

**SPECIAL LECTURE: Integrating sustainability and risk into the determination of intervention programs for multiple municipal infrastructure networks****Professor Bryan T. Adey**

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Management,Swiss Federal Institute of Technology (ETH),  
Zürich, Switzerland**Date: March 6, 2018****Time: 1:30 – 3:00 PM****Venue: Neil Armstrong Bldg,  
Room 1010****Hosts: Professors Samuel Labi,  
Markarand Hastak,  
& Roshanak Nateghi****ETH** zürich**Abstract**

The development of optimal intervention programs for municipal infrastructure including road, gas and water distribution networks, against a background of sustainability and risk, continues to pose a challenging task. To develop such programs, there is a need for infrastructure engineers to consider (i) a wide range of cost types associated with various interventions including the owner's costs, users costs, and environmental costs, (ii) the potential loss of service before, during and after the intervention, and the loss of service when interventions are being executed, and (iv) the interdependencies across multiple overlapping networks in an area. It is vital to consider the interdependencies for at least two reasons: the reductions in intervention costs are possible when interventions are executed on multiple networks simultaneously, and the interventions on one network can increase the probability of failure of another. This presentation discusses a methodology to determine optimal intervention programs for multiple infrastructure networks simultaneously and in a manner that duly these interdependences and accommodates sustainability and risk considerations.

**Speaker's Biography**

Professor Bryan T. Adey is the professor of infrastructure management at the Institute of Construction and Infrastructure Management (IBI) at the Swiss Federal Institute of Technology in Zürich, Switzerland (ETHZ). He obtained a Bachelor's of Civil Engineering from Dalhousie University in 1995, a Master's of Science in Structural Engineering from the University of Alberta in 1997 and a Ph.D. in Infrastructure Management from the Swiss Federal Institute of Technology in Lausanne (EPFL), Switzerland in 2002. Following the completion of his doctorate, Prof. Adey co-founded the consultancy Infrastructure Management Consultants Ltd. (IMC) in Zürich, Switzerland, where he advised owners of large infrastructure networks on investment decisions and management strategies. In 2010, Dr. Adey left IMC to become the chair of the Infrastructure Management Group (IMG) in the Institute of Construction and Infrastructure Management (IBI) at the Swiss Federal Institute of Technology in Zürich (ETHZ). The focus of his current research efforts include the development of methodologies and algorithms to assess the risk related to infrastructure networks that allow infrastructure managers develop optimal risk reducing intervention strategies and programs.

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