

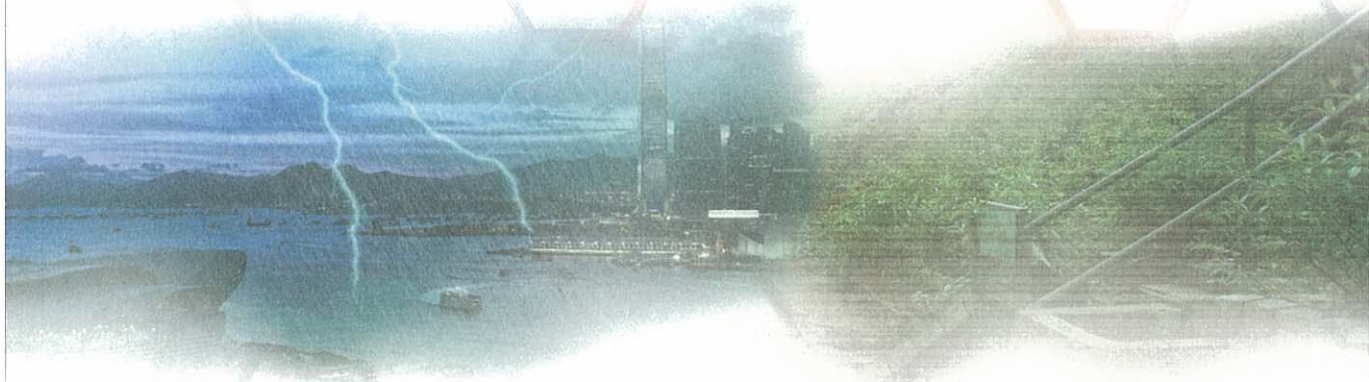
Organiser

**HKIE** THE HONG KONG  
INSTITUTION OF ENGINEERS  
香港工程師學會

The Hong Kong Institution of Engineers

# Distinguished Lectures

Climate Change and Engineering Solutions



**9/12/2017**

2:30pm – 4:00pm Saturday

Wang Gungwu Theatre, P4, Graduate House,  
The University of Hong Kong



Global Climate Change and  
Its Implications to Hong Kong



Mr SHUN Chi Ming,  
JP, FRMetS

Director of the Hong Kong  
Observatory of the  
HKSAR Government

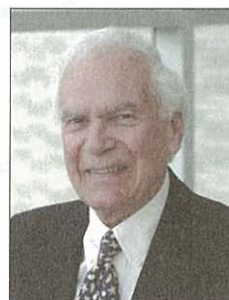
**12/12/2017**

7:00pm – 8:30pm Tuesday

Wang Gungwu Theatre, P4, Graduate House,  
The University of Hong Kong



The Evaluation of Slope Stability :  
A Further 25 Year Perspective



Professor Norbert R.  
MORGENSTERN

Distinguished University  
Professor (Emeritus) of Department of  
Civil and Environmental Engineering of  
University of Alberta

The Lectures will be conducted in English.

Online Registration

<http://www.hkie.org.hk/distinguishedlectures2017>

Free admission. Prior registration is required. Limited seats available with priority given to the HKIE members.  
Participants will receive a Certificate of Attendance for each Lecture.





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Wang Gungwu Theatre, P4, Graduate House,  
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## Global Climate Change and Its Implications to Hong Kong

Mr SHUN Chi Ming, JP, FRMetS

Director of the Hong Kong Observatory  
of the HKSAR Government

### Abstract

The human-induced climate change has become the greatest challenge of our time. The global annual average atmospheric carbon dioxide concentration reached 403 ppm in 2016, surpassing 400 ppm for the first time in the modern atmospheric measurement record and in ice core analysis dating back to 800,000 years ago. The increase from 2015 was 3.5 ppm, marking the largest annual increase in the 58-year record. The increasing greenhouse gas concentration has caused the planet to warm which, in turn, leads to a number of serious consequences including more heat waves, more extreme precipitation, substantial ice loss from glaciers and giant ice sheets, as well as rising global mean sea level at an unprecedented rate in the past three millennia.

Hong Kong is not immune to the impacts of global climate change. Even allowing for the urbanisation factor, we have experienced a significant warming trend in the past 130 years or so, and the annual number of very hot days has increased six-fold in the past century. With more frequent extreme weather expected as a result of climate change, the chance of hourly rainfall exceeding 100 mm has since doubled. Along with rising global mean sea level, an average sea level rise of around 3 mm per year is recorded at the Victoria Harbour in Hong Kong.

In this presentation, the latest situation of global climate change will be reviewed and its implications to Hong Kong highlighted. The Hong Kong Observatory is committed to working with all stakeholders, especially the engineering sector, and the community at large in taking forward mitigation, adaptation and resilience-building plans and actions to combat the impacts of climate change.

### About the Speaker

Mr SHUN Chi Ming graduated as Bachelor of Science from the University of Hong Kong in 1985. He joined the Hong Kong Observatory as Scientific Officer in 1986 and received professional training in nuclear radiation and meteorology in 1986 and 1987 respectively. His subsequent work includes weather forecasting, seismology, time service and numerical weather prediction. He specialised in aeronautical meteorology since the 1990s and led a team of researchers to develop the world-first Light Detection And Ranging (LIDAR) Windshear Alerting System for the Hong Kong International Airport. This innovative work received the top award – the Award of the Year - in the Hong Kong ICT Awards 2009 and was internationally recognised, for example, by the US Federal Aviation Administration.

He has taken up international responsibilities since the early 2000s and served as the chair of the Asia/Pacific regional group on aeronautical meteorology of the UN International Civil Aviation Organisation (ICAO) from 2003 to 2009. Since 2010, he has become the President of the Commission for Aeronautical Meteorology (CAeM) of the UN World Meteorological Organisation (WMO) – the first Chinese, and in fact also the first Asian, taking up this high position in the WMO. He is also Permanent Representative of Hong Kong, China with WMO.

His other professional affiliations include Chair of the Hong Kong Meteorological Society, Fellow of the Royal Meteorological Society (FRMetS) and Member of the Chinese Meteorological Society Executive Committee. Locally, he serves on a number of advisory bodies, including the Government's Steering Committee on Climate Change, Radiation Board, and Advisory Committee of the School of Energy and Environment of the City University of Hong Kong.



# 12/12/2017

7:00pm – 8:30pm · Tuesday

Wang Gungwu Theatre, P4, Graduate House,  
The University of Hong Kong



## The Evaluation of Slope Stability : A Further 25 Year Perspective

Professor Norbert R. MORGENSTERN

Distinguished University Professor (Emeritus) of  
Department of Civil and Environmental Engineering of University of Alberta

### Abstract

In 1992, Professor Norbert R. MORGENSTERN presented a lecture to the ASCE Conference on Stability and Performance of Slopes and Embankments – II with the title “The Evaluation of Slope Stability – A 25 Year Perspective”. This occasion presents the opportunity to update his perspective for the subsequent 25 year period, to 2017. In this Lecture, Professor MORGENSTERN will not attempt an omnibus state-of-the-art review but instead he will concentrate on very personal learnings, with relevant case histories, under the sub-headings of “Analysis and Design”, “Mobility and Risk” and “Professional Practice”.

### About the Speaker

Professor Norbert R. MORGENSTERN is an international authority on geotechnical engineering relating to slope stability and dam design, a pioneer of permafrost and cold regions engineering research and a highly sought-after consultant. He has made major contributions in research and engineering practice to many areas of the geotechnical discipline, including the development of the Morgenstern-Price method for stability analysis, the analysis of rate effects in earth materials, earth and rockfill dam engineering, tailings engineering, static liquefaction phenomena, and the rapidly developing field of risk analysis applied to engineering works.

As an educator, researcher and practitioner, the international scope of his experience spans over 30 countries on six continents. Throughout his career as an educator, he has trained a significant pool of highly qualified personnel and continues to actively contribute to the University of Alberta, where he currently holds the title of Distinguished University Professor Emeritus. Many of his students have become renowned practitioners and international experts in the geotechnical engineering discipline. He has received honorary degrees from the University of Toronto, Queen’s University and the University of Alberta. In addition, he is an Honorary Professor at Zhejiang University, PRC.

His noteworthy service and research in geotechnical engineering has been recognised by several professional organisations: he has also been elected a Fellow of the Royal Society of Canada, the Canadian Academy of Engineering, Engineering Institute of Canada, Canadian Society for Civil Engineering and American Society of Civil Engineers. Other significant honours include being named a Foreign Associate of the U.S. National Academy of Engineering, a Foreign Member of the Royal Academy of Engineering, United Kingdom, and a Foreign Fellow of the National Academy of Engineering of India. Both honours are bestowed to select individuals for a lifetime’s worth of extraordinary engineering accomplishments. Furthermore, he has been inducted into the Alberta Order of Excellence and the Order of Canada – the highest honours available to Canadians – for his outstanding achievements in and life-long contributions to geotechnical engineering.

As an educator, researcher and practitioner, he has bolstered Canada’s reputation as an international leader in applied earth science research and, in particular, has made major contributions in research and engineering practice to many areas of the geotechnical discipline.

## Organising Committee for the Distinguished Lectures

Ir Prof LEE Chack Fan (Chairman)

Ir CHOW Lap Man

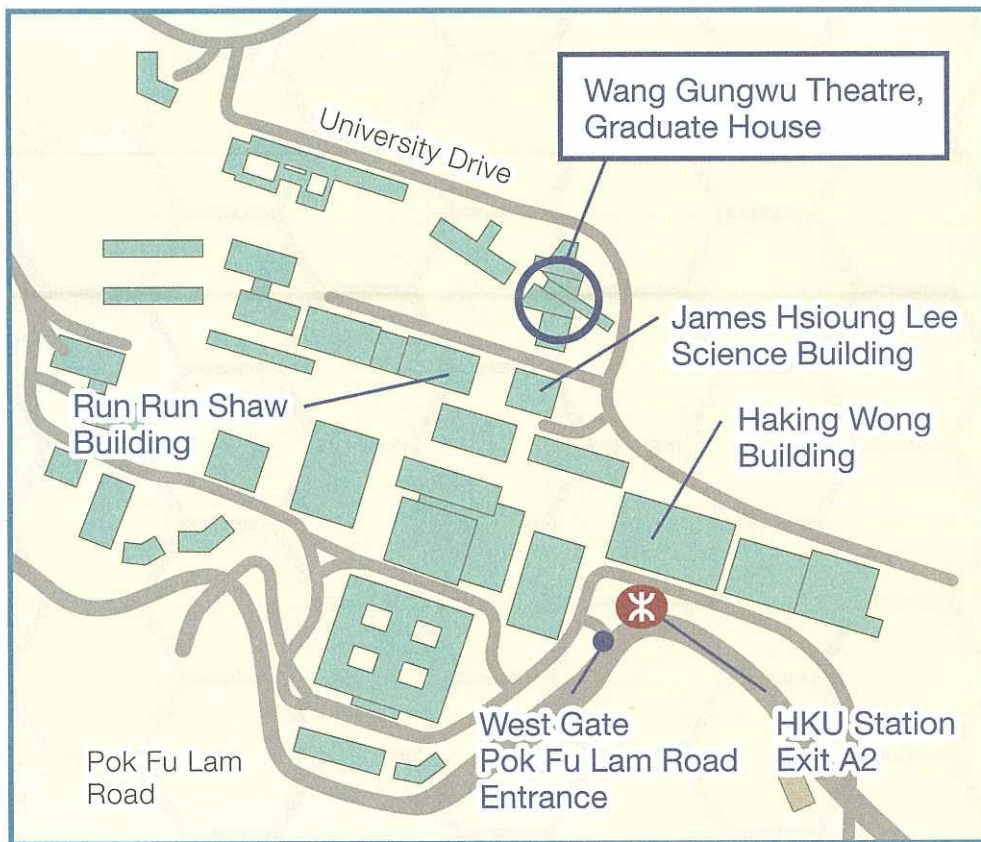
Ir Prof Adam S C CHOY

Ir Prof Charles W W NG

Ir TAI Tak Him

Ir Duncan W O WONG

## Location Map



## Supporting Organisation



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