



## Workshop on Engineering Geology

Venue: Cluny & Dalvey Room, NUSS Kent Ridge Guild House,  
9 Kent Ridge Drive, Singapore 119241  
Tuesday, 28 May 2013 8.30 AM – 5.00 PM

### SPEAKERS

Dr. Cai Jungang  
Dr. Zhou Yingxin

### REGISTRATION FEE

SRMEG/GeoSS

members: \$240.00

Non-members: \$280.00

PDU: 5

STU: 3

### COURSE SYNOPSIS

This workshop has been developed as a follow-up to our popular Workshop on Singapore Geology held in 2010, 2011 & 2012, in response to feedback from our workshop participants. It aims to provide a link between the knowledge of geology and its engineering applications in underground construction and rock cavern space development. It will present and discuss systematically the fundamentals of engineering geology and best practices both internationally and within the context of Singapore. It will cover the engineering uses of both soil and rocks, the theory and practice in site investigations for underground construction, rock mass classification methods for rock cavern design, and the basic concept and practical aspects of managing geological risks. The workshop is suitable for both engineers with little prior training in engineering geology and experienced engineers who want an update and a refresher course. It will be taught by Dr. Cai Jungang and Dr. Zhou Yingxin, two highly regarded and very experienced specialists.

## REGISTRATION FORM

<b>Title:</b> *Prof / Dr / Mr / Mrs / Mdm / Ms <b>Full name:</b> (underline Surname / Family name)		<b>Membership No.:</b>
<b>Organisation:</b>		
<b>Mailing Address:</b>		
<b>Telephone:</b>	<b>Mobile:</b>	<b>Fax:</b>
<b>Email:</b>		

**SRMEG/GeoSS members:** \$240.00 per person       **Non-members:** \$280.00 per person

Registration is on a first-come-first serve basis. All registrations must be accompanied by cheque payment or credit card number before the course commences. No cancellation or refund is allowed upon registration, only a replacement of name.

### Method of Payment

By Bank Draft / Cheque in Singapore dollars drawn on a bank in Singapore and made payable to:  
"Society for Rock Mechanics & Engineering Geology"

Issuing Bank : \_\_\_\_\_ Bank Draft / Cheque Number : \_\_\_\_\_

By Credit Card. Please deduct the above amount from my: \*VISA / MASTER / AMEX (select one)

Card number: \_\_\_\_\_ Expiry Date (MM/YY): \_\_\_\_\_

Please select one (1) option only, if required:

Invoice       Receipt

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

Please send Registration Form and Payment to:

SRMEG Secretariat

1 Liang Seah Street, #02-11 Liang Seah Place, Singapore 189022

Phone: +65 6336 2328 | Fax: +65 6336 2583 | Email: srmeg@cma.sg | Website: www.srmeg.org.sg



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### PROGRAMME

Time	Topic	Speaker
8:30 AM	Registration	
9:05 AM	Welcome by Dr Cai Jungang, Vice President of SRMEG	
9:10 AM	Fundamentals of Engineering Geology: <i>Geology vs Engineering Geology, soil &amp; rock description for civil engineering purpose, soil &amp; rock weathering classification in Singapore, engineering properties of G(I)-G(VI) &amp; S(I)-S(VI)</i>	Cai Jungang
10:30 AM	Tea Break	
11:00 AM	Site Investigation Practice in Singapore: <i>Code of Practice for site investigations in Singapore, calculation of TCR, SCR &amp; RQD at site, core box handling &amp; marking, borehole log and site investigation reporting, digital geological data format required by BCA of Singapore</i>	Cai Jungang
12:15 PM	Lunch	
1:30 PM	Rock Mass Classification for Underground Rock Cavern & Tunnel Design: <i>Key geological parameters, rock mass classification using the Rock Mass Rating and Q system, and empirical rock support design</i>	Zhou Yingxin
3:00 PM	Tea Break	
3:30 PM	Geological Risk Management for Underground Rock Cavern & Tunnel Construction: <i>Concepts of risks, risk management process, risk sharing, basic strategies for managing geological risks in large rock engineering projects</i>	Zhou Yingxin
4:30 PM	Q&A	

### SPEAKERS' PROFILES



**Dr. Zhou Yingxin** is a Senior Principal Engineer and Head of Cavern Facilities & Rock Engineering with the Defence Science & Technology Agency (DSTA), and Adjunct Associate Professor at the Nanyang Technological University. He has extensive experience in research, engineering, and teaching in the area of engineering geology, rock mechanics and rock engineering, planning and development of underground space. He has been involved in several major rock engineering projects in Singapore and providing technical advice to various government agencies on matters related to rock engineering and underground space use. He lectures regularly at NTU, NUS, and IES for undergraduate and post-graduate studies and industry-based training. Dr Zhou is the current Vice President for Asia of the International Society for Rock Mechanics. He was the founding President of the Society for Rock Mechanics & Engineering Geology Singapore and founding committee member of the Tunnelling and Underground Construction Society Singapore. Dr Zhou serves as a member of the Editorial Board for the International Journal of Tunnelling & Underground Space Technology, and for the International Journal of Mining and Mineral Engineering. He has more than 100 technical publications and six edited books and conference proceedings.



**Dr. Cai Jungang** is currently an Executive Director of Trittech Group Ltd. He has been involved in most rock investigation and underground rock cavern projects in Singapore, such as rock cavern development in Jurong Formation, underground ammunition facilities, underground science city at Kent Ridge, and Jurong oil storage rock caverns (JRC) at Jurong Island. Dr Cai obtained BEng in Engineering Geology from Southwest Jiaotong University of China, MEng and PhD in Geotechnical Engineering from NTU of Singapore. He has over 25 years of practical experience in engineering geology, rock engineering & geotechnical engineering R&D, consultancy and project management, and has published more than 100 technical papers in scientific journals and conference proceedings. He is also the project director of Sintef-Trittech-Multiconsult Consortium for project management and technical review of the on-going Jurong Rock Cavern (JRC), and Underground Rock Cavern (URC) Usage Feasibility Study. He was the founding committee member of the Society for Rock Mechanics & Engineering Geology Singapore.