



Vancouver Geotechnical Society

A Local Section of the Canadian Geotechnical Society

www.v-g-s.ca

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NOTICE OF UPCOMING DINNER PRESENTATION Thursday, October 30, 2008

SUBJECT: SOME COMPLEX PROBLEMS CONCERNING THE LOETSCHBERG BASE TUNNEL

SPEAKER: Professor Aurèle. Parriaux, Ph.D., Swiss Federal Institute of Technology, Lausanne.

CONTENT: The Loetschberg base tunnel, completed in 2007, crosses the northern range of the Swiss Alps. It then joins the Simplon tunnel in the South. Over the 34.6 km of tunnel, the engineers and geologists had to face several delicate situations, with varying success. The presentation deals mainly with two cases, which are interesting from a geologic perspective. The first case was solved successfully, but not the second one.

Case 1: A segment of the tunnel through a thermal source aquifer under high hydraulic heads (with a water column more than 1000 m high). Any withdrawal of the aquifer was prohibited to avoid harmful effects on the thermal springs of the famous Leukerbad resort.

Case 2: Subsidence of the village of St-Germain has resulted from extensive drawdown of the water table within a rock aquifer covered by a thick accumulation of debris from a large rock slide. The presence of silt layers and the associated slope marsh caused serious subsidence with differential settlements. The spring, which was the main water supply of the village, has disappeared.

SPEAKER: Aurèle Parriaux studied geology in Lausanne, Switzerland and obtained his PhD in hydrogeology. He has a wide range of expertise in highway construction, geological hazards, groundwater issues, underground facilities, and management of natural resources.

In 1991, he became Professor at the Swiss Federal Institute of Technology in Lausanne. He teaches engineering geology to students in civil engineering and in environmental sciences and engineering. He also gives lectures at the University of Lausanne and at the “Ecole Lémanique des Sciences de la Terre et de l’Environnement” (ELSTE). He is acting head of the Laboratory of Engineering and Environmental Geology (GEOLEP). He leads a team of about twenty in the fields of geological hazards and underground resources, doing research on:

- Hydrogeology of unstable slopes,
- Determination of uncertainties in engineering geology and their effects,
- Geological typology with regard to geological hazards,
- Impact of underground works on subsurface resources,
- Behaviour of cataclastic rocks in civil engineering underground works,
- Trace elements in groundwater, origin of waters,
- Quantitative and qualitative management of groundwater.

Professor Parriaux is a well known expert in various fields of engineering and environmental geology. Recently he had to access complex problems linking tunnel construction and groundwater resources protection. He has authored the book “Géologie, bases pour l’ingénieur”, with an English version to appear in 2008, and coauthored the Swiss Guide for delineating groundwater protection areas. He is active in seven

international and national organizations, and chaired the Swiss Hydrogeological Society for six years. Between 2001 and 2006, he was Director of the Civil Engineering Section of the Swiss Federal Institute of Technology at Lausanne.

LOCATION
& TIME:

Executive Inn, 4201 Lougheed Highway, Burnaby, BC V5C 3Y6 (Phone: 604-298-2010)

Social Hour: 5:30 to 6:30 pm (drinks available at the hotel bar)

Technical Presentation: 6:30 to 7:30pm

Dinner: 7:45pm (\$10 will be charged for dinner to cover a small portion of the cost.)

RSVP: Dinner reservation to cwilliams@golder.com on or before Monday, Oct 27, 2008.