Exhibition Layout



#### 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 Conference. The interested organizations are required to send the CD of the advertisement material, in A4 size i.e., Art Work / Negative/ Positive along with payments as detailed below:

Inner Pages	US\$ 500 / INR 30,000
2nd & 3rd Cover	US\$ 1000 / INR 50,000
Back Cover	US\$ 1500 / INR 75,000

#### PAYMENT

All payments are to be made by the following methods:

- **Banker's Cheque payable to :** Central Board of Irrigation and 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	: HDFCCINBBDEL
Branch/RTG/NEFT/IFSC	: HDFC0000003

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

#### Conference Secretariat

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

# TUNNELLING ASIA' 2015

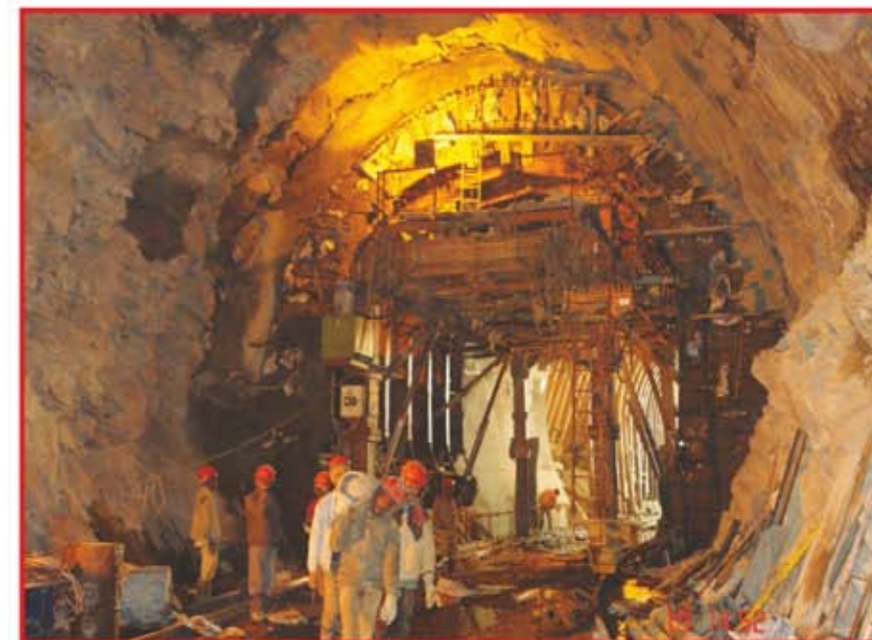
## Underground Space Development for Better Environment and Safety : Issues & Challenges

15-16 April, 2015, A.P. Shinde Auditorium, NASC Complex, Pusa, New Delhi

&

## Workshop on Tunnel Design and Construction : Issues and Challenges

13-14 April, 2015, CBIP Conference Hall, New Delhi



Under the aegis of



International Tunnelling & Underground Space Association

Organised by :



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



Co-Organised by :



Delhi Metro Rail Corpn.

Sponsored by :



normet



## INVITATION



Tunnelling Asia' 2015, 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) in New Delhi, 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' 2015** conference being held 15-16 April 2015 at New Delhi.

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 15-16 April 2015 in conjunction with the Tunnelling Asia' 2015 conference at New Delhi. 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 New Delhi, 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.  
Chairman  
Organising Committee

## 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 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
- ❖ 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 **28<sup>th</sup> February 2015**. 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 **28<sup>th</sup> February 2015**
- Intimation of acceptance of Papers **15<sup>th</sup> March 2015**

### OFFICIAL LANGUAGE

The official language of the Conference is English.

### DATE & VENUE

The conference is proposed to be held at A.P. Shinde Auditorium, NASC Complex, Pusa, New Delhi during 15-16 April, 2015.

### 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. 12,000*	Rs. 6,000*	Rs. 6,000*
Others	US\$ 700*	US\$ 300*	US\$ 300*

\* Service tax extra @ 12.36%.

### Workshop

Constructing tunnels and caverns in the technically active Himalayas is full of challenges and uncertainties. Experience has shown that construction of tunnels and caverns in Himalayas 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 D&R 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 hydro, road transport, rail network and metros. A proper understanding of all these issues can definitely help in reducing time of construction as well as cost besides constructing safe tunnels.

To focus on the various issues and challenges being faced for the design and construction of the tunnels on soft and hard rock, it is proposed to organize a Workshop on 'Tunnel Design and Construction – Issues and Challenges' on 13-14 April 2015 in the Conference Hall of CBIP at New Delhi.

### OBJECTIVES

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

### WORKSHOP BENEFITS

The Workshop will introduce to the participants the latest tunnelling techniques and will help them to develop their skills so as to:

- Select suitable investigation techniques for tunnelling;
- Analyze ground conditions for tunnelling;
- Design of tunnel and support for various rock conditions;
- Assist in making informed decisions regarding tunnel and tunnel shaft construction methods and tunnel linking selection;
- Select and specify the most suitable equipment for tunnelling;
- Develop a better understanding of the application and use of micro-tunnelling techniques;
- Develop techniques to mitigate anticipated and unanticipated tunnelling problems;
- Develop tunnel construction schedules more accurately;