

International Conference on Underground Space Technology
and
the 8th Asian Regional Conference of IAEG

ICUST 2011

17 - 19 January 2011
Le Meridien, Bangalore
India

Organized by



Indian Society of Engineering Geology
www.isegindia.org

and

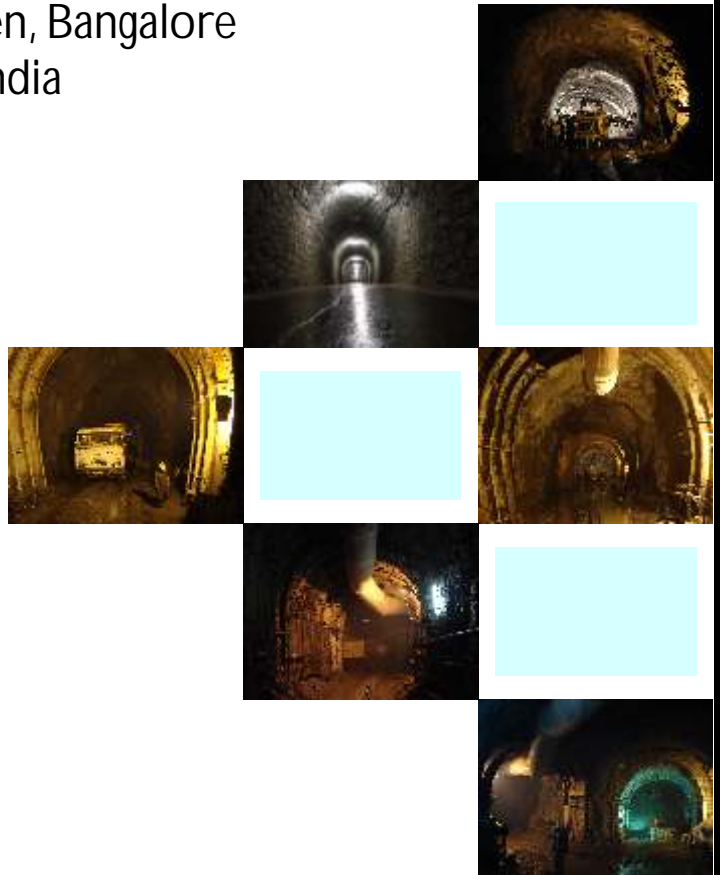


National Institute of Rock Mechanics
Kolar Gold Fields (Karnataka), India
www.nirm.in

under the aegis of



International Association for Engineering
Geology and the Environment
www.iaeg.info



www.icust2011.com

FINAL ANNOUNCEMENT



I welcome you all to the beautiful city of Bengaluru.

International Association of Engineering Geology and the Environment (IAEG), the Indian Society of Engineering Geology (ISEG) and the National Institute of Rock Mechanics (NIRM), together are organizing an International Conference on "Underground Space Technology" during 17-19 January, 2011. As Chairman of the Organizing Committee, and on behalf of these three institutions, it is my pleasure to invite you to Bengaluru, India. This event will be held concurrently with the "8th Asian Regional Conference of IAEG".

The main theme of the Conference is underground space technology in mining engineering, civil engineering and infrastructure development sectors. The Conference will address the problems and challenges posed in excavation of underground openings in rock. The target audience are engineering geologists, mining engineers, civil engineers and all those involved with rock engineering.

We have eminent scientists and engineers from India and abroad as keynote speakers, and many experts in their areas of specialization presenting their experience and findings on a wide gamut of problems related to underground space development. Leading hydro-power and mining companies, government and semi-government organizations working in the relevant fields, and major suppliers of equipment relevant to excavations in rock, have sponsored the event. There is ample scope for other agencies too to publicize their expertise by participating in the Conference.

This Conference gains all the more importance in view of the large scale activities underway in the field of tunneling for hydro-power, metro rails, mining, underground storage, etc. within Asia.

We will spare no efforts to make it a memorable event for you all. Please join us at Bengaluru, and enjoy our hospitality.

Dr P C Nawani
Director, NIRM,
President, ISEG and
Chairman, Organising Committee, ICUST-2011

Advisory Committee

The Director General	Geological Survey of India, Kolkata
Dr PC Nawani	Director, NIRM, Kolar Gold Fields
Mr Chhewang Rinzin	Managing Director, Druk Green Power Corp Ltd, Bhutan
Dr Amalendu Sinha	Director, Central Institute of Mining & Fuel Research, Dhanbad
Dr AK Sinha	Dy Director General & HoD, AMSE Wing, GSI, Bangalore
Sri Sumant Gupta	Dy Director General, Geological Survey of India (NR), Lucknow
Sri YN Apparao	Chairman, Athena Demwe Power Limited, New Delhi
Prof T Ramamurthy	Earlier with Dept of Civil engineering, Indian Institute of Technology, New Delhi
Sri BS Sudhir Chandra	Director (Projects & Planning), Bangalore Metro Rail Corp Ltd, Bangalore
Sri TK Sivarajan	Director (Monitoring), Central Water Commission
Dr Gopal Dhawan	Executive Director, NHPC Ltd

Core Group

Chairman	Dr PC Nawani, President, ISEG & Director, NIRM
Treasurer	Dr PC Jha, Member, ISEG & Scientist, NIRM
Chief Editor	Dr GR Adhikari, Scientist-5, NIRM

Members

Sri Y Deva, Secretary, ISEG
Sri A Mehrotra, Treasurer, ISEG & Director, GSI
Sri M Raju, Council Member, ISEG & Director, GSI
Mr Sripad, Scientist-4, NIRM
Dr AK Naithani, Scientist-3, NIRM
Mr Imran Sayeed Chief (Geology) NHPC Ltd,

Organizing Secretary

Dr V Venkateswarlu, Council Member, ISEG & Scientist, NIRM
Scientist, National Institute of Rock Mechanics
PO : CHAMPION REEFS – 563 117
(Kolar Gold Fields, Karnataka) India
Ph : +91-8153-275000; +91-9448375514
Fax : +91-8153-275002
e-mail : icust@nirm.in

■ Invitation to ICUST-2011

The Indian Society of Engineering Geology, in association with the National Institute of Rock Mechanics, under the aegis of the International Association for Engineering Geology and the Environment, proposes to organize an International Conference on "Underground Space Technology", during 17-19 January 2011, in Bangalore, India.

■ Theme of the Conference

The main theme of the Conference is "Underground space technology in civil engineering and mining sectors".

■ Aim of the Conference

The Conference is proposed to address the problems and challenges posed in excavation of underground openings in rock for civil engineering and mining purposes, and the solutions to overcome these problems. Past experiences and application of new technologies will be highlighted, with a focused approach to problem solving and for exploring the future potential in these areas.

■ IAEG

The International association for Engineering geology and the Environments (IAEG) was founded in 1964 and is affiliated to the International Union of Geological Sciences. IAEG is a worldwide scientific society with more than 5,200 members and 59 National Groups.

The IAEG cooperates with international scientific organizations. It edits a quarterly journal, the Bulletin of Engineering Geology and the Environment. It operates Commissions, led by eminent world specialists, which review the state-of-the-art on various topics. It sponsors international meetings, and international symposia and regional conferences organized by its National Committees. For details, visit www.iaeg.info

ISEG

- The Indian Society of Engineering Geology (ISEG) was founded in 1965 by Dr DN Wadia, the doyen of Indian geology. The ISEG provides a vibrant platform for discussing and debating a host of geotechnical problems and state-of-the-art technologies, and showcases the nation's achievements in the field of geotechniques. ISEG represents the Indian National Group of the IAEG.

The engineering and geoscientific fraternity from across the nation, representing almost all the leading organizations engaged in civil engineering and infrastructure development projects, constitutes the membership base of the Society. The Society provides fora for technical deliberations on relevant topics and has organised a number of Symposia / Seminars / Workshops. For details, visit www.isegindia.org

NIRM

- National Institute of Rock Mechanics (NIRM) was established in 1988 as an autonomous research Institute under Ministry of Mines, Government of India. It is a premier centre for research in applied and basic rock mechanics and rock engineering. NIRM has been developed as a Centre of Excellence for scientific design of mine workings, design of rock excavations and support systems, site characterisation practices, and advanced research in rock mechanics and ground control.

The Institute has a wide ranging clientele in mining, hydro power projects and allied sectors. Equipped with state-of-the-art facilities, the Institute offers research and industry sponsored projects for all types of tunnelling, mining and civil engineering sectors. For details, visit www.nirm.in

■ Specific Topics

Site investigations and rock mass characterization
Stress regime around underground openings
Testing of rocks to determine their physico-mechanical properties
Tunnelling methods / Methods of excavation
Design methodologies, with emphasis on numerical modeling
Rock reinforcement and ground improvement
Instrumentation and monitoring
Hazard assessment and analysis
Environmental management
Other peripheral issues

■ Target Audience

Professional civil and mining engineers, geologists, academicians, research scientists and all others engaged in geotechnical engineering, mining and rock mechanics for underground structures.

■ Call to Authors

Researchers, academicians and practicing engineers are invited to contribute technical papers highlighting their ideas, experiences and findings in the areas and topics related to the theme of the Conference. Soft copy of the papers, in MS Word format, along with authors' affiliations, should be sent by e-mail to icust@nirm.in before 31st December, 2010

■ Keynote Speakers

Prof Ove Stephansson Dr Nick Barton	Steph Rock Consulting AB, Berlin Nick Barton & Associates, Norway	Stress field of the earth's crust Rock mass characterization and appropriatenumerical modelling for civil and mining excavations
Prof Satya Harpalani Prof CS Desai	Southern Illinois University Carbondale, USA University of Arizona Tucson, USA	Use of underground formations for storage of natural gas Constitutive Modeling for Geologic Media and Joints, and Application of Numerical Methods
Prof Jaak JK Daemen Faquan Wu	University of Nevada, Reno, USA Director of Key Lab of Engg Geomechanics, Chinese Academy of Sciences, China	Nuclear Waste Disposal in Underground Mined Space Failure mechanism of rock surrounding tunnels under high geostress
Mr M Gopalakrishnan Dr RK Sinha	Secretary General, International Commission on Irrigation & Drainage Director, Bhaba Atomic Research Centre, Mumbai	Opportunities that Underground Space Offers for Harnessing the Energy Potential in Difficult Himalayan Environ Underground excavations
Dr PC Nawani Dr VM Sharma	Director, NIRM Director, AIMIL (India) Pvt. Ltd., New Delhi	Engineering geological investigations for underground excavations Instrumentation and monitoring
Dr JL Jethwa Mr Rajesh Agarwal	Former Scientist, Central Mining Research Institute, Nagpur General Manager / Projects, Konkan Railway Corporation, Navi Mumnai	Shotcreting in underground space construction Railway tunnels
Mr S P Sen Dr A Nanda	Advisor, Robbins India Ltd Head Technology, Sub Surface Projects Division, Engineers India Ltd	Fesability of long TBM tunnels in the Himalayas Crude oil storage in large underground rock caverns

Venue City

Bangalore (or Bengaluru), is the capital of Karnataka state, India. It is today Asia's fastest growing cosmopolitan city, and is home to some of the most high tech industries in India, particularly to IT industry. It is also home to some of India's premier scientific establishments. The city is blessed with a salubrious climate, gardens and parks, natural lakes. It has developed a number of architectural landmarks, shopping malls, good restaurants, discos and pubs, and business opportunities. It offers something for everyone - music and dance concerts (western and Indian), dramas, exhibitions, carnivals, conferences and more.

Conference Venue



Renowned for its grandeur and impeccable service, Le meridian Bangalore is a true landmark in luxury. Seated at the heart of one of the oldest and most progressive cities of India it renders a truly enchanting experience. Snug amidst the lush green surroundings of the garden city, rich prospects for business, leisure and travel, beckon visitors. Luxurious and elegant, Le Méridien Bangalore towers over a lush golf course while offering panoramic views of the soaring cityscape. A stone's throw away from chic shopping areas, the hotel, offers every delegate the ultimate in comfort and recreation.

Registration

	Indian Rs	US Dollor
Non Members	5000	200
Members ISEG / NIRM	4000	
Accompanying Person	3000	120

- Concession in the Registration Fee is available for Senior Citizens / Students / Research Scholars / persons in their individual capacity. They may e-mail to the Organizing Secretary for getting the concessional registration.
- The registered delegates will be entitled for all the delegation material, pre-conference publication, and the proceedings / full text papers in a CD. All the delegates and their accompanying persons are welcome for working lunch on the three days, and for conference dinners on two nights. Local sight-seeing / shopping trips will be arranged for the accompanying persons during the conference.
- The delegates will have to make their own arrangements for their accommodation and travel

Payment Options

Payment against registration can be made online via credit card (Visa or Master only), or bank draft. American Express Credit Card holders, please write to shazi@cimindia.net

All Demand Drafts should be made payable to "ISEG-ICUST", in Indian Rupees, payable at Bangalore.

Kindly indicate your name and contact number at the back of Demand Draft and send it to the Conference Secretariat.

For online registration and payment, please visit www.icust2011.com

For sending Demand Drafts, kindly fill up the form attached.

For any other queries regarding registration, please contact

Organising Secretary

Dr V Venkateswarlu, Council Member - ISEG

Scientist, National Institute of Rock Mechanics

PO : CHAMPION REEFS – 563 117, (Kolar Gold Fields, Karnataka) India

Ph : +91-8153-275000; +91-9448375514, Fax : +91-8153 – 275002; e-mail : icust@nirm.in

Accommodation Details

Conference Tariff				
Sl.No.	Hotel name	Single room	Double room	Distance from Airport to hotel
1	Le Meridien	₹ 7594	₹ 8719	35 km
2	Gold Finch	₹ 3938	₹ 4500	33 km
3	Tranquil Orchards Suites	₹ 2600	₹ 2800	27 km

- American Express Credit Card holders, please write to shazi@cimindia.net
- You are requested to carry a Photo ID with you
- These special rates are inclusive of accommodation and buffet breakfast
- These rates are applicable for only limited time and number of rooms

Kindly fill up the form attached

Sponsorship Options

Type of Association	Amount	Benefits
Sponsor	₹ 2 lakhs	Free 3 x 3 m space for exhibition, 4 free delegates, Institutional Membership in ISEG Publicity banners at conference venue and logo on all conference material
Co-sponsor	₹ 1 lakh	Free table space for exhibition, 2 free delegates, Institutional Membership in ISEG and publicity banners at conference venue
Supporting Organization	₹ 50,000	Institutional Membership in ISEG, and publicity banner at conference venue

Exhibition

Necessary space with appropriate facilities would be provided at the Conference venue for display of the activities and products of those interested, such as Government agencies, corporate sector, consultants, contractors and manufacturers / suppliers of instruments, equipment and materials.

Sponsors



■ ICUST - 2011 Technical Sessions

Date	Time	Session no.	Theme
17-1-2011(Monday)	08:30 - 10:00	Registration	
	10:00 - 10:45	Inauguration / Welcome	
	10:45 - 11:15	Tea	
	11:15 - 13:00	Technical Session - 1	Site Investigations & Rock Mass Characterization - 1
	13:00 - 14:00	Lunch	
	14:00 - 15:45	Technical Session - 2	Stress Regime around Underground Openings
	15:45 - 16:00	Tea	
	16:00 - 17:45	Technical Session - 3	Physico-mechanical Properties of Rocks & Testing Methods
	18:00 - 19:00	ISEG General Body Meeting	
	19:00 - 21:00	Dinner	
18-1-2011(Tuesday)	09:15 - 11:00	Technical Session - 4	Site Investigations & Rock Mass Characterization - 2
	11:00 - 11:15	Tea	
	11:15 - 13:00	Technical Session - 5	Rock Blasting & Methods of Excavation
	13:00 - 14:00	Lunch	
	14:00 - 15:45	Technical Session - 6	Design Methodologies & Numerical Modeling
	15:45 - 16:00	Tea	
	16:00 - 17:45	Technical Session - 7	Tunnelling Methods
	18:00 - 19:00	Meeting of the IAEG National Groups	
19:00 - 21:00	Dinner & Cultural Programme		
19-1-2011(Wed)	09:15 - 11:00	Technical Session-8	Underground Mining
	11:00 - 11:15	Tea	
	11:15 - 13:00	Technical Session-9	Rock Support; Instrumentation and Monitoring
	13:00 - 14:00	Lunch	
	14:00 - 15:45	Technical Session-10	Hazard Assessment; Environmental Management
	15:45 - 16:30	Open Session / Valediction	General Discussions & Valedictory Function
16:30 - 17:00	Tea		

■ Pre and Post Tours

Half day sightseeing tour options for Bangalore

? A drive past through Vidhana Soudha, Attara Kacheri (High Court of Karnataka), Cubbon Park and visit to Lalbagh Botanical Gardens

or

? A drive past through Vidhana Soudha, Attara Kacheri (High Court of Karnataka), Cubbon Park and visit to Tipu Sultan Palace and Bull Temple

or

? Visit to ISKCON Temple



Full day sightseeing tour options for Bangalore

? Visit to Bannerghatta National Park followed by visit to Tipu Palace after lunch and drive past Vidhana Soudha, Attara Kacheri (High Court of Karnataka) and Cubbon park

? Full-Day City Tours comprising important tourist landmarks, shopping and pilgrimage spots.



Full day excursions from Bangalore

? Visit to Belur, Halebidu & Shravanabelagola
Total Kms to be covered: 550

or

? Mysore
Total Kms to be covered: 350



Tours Ex Bangalore (Overnight)

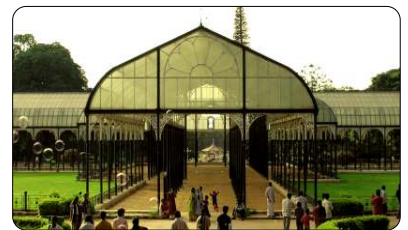
? Mysore and Nagarahole or Bandipur

Package for two nights / three days
(overnight stay at Mysore / Jungle Resort)

Day 01: Bangalore to Nagarahole/Bandipur via Mysore
(5 1/2 Hrs drive). Evening Wildlife Safari

Day 02: Nagarahole/Bandipur Mysore (2 Hrs).
City Sightseeing of Mysore (Maharaja Palace,
Chamundi Hills,
Jayachamarajendra Art Gallery & Brindavan
Gardens). Overnight at Hotel in Mysore

Day 03: Drive to Bangalore via Srirangapatna
History and Bird Sanctuary - Mysore



? Package for one night / two days (overnight stay at Mysore)

Day 01: Bangalore to Mysore via Srirangapatna. Later in
Mysore visits to Maharaja Palace, Chamundi Hills,
Jayachamarajendra Art Gallery & Brindavan
Gardens). Overnight at Hotel in Mysore

Day 02: Early Breakfast and proceed to Ranganathittu Bird
Sanctuary. Later drive to Bangalore



Queen of Hills (Ooty)

? Package for two or three nights / three or four days

Day 01: Arrive Ooty in the evening and check into the hotel/resort. Evening free for relaxation or shopping. Over night stay in the hotel/resort.

Day 02: After breakfast, enjoy sightseeing of Ooty visiting Botanical garden, market place and the Ooty Lake. Over night stay in the hotel/resort.

Day 03: After breakfast, enjoy a day trip to Coonoor. In Coonoor enjoy visit to Sim's park, Lamb's rock and Dolphin's nose. Return to the hotel/resort later in the evening. Over night stay in the hotel/resort.

Day 04: After breakfast, check out of the hotel and drive to Bangalore. Arrival Bangalore



For detailed tour itineraries, additional tour options, customized tours with availability & tariff kindly contact:



Conference Secretariat:

Conferences & Incentives Management (I) Pvt. Ltd

101, First Floor, Infantry Court

130, Infantry Road, Bangalore - 560001

Tel : +91 80 40745800, Fax: +91 80 40745899

Mobile : 9731584207 (Shazi Ali Mirza)

E-mail : shazi@cimindia.net

Web : www.cimindia.net

Note:

* Prior registration at travel counter is necessary.

* Entrance & other fees as necessary has to be paid by the delegates directly.

REGISTRATION FORM

(Please tick the applicable box)

Title Mr. Mrs. Ms. Dr. Prof.

Name:

Accompanying Person's Name:

Address:

Affiliated Institution:

Ph. No: Mobile: Fax No:

City: Country:

ZIP/PIN: Email:

Do you want to book in advance for the accommodation? Yes No

Are you interested in pre- or post-conference tours? Yes No

Delegate Registration Fee

	Indian Rs	US Dollor	Tick Here
Non Members	5000	200	
Members ISEG / NIRM	4000		
Accompanying Person	3000	120	

Payment Options

Credit Card Visa Master American Express

16 digit card number

Expiry Date (mm/yy)

DCB No (Only for Amex)

CVV/CVC No

Name as on card

Amount

Signature

Please duly fill this form and send it to the conference secretariat along with the front and back copy of your credit card. Handling charges @ 2.8% is applicable for Visa & Master card and @ 3.9% for Amex will be charged extra. We are monitored by the Reserve Bank of India rules under which the data will be destroyed on completion of the event.

Demand Draft and Wire Transfer Details

Account Holder's Name: ISEG-ICUST
Account no. 30996158674
Account Type: Savings Bank
Name of the Bank: State Bank of India
Branch Name: Dooravaninagar Bangalore
Branch Address:
PB No. 1605, ITI Campus, Dooravaninagar,
BANGALORE - 560016
IFS Code: SBIN0001438
MICR Code: 560002016

For on-line registration and payment, please visit
www.icust2011.com

For further assistance contact:

Conference Secretariat
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101, First Floor, Infantry Court, 130, Infantry Road, Bangalore - 560001
Tel : +91 80 40745800, Fax: +91 80 40745899
Phone : 9731584207 (Shazi Ali Mirza) E-mail : shazi@cimindia.net
Web : www.cimindia.net



ACCOMMODATION FORM

(Please tick the applicable box)

Title Mr. Mrs. Ms. Dr. Prof.

Name:

Mailing Address:

City: State: Country: Pin:

Telephone: Landline: Mobile

Fax:

Type of Room: Single Double Twin Sharing

ACCOMMODATION FEES - PLEASE TICK AS APPLICABLE

Conference Tariff					
Sl.No.	Hotel name	Single room	Double room	Distance from Airport to hotel	Tick here
1	Le Meridien	` 7594	` 8719	35 km	
2	Gold Finch	` 3938	` 4500	33 km	
3	Tranquil Orchards Suites	` 2600	` 2800	27 km	

*Taxes would be charged extra as applicable

Payment Details

DD/Cheque No. Date:

Amount:

Bank & Branch Name:

Signature:

Cancellation Policy

Cancellations are to be made in writing by email or by fax to the below mentioned address. Conditions apply

Payment Information

Payment should be made in favor of 'Conferences & Incentives Management (I) Pvt. Ltd.,' payable at Delhi
Please send your Cheque / Demand draft to the following address:-



Conferences & Incentives Management (I) Pvt. Ltd
101, First Floor, Infantry Court,
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Web : www.cimindia.net

