

## LSGI Public Lecture Series

### “The Trinity and Devil(s) of Infrastructure Asset Management”

#### Overview

It was our pleasure to invite Dr. Arnold Yuan, Director, Ryerson Institute for Infrastructure Innovation (RIII), Associate Professor, Department of Civil Engineering, Ryerson University, Canada, to deliver a seminar of the LSGI Public Lecture Series on 13 Dec 2018.



#### Biography

Dr. Arnold Yuan is currently an Associate Professor of the Department of Civil Engineering, Ryerson University. A structural engineer by training, Dr. Yuan has been working in the research area of life-cycle infrastructure management over the past sixteen years, focusing on engineering risk and reliability, system safety, infrastructure asset management, and construction management. His expertise focuses particularly on stochastic deterioration modeling, and inspection and maintenance optimization. He has studied many different engineering systems including building structures, bridges, highway pavements, nuclear power plants, water mains and sewers, and recently sidewalks. As a PI, he has completed more than fifteen research projects funded by various organizations including NSERC, PPP Canada, the Ministry of Transportation of Ontario, York Region, Peel Region, the City of Calgary, and a few private companies as well. In May 2014, Dr. Yuan was appointed as the founding Director of Ryerson Institute for Infrastructure Innovation.

#### *The Trinity and Devil(s) of Infrastructure Asset Management*

Infrastructure Asset Management has been recognized as a pivotal strategic management process for both private and public organizations. Many say that it involves multi-criteria decision making – the level of service (LOS), cost, and risk being the three major criteria. How exactly these three criteria relate and affect the business process has not been clarified. In this talk, Dr. Arnold Yuan will first disentangle the relationship of the three criteria. Next, he will focus on the discussion of the ‘devils’ (deterioration and disasters) in asset management. Finally, following the data-model-information-decision logic, he will propose a unified decision making frame that can integrate various data availability, disparate model structures, and all three decision criteria into one system. Case studies from different industry sectors will be presented.