

Workshop on “Tunnel Design: Issues and challenges”

10th October 2017, Hotel Radisson Blu, Jammu

PROGRAMME

Tuesday, 10th October, 2017

09:00 – 09:30 hrs. Registration

09:30 – 10:00 Inaugural Session

Welcome Address: Shri G.P. Patel, Treasurer, TAI & Director – Water Resources, CBIP

Inaugural address: Shri A.K. Sachan, CAO-Construction, USBRL Project, Northern Railway

Vote of thanks: Shri B.B. Tomar, Chief Engineer –USBRL Project, Northern Railway

10:00 – 13:00 Hrs. Session 1: General Aspects of Tunnel Design

- ❖ Geophysical investigations for tunnels, caverns and underground projects – **Dr. Sanjay Rana**, *Director, Parsan Overseas (P) Limited*
- ❖ Issues of Rock Mass Classification based Empirical Design Approach – **Dr. R.K. Goel**
- ❖ Linkages between site investigation, design and construction - **Dr. Florian Krenn** , *Managing Director, GeoConsult*

14:00 – 15:30 Hrs. Session 2: Tunnel Design

- ❖ Design Philosophy : Tunnel Design and management, Specificities and Stages of tunnel design and Structural design (Calculation, Dimensioning, Face stability) – **Dr. Florian Krenn, Geoconsult**
- ❖ Aseismic design and analysis of underground structures– **Dr. Umesh Soni, HCC Limited**
- ❖ Design of support system in tunnel - Heman Manchanda, **Geodata**

16:00 – 17:30 Hrs. Session 3: Innovations in Tunnel Design

- ❖ Ground improvement techniques – **Lawrence Halls**
- ❖ Tunnel lining configuration – **Amit Kaul**
- ❖ Ventilation in long tunnels – **Rajesh Jain, DMRC**

Tea/Coffee Break: 11:00–11:30 hrs.

Lunch: 13:00–14:00 hrs.

Evening Tea /Coffee Break : 15:30–16:00 hrs.

Conference on Tunnelling in Himalayan Geology

11-13 October 2017 in Jammu at J&K

PROGRAMME

Wednesday, 11th October, 2017

08:30 – 09:45 hrs. Registration

10:00 – 11:00 hrs. Inaugural Session

11:30 – 13:00 hrs. Plenary Session

- ❖ Geological problems in execution of tunnels in USBRL project – *Dr. K.S. Rao*
- ❖ Challenges in design of tunnels in Himalayan geology – *Dr. Florian Krenn*
- ❖ Challenges of Tunnelling In Himalaya – *Dr. R.K. Goel, CMFRI*

14:00 – 15:30 hrs. Technical Session I : Planning, Investigation and Design of Tunnel

- ❖ Advancement in geophysical investigations for tunnels – *Dr. Sanjay Rana*
- ❖ Earthquake design criteria and parameters for underground structures with reference to Indian Standard - *Subhash Soni & Satish Kumar Sharma*
- ❖ 3D Numerical modelling of underground powerhouse complex – A Case Study - *Sharique Khan*
- ❖ Geological studies for construction of T 74 R – Problems and solutions - *Rushdi Yusoff, and Kedar Nath Adhikari*
- ❖ Slope stability of Sangaldan area portals - *Rajesh Gupta and R.R. Mallick*

Communication Papers

- ❖ Estimation of rock load for the design of tunnel lining – *P.S. Gupta and Rashmi Ranjan Mallick*
- ❖ Importance of strength anisotropy in numerical analysis - *Ankesh Kumar, Aditya Singh, Swapnil Mishra, K. S. Rao*
- ❖ Parametric study of lined and unlined tunnels at shallow depths under coupled static and cyclic loading condition - *Swapnil Mishra, Challa Abhijith, Aditya Singh, Ankesh Kumar, K. S. Rao, N. K. Gupta*
- ❖ Comparison of simplified closed-form solution of drucker-prager Criterion with finite element solution - *Shivam Gupta, Aditya Singh, Ankesh Kumar, Swapnil Mishra, K. Seshagiri Rao*

16:00 – 17:30 hrs. Technical Session II : Risk, Contract Management and Financing of Tunnel and Underground Projects

- ❖ Contractual issues in Himalayan geology – *Surinder Pal*
- ❖ Contractual Risk Management for tunneling – A Case Study of Vishnugad Pipalkoti Hydro Electric Project – *R.K. Vishnoi*
- ❖ Implementation of large Project on PPP - Best Strategy for Large Project for risk mitigation Case study of Chenani Nashri Tunnel Project – *Ashutosh Chandwar*
- ❖ Tunnelling in Visco-Elasto-Plastic ground in Tunnel T5 of the Katra-Dharam Section of the Udhampur Srinagar Baramulla Rail Link Project - *Dr. Bineshian Hoss and G.B.Nagendra*

19:00 – 22:00 hrs. Dinner at Hotel Radisson Blu

Thursday, 12th October, 2017

09:30 – 11:00 Hrs. Technical Session III: Tunnel & Cavern Construction - Technologies & Equipment

- ❖ Challenges and issues in execution of USBRL project – An Overview – *A.K. Sachan, CAO – Construction, USBRL Project*
- ❖ Impediments in speedy execution of projects in Himalayan geology – *Satish Kumar Sharma & Basavraj Kumbhar*
- ❖ Drilling & Blasting of long tunnels in Himalayan geology – *H.S. Venkatesh, R. Balachander and G. Gopinath*
- ❖ Construction of railway tunnels in highly adverse geological conditions in Himalayas by Using NATM– A Case Study – *R.K. Khali*
- ❖ Challenge of tunnelling through the main boundary thrust in Tunnel T1 of the Katra – Dharam Section of the Udhampur – Srinagar - Baramulla Rail Link Project - *G.B. Nagendra*
- ❖ Tunneling in Himalayan geology: A Case study of Kishanganga Hydroelectric Project (330 MW), construction of head race tunnel by Tunnel Boring Machine - *Arunesh Bihari Dwivedi*
- ❖ TBM Tunnelling in Himalayan geology – *Nitin Garg*
- ❖ Tunnel excavation by Roadheader in Himalayan geology – A Case Study of Pir Panjal Railway Tunnel – *S.D. Jeur and Basavraj Kumbhar*
- ❖ Innovative FRC design for underground application (Inner lining, shaft, CIP) using new generation of fibre – *Chandan Vaidya*

Communication Paper

- ❖ Shotcrete in tunnelling- concept, precaution & methodology – *Deepak Singh and Rampal*

11:30 – 13:00 Hrs. Technical Session IV: Industry Special aspects

- ❖ In-Service performance of macro synthetic Fibre reinforced shotcrete Linings - *Friedrich Aguasa*
- ❖ The use of micro fine cements and specialists chemicals for pre and post injection grouting – *Lawrence Halls*
- ❖ Ground Consolidation, Ground Improvement & Ground Stabilization in Soft Ground & Weathered Rock – *Kim Kooper*
- ❖ Tunnel waterproofing in Himalayan geology – *Abhishek, Jain*
- ❖ Waterproofing systems for watertight tunnels – *Mangesh Dhamele*

14:00 – 15:30 Hrs. Technical Session V: Safety issues including Ventilation

- ❖ Sustainable landslide mitigation measures – A Case Study on Lambagarh - *Minimol Korulla*
- ❖ Tunnel safety – *R.G. Saini*
- ❖ Ventilation and fire safety in long tunnel – *Rajesh Jain*
- ❖ Chenani-Nashri Tunnel – Illuminating the Future - *Ashutosh Chandwar, Vijay K Sharma, M K Bharatan , Salil Singh*
- ❖ Electrical systems at high altitude, tunnel lighting concept, ventilation and fire safety In long rail and road Himalayan tunnels - *Ms. Srivasha Kodali*
- ❖ SISO (an internet based real time data management system) in T-48 – for dynamic administration and controlling of projects - *Surinder Pal & Ann George,*

16:00 – 17:30 Hrs. Technical Session VI : Innovative Techniques

- ❖ Chenani-Nashri Tunnel – Intelligent Tunnel - *Ashutosh Chandwar, Vijay K Sharma, M K Bharatan , Salil Singh*
- ❖ Modernization of equipment- Need of the Hour for High Performance Spray Concrete – *Amit Kaul*
- ❖ Tunnel seismic prediction – *Kripal Chaudhary*
- ❖ Pre-Grouting for handling Geo-technical & water ingress problem in Himalayan Tunnel – *Milon Mukhopadhyay*
- ❖ Construction of Rockfall Mitigation Measures above and near tunnel portals along Hill Road - A Case Study - *Roshan. R.S.V, Meccafferri*
- ❖ Tunneling in overstressed rock: Example from the lesser Himalaya of Jammu and Kashmir, India - *Pratap Chandra Dhang*

Friday 13th October 2017

Visit to USBRL Project Site Tunnel T-5 (near Reasi) *

Tea/Coffee Break: 11:00–11:30 hrs. Lunch: 13:00–14:00 hrs. Evening Tea: 15:30–16:00 hrs.

PS

- Those delegates who are interested in Field Visit can enrol their name at the registration Desk so that transport and refreshment, as well as Lunch arrangements could be made accordingly.