



ISEG Seminar on Challenges in Engineering Geology 03-05 December 2008, Hyderabad, India

Organised by



Indian Society of
Engineering Geology

Geological Survey of India
Southern Region



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The Seminar . . .

The Seminar on 'Challenges in Engineering Geology' at Hyderabad, India, during 03-05, December 2008 is in consideration of the overall thrust on developmental activities, that has opened up new vistas of interest for geological and engineering fraternity. The Seminar aims at providing a forum for exchange of ideas in order to consolidate the state-of-the-art technology in geotechnical engineering and to share development, new findings and technological breakthroughs. The congregation would attempt to provide guidelines for approach to technology in future.

The choice of Hyderabad as the venue for the seminar is in appreciation of the thrust of the Government of Andhra Pradesh on irrigation aggregating 808,000 Ha (20 lakh acres) of command area in the State under its ambitious "Jalayagnam" (Water Worship) Scheme of great societal relevance. This involves construction of about 50 major irrigation projects envisaging several earth dams, concrete dams, canals, tunnels, etc. by the Year 2008 at an approximate cost of Rs. 50,000 crores (500 billion).

On this occasion, it is also contemplated to celebrate the 50 years of yeoman service to the nation rendered by the Engineering Geology Division of the Geological Survey of India, Southern Region, Hyderabad.

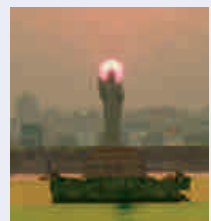
Themes

The focus of the Seminar would be on the following themes and sub-themes :

1. *Engineering Geological Mapping* : Mapping techniques, remote sensing approaches, discontinuity data collection and analysis, site/rock mass characterisation, etc.
2. *River Valley Storage and Diversion Structures* : Foundation, treatment measures, etc.
3. *Underground and Deep Excavations* : Tunnels, caverns, ground stresses, support methodologies, drilling and blasting techniques, DBM / TBM methodologies, sub-surface water problems, slope stabilisation measures, etc.
4. *Construction Material* : Borrow area surveys, aggregate testing and suitability.
5. *Communication Projects* : Planning, urban issues of rail, road, pipe line alignments, etc.
6. *Geohazards* : Seismic hazard assessment, landslides, floods, tsunami, etc.
7. *Exploration, Instrumentation and Lab Techniques* : Sub-surface exploration techniques, drilling techniques, geophysical studies, in-insitu tests, lab tests, physical modelling, etc.
8. *Post-construction Issues* : Case studies and future areas of research.
9. *Allied Issues* : Reservoir competency, geotechniques in extreme climatic conditions, geo-environment, watershed management, engineering design, computer aided approaches, conservation of heritage structures and ancient monuments, Engineering Procurement Construction Contracts and related issues, etc.

The Venue ...

The Hyderabad city and its twin-city Secunderabad are separated by the Hussain Sagar, a lake created during the time of Ibrahim Qutub Shah in 1562. The city, known for its rich history, multilingual culture and architecture, is a meeting point for North and South India. Also called the City of Nizams, pearls and lakes, Hyderabad is an important hub of Information Technology too. It is the home to some of the major Indian landmarks like the Charminar, Salarjung Museum, Falaknuma Palace and Golconda Fort and boasts of the second largest film industry in the country. The city's cuisine is a blend of Mughal, Persian and Andhra variety with the famous Hyderabadi Biryani and Irani Chai being the iconic dishes of the region.



The Seminar venue is kept at the Taramati Baradari, a Heritage Monument Project, which has become centerpiece of an ultra modern Convention and Culture Complex. The ambience and setting is evocative of grace of the middle ages. Yet the facilities are contemporary, providing an ideal setting for a Convention, having state-of-the-art facilities such as A/C Convention Centre, Open Air Auditorium, Banquet Halls, Business Centre with conference facilities, multi-cuisine restaurant and bar and excellent residential facilities. The attached Swimming Pool, Gymnasium and Health Club make the Taramati Baradari Culture Complex, a blend of the traditional Hyderabadi hospitality and 5-Star ambience.

Climate...

The climate during December is pleasant. Day and night temperatures vary from 13° to 20° and from 8° to 13° C respectively, requiring only light woollens.

Programme...

Tuesday 02 Dec 2008

1700-2000 hrs Registration (at Nand International, Kachhiguda)

Wednesday 03 Dec 2008

Concurrent Technical and Poster Sessions

0800 hrs onwards Registration
 0900-1100 hrs Inaugural Session/ Golden Jubilee Celebration (EG Divn, GSI, SR)
 1100-1130 hrs Inaugural Tea
 1130-1330 hrs Technical Session I
 1330-1400 hrs Lunch
 1400-1600 hrs Technical Session II
 1600-1615 hrs Tea
 1615-1800 hrs Technical Session III
 1830-1930 hrs Cultural Programme
 1930 hrs onwards Dinner

Thursday 04 Dec 2008

Concurrent Technical and Poster Sessions

0900-1100 hrs Technical Session IV
 1100-1115 hrs Tea
 1115-1315 Technical Session V
 1315-1345 hrs Lunch
 1345-1515 hrs Technical Session VI
 1515-1530 hrs Tea
 1530-1645 hrs Technical Session VII
 1700-1800 hrs Concluding Session
 1800 hrs Closing Tea

Friday 05 Dec 2008

Field Excursion to AMRP TBM-bored Tunnel (Distance:130 km)

0800 hrs Dep. Hyderabad
 1100 hrs Arr. Tunnel site (enroute Breakfast at Yacharam)
 1100-1400 hrs Field Visit
 1400-1500 hrs Lunch
 1500 hrs Dep. Tunnel site.
 1800 hrs Arr. Hyderabad (enroute Tea at Yacharam)

Registration

General	:	Rs 2,000/- per Delegate
ISEG Members/ Students	:	Rs 1,000/- per Delegate
Institutional/ Associate Members	:	Free for one Delegate. Others at normal rates.
Accompanying Members	:	Rs 1,000/- per person (restricted to two members)
Excursion	:	Free to Outstation Delegates, Rs 200/- for others
Local Sight Seeing/ Shopping	:	For Accompanying Members (Free)

Abstracts of Papers Received (134)

Engineering Geological Mapping	:	17	River Valley Storage & Diversion Structures	:	27
Underground & Deep Excavations	:	27	Construction Material	:	03
Communication Projects	:	11	Geohazards	:	27
Exploration, Instrumentation & Lab Techniques	:	08	Post Construction Issues	:	01
Allied Issues	:	13			

Invited Lectures

1. **"Jalayagnam" – EPC Contract System** : B.S.N.Reddy, Engineer-in-Chief, I&CAD Department, Govt. of Andhra Pradesh
2. **Cement grouting in dam foundations** : S.Balasubrahmanyam, Chief Engineer (Retd.), CWC
3. **Assessment of stability and design of supports for large underground excavations** : Rajiv Sethi, Energy Infratech Pvt. Ltd.
4. **Rock bursts in deep excavations** : M.M. Swamy, Dy. Director General, Geological Survey of India, Kolkata
5. **Application of geotechniques in urban development with specific reference to United Arab Emirates** : M.J. Ahmed, ACES, Dubai
6. **Conservation of Heritage sites** : U.S. Rawat, Director, Geological Survey of India, Pune
7. **Engineering Geological Mapping & Rock Mass Characterization** : Gopal Dhawan, Executive Director, NHPC, Faridabad
8. **Prediction of changes in rock mass behaviour, stress pattern and structural stability during construction underground structures** : P.C. Nawani, Director, NIRM, KGF
9. **Modern trends in geotechnical assessment of landslides and stabilization of cut slopes** : R. Anbalagan, Professor, IIT, Roorkee
10. **Landslide studies – site specific** : R.N. Ghosh, Director, Geological Survey of India, Kolkata
11. **Seismic hazard assessment vis-à-vis Dam Safety** : Prabhas Pande, Director, Geological Survey of India, Lucknow
12. **Mechanised Tunnelling: TBM, Road Headers and Trenchless Technology (Microtunnelling) – its success and limitations in Indian context** : Shyam Chengalath, MD, Robbins India, New Delhi

Excursion...

A field excursion to the 43.93 km long, under construction, TBM bored tunnel of the Alimineti Madhav Reddy Project (Srisailem Left Bank Canal Project, Mahabubnagar and Nalgonda Districts, Andhra Pradesh) is planned for 05 December. Besides the 3-hour technical visit of the site, general geological appraisal of Peninsular Gneissic Complex would be made enroute.

The tunnel (T1) with a finished diameter of 9.2m would be constructed by two tunnel boring machines (TBM). The tunnel takes off from the Srisailem reservoir and will cater to the requirements of irrigation and water supply in the water starved Nalgonda District.

Salient Features of the TBM

Robbins Double Shield open type hard rock TBM- 19" (432 mm) cutters.	
No. of Machines	- Two (from intake and outlet ends)
Machine Dia	- 9.9 m
No. of cutters	- 69
Cutter head thrust	- 29 MPa
Cutter head speed	- 3.4-5.2 RPM
Conveyor capacity	- 1388 m ³ /hour
Penetration rate (per Machine)	- 1.6 m/hour, 30 m/day (max.), 600 m/month



Geology

The tunnel is aligned through the Srisailem Formation of Cuddapah Supergroup and Granites/ Granite Gneiss of Peninsular Gneissic Complex (Archean).

The Stratigraphic succession in the area is as given below:

Srisailem Formation (Cuddapah Supergroup)

Igalpenta Quartzite

Tapasipenta Siltstone

Kaklitvagu Quartzite

Unconformity-----

Peninsular Gneissic Complex (Archean)

Granites intruded by basic volcanics

The Srisailem Formation overlies the PGC and is separated by an unconformity. The granites/ granite gneiss representing the PGC form the basement rocks. This formation is folded and forms the denudational hills in the area. The rocks are intruded by dolerite dykes, quartz veins and reefs. The area shows structurally controlled drainage with the major streams flowing towards east. Nalavagu and Dindi rivers are structurally controlled with the area in between the two forming an up-thrown block.



The Srisailem Formation is divided into Igalpenta Quartzite, Tapasipenta Siltstone and Kaklitvagu Quartzite. The Igalpenta Quartzite is represented by intercalated sequence of ferruginous and glauconitic quartzite and shale. The Tapasipenta siltstone is red to purple in colour, ferruginous, calcareous, flaggy and thinly bedded. These beds are sub-horizontal with dips of the order of 5° to 10° towards SE. The Kaklitvagu Quartzite overlies the granulites of Archaean with an unconformity marked, at places, by conglomerate at the contact zone. The base of the quartzite is often pebbly, indicating the shallow nature of the basin initially. The quartzite is generally ferruginous, brownish to grey in color, hard and massive. It is horizontal to sub-

horizontal in disposition with northerly or southerly dips. During detailed mapping along the alignment in the pre-construction stage, the unconformity between the Archaean basement granites and quartzites of the Srisailem Formation was identified for further investigation to prognosticate its intersection at tunnel grade of T1. Accordingly, Geoelectrical survey comprising of deep vertical electrical sounding (VES) of 250m depth was conducted at 200m interval for a length of 1km between Ch.28.1km and Ch.29.1km along the alignment. The study showed that the dip of the unconformity is 2.4° which is close to the formation dip in the area and the unconformity is prognosticated to intersect at tunnel grade at Ch.21.358 km. In this scenario, the tunnel T1 will be driven 48.62 % of its length in quartzites from inlet end and the remaining reach of 51.38% in granites from exit end.



Local Sight Seeing...

Local sight seeing and shopping tours would be made available for accompanying persons on the days of the Seminar Proceedings, viz 03-04 Dec. Popular tourist destinations like Charminar, Hussain Sagar, Salarjung Museum, Golkonda Fort, etc. would be covered in the itinerary. Shopping tour destination would be Charminar area for the famous Hyderabad Pearls and the upmarket area of Abids for general purchasing.

Exhibition Stalls ...

There is provision for eight number Exhibition Stalls of size 2m x 3m in the lush green lawns of the Seminar venue. The Delegates will have unhindered view of the stalls from the main walkway to the Auditorium.



The Stalls are being offered @ Rs 25,000/- each on first-come-first-served basis. Interested parties are advised to contact the Organising Secretary for booking of the Stalls at the earliest possible to avoid disappointment.



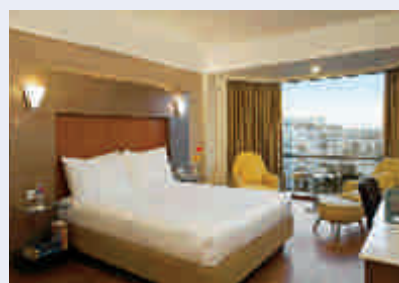
Souvenir Advertisements...

Advertisements are invited for the Souvenir to be released at the time of the Seminar. The categories of the advertisements and respective charges are as follows:

Cover Strip (C1)	Colour	Rs. 20,000/-	Cover Inner (C2)	Colour	Rs. 15,000/-
Back Inner (C3)	Colour	Rs. 15,000/-	Back Cover (C4)	Colour	Rs. 20,000/-
Full Page	B/W	Rs. 10,000/-	Half Page	B/W	Rs. 6,000/-

Accommodation and Transport ...

Hyderabad, a city of hotels, offers a range that varies from high tariff five star hotels to decent accommodation at as low a tariff as Rs. 300/- per head. Hospitality is unique and one gets a feeling of being 'at home away from home'. To make your stay comfortable, few hotels have been earmarked in the vicinity of the seminar venue. These are *Hotel Golkonda, Nand International, Panchratna, Hotel Manjira, Hotel Suprabhat and Tourist Plaza*. Apart from these, guest houses and hostels with limited accommodation are also being arranged.



Pick up service from these hotels to the Seminar venue would be available to the delegates and their registered accompanying members. However, for pick up from airport/railway station to the hotel, the delegates are requested to avail the prepaid taxi services that are available easily.

Hotel Reservation

The accommodation would be given on a first-come-first-served basis and one night deposit must be guaranteed in order to secure reservation. The completed registration form with choice of accommodation may be sent to the *Organising Secretary, along with payment through Demand Draft in favour of "Indian Society of Engineering Geology", payable at Hyderabad, by 15 November 2008*. We recommend you to block the hotel rooms in advance to avoid last minute availability crisis.

Hotels / Tariffs

Name of Hotel	Single Room (non AC)	Single Room (With AC)	Double Room (non AC)	Double Room (With AC)
1. Hotel Golkonda , Masab Tank.	Rs 5000/- Premium room	Rs 7000/- Premium suite	Rs 5800/- Premium room	Rs 7000/- Premium suite
2. Nand International , Kachiguda Tel: 91-40-24657511 Fax: 040-24653787	Rs 450/-	Rs 900/-	Rs 550/-	Rs 975/-
3. Hotel Suprabhat , Kachiguda Tel:040-66615111	Rs860/- (Deluxe)	Rs 1505/- (Deluxe)	Rs 1,075/- (Deluxe)	Rs 1,935/- (Deluxe)
4. Hotel Manjira , Kachiguda. Tel: 040-24656611 Fax 040-24656619	-----	-----	Rs 525/- (Deluxe)	Rs 630/- (Deluxe)
5. Hotel Panchratna , Kachiguda. Tel: 040-24653032 Fax 040-24736199	Rs 360/-	-----	Rs 580/-	Rs 980/-
6. Hotel Tourist Plaza , Kachiguda. Tel: 91-40-30723333	-----	Rs 1295/- (Deluxe)	Rs 1495/- (Deluxe)	Rs 2295/- (Deluxe) Family Four Occupancy

Mode of Payment ...

All payments in connection with the Seminar may be made through Demand Draft in favour of "**Indian Society of Engineering Geology**" payable at Lucknow.

Indian Society of Engineering Geology ...

The Indian Society of Engineering Geology is the Indian National Group of the International Association of Engineering Geology and Environment (IAEG), which is affiliated to the International Union of Geological Sciences (IUGS) and the UNESCO. Through regular publications of the Journal of Engineering Geology and the biannual ISEG News, the Society promotes the discipline of Engineering Geology and allied sciences. Ever since its inception in the year 1965, it has also been providing a forum for discussions by holding periodical meetings, workshops, seminars and symposia.

Founded in 1965, the Indian Society of Engineering Geology has just completed forty three years of its existence. It was inaugurated by Dr K.L. Rao, the then Union Minister of Irrigation and Power on 15 October 1965 at Kolkata. Under the able guidance of Dr D.N. Wadia, the founder President of the Society and doyen of Indian Geology, the society commenced its journey with the aim to promote the study of Engineering geology and allied sciences. In fact, the Society, over the years, has effectively served as a formidable bridge between the geologists and the engineers; has provided a vibrant platform for discussing and debating a host of geotechnical problems and state-of-the-art technologies; and projected the nation's achievements in the field of geotechniques before the world. The engineering and geological community from across the nation, representing almost all the leading organisations engaged in civil development projects, constitute the member base of the Society.

In its forty three years of dedicated service to the nation, the Society has brought out its Journal of Engineering Geology, incorporating a host of scientific papers on various themes and has also published some prestigious volumes like the "Indian Monuments Through the Ages" and "Geotechnical Features of Major Dams in India". The Society launched its biannual Newsletter- the ISEG News in March 2004 that is hailed as another milestone in the Society's illustrious journey. Keeping pace with the trends of times, the Society also launched its interactive Website on 22 December 2006.

From time to time, the society has been providing a forum for technical deliberations on relevant topics and has organised a number of Symposia/ Seminars/ Workshops. The Society also earned the rare distinction by hosting the four- yearly prestigious International Congress of the International Association of Engineering Geology at New Delhi in 1982.



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