



You are cordially invited to the Seminar organized by the NTU-JTC Industrial Infrastructure Innovation Centre

Seminar on

Case histories and lessons learned from hydropower caverns and tunnels around the world

Seminar Topic:

There has been considerable development in tunnelling technology and an increase in the use of the underground for various purposes, including hydropower caverns and tunnels. It is now common to locate powerhouses underground if possible, and longer and longer tunnels are being excavated to convey more and more the water to the turbines all over the world.

In this seminar, a brief description of the development of the hydropower industry in Norway with particular concentration on the underground aspects would be provided. A special lesson learned from the Norwegian hydropower projects that it is possible to replace the standard ventilated surge chamber by an unlined rock cavern operating as an air cushion would also be shared. Moreover, having been involved in different ways on hydropower projects in many countries around the world, the speaker will present some problems caused by special types of rock masses and stress conditions in water conveying tunnels, which are experienced from some selected projects.

About the Speaker:

Professor Einar Broch, former President of the International Tunnelling Association (ITA) and Editor-in-Chief of the Journal "International Journal for Tunnelling and Underground Space", holds a M.Sc. Equiv. in Civil Engineering (Norwegian Institute of Technology- NTH), an M.Sc. in Engineering Rock Mechanics (Imperial College of Science and Technology), and a PhD. in Engineering Geology (NTH). He is member of the Norwegian Academy of Technological Sciences and published more than 100 scientific papers. He developed the Point Load Test Method for measuring the uniaxial compressive strength of rock when he was a young scientist which is nowadays still widely used worldwide. In addition, Prof Broch has worked as consultant and technical advisor and participated in the design and construction of a wide variety of projects in more than 20 countries. He has also been the member of Panel of Experts for a number of World Bank projects.

Date: Friday, 16th January, 2015

Venue: CEE Seminar Room A, Block N1, Level B1, N1-B1b-06

Time: 1000 to 1100

School of Civil and Environmental Engineering (CEE)

To register for this seminar, please click on the link below, or scan the barcode to register online.

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