

## Underground Cavern Construction Seminar Series Sponsored by KAJIMA Corporation

### Seminar 1: Construction of large-scale underground caverns in Japan – History of underground power plant construction and related technologies.

A number of large-scale underground caverns have been built in Japan, especially for underground hydro power plants. The first underground power plant in Japan has been built in the 1930s. Then, with the introduction of nuclear power plant, "pumped-storage" power plant was adopted from the 1960s. The cavern scales have been increased for larger power output up to about 50m height, about 1,400m<sup>2</sup> of cross-sectional area, and about 250,000 m<sup>3</sup> of volume.



In this seminar, a variety of construction experiences of the underground power plants in Japan will be presented.

Geological survey and rock test techniques, stability analysis and support design of caverns, monitoring management of caverns during construction, and construction technologies of underground power caverns in Japan will be highlighted in the seminar.

Finally, leading-edge observational construction technology such as groundwater control technology and grouting technology applied at a recently completed LPG underground rock storage base will be briefly introduced.

This is the first of 5 high-level technical seminars on Underground Cavern Construction planned by Engineering Alumni Singapore (EAS) & Society for Rock Mechanics and Engineering Geology Singapore (SRMEG) with technical support by KAJIMA Corporation to highlight the many types of underground caverns already built in Japan and to showcase the many technologies that goes into the building of an underground cavern. The possible topics in the next 4 seminars might be focused on Design and Construction detail of the Kurashiki LPG storage project, Ventilation System, Contractual scheme and Geological & Geotechnical issues, all relating to underground cavern construction.

**Attendance is free due to the great support from EAS, SRMEG & KAJIMA Corporation. Attendance is limited to 150 people. Please register your attendance with the form below.**

*Dr. Takayuki MORI*

*Takayuki Mori is an assistant director of the rock mechanics and hydro-geology group of Kajima Technical Research Institute. He has been engaged in various technical works for underground power station projects, such as geological survey and rock test, stability analysis and support design of caverns, and monitoring management of caverns during construction. He graduated from Waseda University in 1977 and was awarded the degree of Doctor of Engineering from Kyoto University in 2003 with a degree thesis on the evaluation of EDZ (Excavated Damaged Zone) of underground rock cavern.*



Engineering  
Alumni  
Singapore



Society for Rock  
Mechanics and  
Engineering  
Geology (Singapore)



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**Date : 17 March 2014**

**Time : 6PM – 8.30PM**

**Venue : Shaw Foundation Alumni House, 11 Kent Ridge Drive, Singapore 119244**

### Programme

6.00PM Light buffet dinner  
7.00PM Technical presentation  
8.00PM Q&A

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## REGISTRATION FORM

Email to: [srmeg@cma.sg](mailto:srmeg@cma.sg) or Fax to: +65 6336 2583

Title : Prof / Dr / Mr / Mrs / Mdm / Ms *(delete where appropriate)*

Family Name : \_\_\_\_\_

First Name : \_\_\_\_\_

Organisation : \_\_\_\_\_

Mailing Address : \_\_\_\_\_

Office Tel. : \_\_\_\_\_

Mobile : \_\_\_\_\_

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