The Institution of Engineers, Malaysia

Environmental Engineering Technical Division (ENETD)

Proudly presents

WEBINAR TALK ON

"ROLE OF SUSTAINABLE URBAN DRAINAGE SYSTEM IN ADAPTING TO CLIMATE CHANGE"

BEM APPROVED CPD HOURS: 2.0 **REF. NO : IEM21/HQ/029/T (w)**

10 MARCH 2021, WEDNESDAY

3PM - 5PM

SPEAKER :

PROF. DR. CHAN NGAI WENG

Geography Section, School of Humanities,
Universiti Sains Malaysia (USM)

Registration Fee (effective from 1st August 2020)

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Synopsis

Climate change is a highly pervasive phenomenon in the 21st century, largely caused by anthropogenic activities and resulting in severe negative effects on natural systems including hazards such as heat waves, urban heat islands, floods and droughts. To address these hazards, better coping, adaptation and resilience are needed at the city level. Cities all over the world suffer from heat, flood and drought hazards that often escalates into disasters resulting in significant loss of life, injury and property losses. This talk examines the incidence of heat, flood and drought occurrence in urban areas, and examines how sustainable urban drainage systems (SUDS) can be used to combat these hazards. Addressing these issues will lead to achievement of Sustainable Development Goals 6 (Clean water and sanitation), SDG 11 (Sustainable cities & communities) and SDG 13 (Climate action). The methodology is based on past research, historical event analysis, literature review, case studies and other secondary data. Results indicate that heat, flood and drought hazards in cities can be effectively reduced by using SUDS which incorporate vegetated surfaces that absorb and retain rain and stormwater, purify and store it, and transfer heat elsewhere. Results show that a SUDS reduces flood peaks, thereby reducing the incidence of flash floods. SUDS also purify and store rain and stormwater, often in ponds, which can be used to address drought problems. Finally, SUDS is found to be a viable method of solar radiation reflection and heat transfer as cities using SUDS were found to cope very well with heat as they record lower incidence of urban heat islands. Overall, the green landscape offered by SUDS are also found to be aesthetically pleasing, socially acceptable as it is safe for the public and cost-effective. In conclusion, a holistic strategy combing technical application of SUDS and non-technical human coping and resilience is the key towards effective adaptation to climate change in terms of heat, floods and droughts in cities.

Speaker's Profile

Professor Dr Chan Ngai Weng is trained as a geographer, a field that focuses on human-environment relationships. He obtained his BA (Hons) Geography and Masters in Climatology & Meteorology from the University of Malaya in 1977 and 1981 respectively. His PhD is in Environmental Hazards Management (Floods) from Middlesex University (UK) in 1995. Based on his educational background, he has more than 40 years experience in lecturing, research, consultancy, writing and publication, and also as an environmental activist. His working experience is as follows: University of Malaya (1977-1986), Universiti Sains Malaysia (1986-Present), the University of Memphis USA (2000-2001 Sabbatical) and the Asian Institute of Technology Thailand (2006-2007 Sabbatical). He served as Vice-President of the International Water Resources Association (IWRA) (2013-2015), and is a member of the International Association of Hydrological Sciences, International Water Association and Malaysian Water Association. He is active in civil society work in the area of water resources and environmental management. Currently, he is President of Water Watch Penang (WWP) (1997-Present), member of Malaysian Environmental NGOs (MENGOs) and Malaysian Water Partnership. In 2010, he was awarded Winner of the Asia Water Management Excellence Award. He has completed 67 research/consultancy projects, published 30 books, 110 book chapters and 128 papers in professional journals. In the civil society arena, he is fondly referred to as "Malaysia's Waterman"!