INAUGURAL CHIAM TEONG TEE MEMORIAL LECTURE-CUM-LUNCH

The Abnormal becomes The New Normal
- Managing Water Hazards in the Context of Climate Change

By

Datuk Paduka Ir. (Dr.) Hj. Keizrul bin Abdullah

Organised and Managed by:
IEM Academy Sdn Bhd

Co-Organised and Supported by:
Professional Practice Committee
Water Resources Technical Division

Date : 10th March 2018, Saturday
Venue : Sheraton Petaling Jaya, Selangor
Time : 12.00 pm – 2.00 p.m

BEM APPROVED CPD/PDP: 2.0 HOURS
REF. NO.: IEM17/HQ/481/L
(CLOSING DATE: 8 JANUARY 2018)

IMPORTANT NOTE
IEM members are required to produce their membership cards for CPD scanning.
THE LATE IR. CHIAM TEONG TEE - LIFE DEDICATED TO PROGRESS OF THE ENGINEERING PROFESSION

Ir. Chiam Teong Tee (fondly known as Peter Chiam) was born in Penang in 1934. He received his secondary school education at Penang Free School. He was one of the first batch of engineering students from the University of Malaya then in Singapore and graduated in 1958. He also obtained a Master degree in Engineering Science (MEngSc) from the University of New South Wales in 1968 under the UNESCO Fellowship. Ir. Chiam passed away on Saturday 30th January 2016, aged 82. Ir. Chiam was married to the late Mdm Khoo Siew Choo. He is survived by his daughter, Mdm Elaine Chiam and son, Chiam Chen Yoong.

Ir. Chiam started his career in the Department of Irrigation and Drainage (DID) in 1958. In 1962 he joined Lau & Partners, a consulting engineering firm before going back to the University of Malaya in Kuala Lumpur as a lecturer in 1963 on the encouragement of the late Tan Sri Datuk Ir. Dr. Prof Chin Fung Kee. He together with Ir. Dr. Ting Wen Hui was roped in after their graduation in 1958 by the late Tan Sri to return from Singapore to Malaysia to assist with the setting up of the laboratory equipment in the new faculty buildings at Pantai Valley. In 1971 he was appointed as the Deputy Dean and later the Dean of the Faculty of Engineering in 1973. In 1975, the late Ir. TT Chiam retired from University Malaya with all engineering courses conducted at the Faculty of Engineering. University Malaya received full professional recognition from all the professional institutions of the United Kingdom. That was an amazing feat achieved by him as the Dean of the Faculty of Engineering. The switch from English to Bahasa Malaysia as medium of instruction in 1976 caused an exodus of lecturers and subsequently the loss of professional recognition of engineering degree of UM at that time by the professional institutions of the United Kingdom.

Although retired from engineering education proper in the mid-1970s, the late Ir. Chiam was instrumental in the introduction of the IEM/BEM Graduate Examination. In 1976, Ir. Chiam together with Dr. Tam Chat Tim formulated the regulations for the Part 1&2 Examinations which were to enable IEM to negotiate with the Council of Engineering Institutions (CEI), the predecessor of the Engineering Council (EC), to conduct the examinations. The objective of the Examinations is to provide an opportunity for young Malaysian sub-professionals who wish to upgrade themselves, to achieve professional status through local professional examinations. The CEI gave its approval for IEM to use the CEI Examinations in August 1977 and the inaugural Examinations was held in May 1978 with 72 candidates approved to sit for Part 1 and another 13 candidates for Part 2 of the Examinations. Through the years many local sub-professionals have benefitted from this examination and many of them went on to become very successful engineers.

After his retirement from University Malaya, the late Ir. Chiam founded Perunding Bakti Sdn Bhd, an engineering consultancy firm in the areas of civil, mechanical and electrical engineering. He was involved directly in many projects undertaken by the company including drainage and irrigation works, highways, high rise buildings and housing developments.

Ir. Chiam also worked very closely with the late Tan Sri Datuk Ir. Dr Prof. Chin Fung Kee who was his mentor and became very involved with The Institution of Engineers, Malaysia (IEM) when the late Tan Sri Ir. Prof. Chin Fung Kee became the President of IEM from 1966 to 1968. In his first year in IEM Council, Ir. Chiam initiated the complete redraft of the new IEM Constitution and Bylaws (under the chairmanship of the Late Tan Sri Ir. JG Daniel) including the use of the title "Ir." for all the members of The Institution of Engineers, Malaysia, irrespective of their grades of membership. The title was thereafter included in the Registration of Engineers Act as a title exclusively for the use by all professional engineers registered with the Board of Engineers, Malaysia (BEM). Other relevant professional bodies, such as the Architects, Surveyors etc subsequently followed suit giving titles such as Ar. and Sr. respectively to their members!

Ir. Chiam actively served the engineering profession through IEM in various capacities for 50 years since the 1960s and in 1981; he was elected President of IEM. During his involvement with IEM, he initiated various policies to maintain the standard of the engineering profession such as:

- The inclusion of a paper on Code of Ethics for the IEM's Professional Interview
- The publication of the IEM Conditions of Contract and IEM Rules on Arbitration
- The setting up of a Dispute Resolution Practice (DRP) Sub Committee; now known as Dispute Avoidance and Resolution Practice (DARP) Subcommittee.

He was conferred the IEM Honorary Fellowship in 1986 and inducted into the IEM Engineering Hall of Fame in 2012 in recognition of all his invaluable service to the Institution and the profession. Even though he no longer served in the IEM Council after 2006, he continued to give his service to IEM in other areas such as professional practice and arbitration.

Ir. Chiam has been an Arbitrator since 1981 and was on the IEM Panel of Arbitrators and also on the Panel of Arbitrators at the Regional Centre for Arbitration in Kuala Lumpur (KLRCA). He was a Fellow of the Malaysian Institute of Arbitrators (FMIArb). He was also responsible for setting up the IEM Arbitration Subcommittee when he was the IEM President in 1981 and helped prepare the initial draft of the IEM Arbitration Rules. During his tenure as President of IEM, the late Ir. Chiam also proposed to the government on the setting up of the Ad hoc Arbitration Tribunal consisting of KSUs of the Ministry of Finance, ICU and EPU. The Ad hoc Committee was to meet whenever a government contractual claim was to be referred to arbitration.

The late Ir. Chiam was also involved in conducting the research on the engineering scale of fees which resulted in a working paper being proposed to the government. The proposed three scales of fees was then approved and used by the government.

All through the years, the late Ir. Chiam had worked relentlessly in various capacities and in various bodies to promote the engineering profession and the professionalism of the engineers in the industry. From the drafting and implementation of arbitration rules to upholding the standard of engineering education in the country, he has been giving selflessly to society in general and the profession in particular. He will always be remembered by those who had benefitted be it the IEM/BEM Graduate Examinations, the IEM Arbitration rules or those who hold the title "Ir.".
CHIAM TEONG TEE MEMORIAL LECTURE

In consideration of the immense contributions by the late Ir. Chiam Teong Tee to the engineering education and the engineering profession in Malaysia in general and to IEM in particular, the IEM Council at its 408th meeting held on 24 July 2017 decided to honour Ir. Chiam Teong Tee by setting up an Annual Chiam Teong Tee Memorial Lecture in IEM to be managed by the IEM Academy Sdn Bhd.

The Inaugural Lecture will be held on 10th March 2018 and the details of the lecture are provided below:

Synopsis

Many types of natural disasters strike each year, killing thousands of people and wreaking vast economic destruction. Over the period 2005-2014, there were 4,000 reported disaster events globally, affecting 1.75 billion people and incurring economic damages of US$1.16 trillion. While some of these disasters were on a vast scale which hit the global headlines, most were smaller events that did not. Many of these disaster occurrences and impacts were disproportionately water-related, making water-related hazards such as tsunamis, floods and storms (typhoons, hurricanes, cyclones) amongst the most damaging natural hazards affecting humankind, causing misery and death to countless innocent people; damaging properties, infrastructure and crops; and causing disruption to commerce and industry.

Malaysia is fortunate to be spared from the threat of severe storms such as typhoons, hurricanes and cyclone but floods remain the greatest natural hazard affecting the country with some twelve percent of the land area being flood prone. The rapid pace of development in past decades has resulted in a disproportionate increase of the runoff and halving the time of concentration. The consequence of this is a many fold increase in the river discharges leading to more frequent and more intense flooding. This situation is expected to be further aggravated due to the impact of global warming and climate change. The Intergovernmental Panel on Climate Change (IPCC) has assessed that there will be intensification of the hydrological cycle on a global basis, leading to increased frequencies and intensities of extreme weather events i.e. water-related hazards will occur more frequently and will be larger, more intense and last longer. Hence, abnormal (extreme) events will increasingly become normal (more common) events. We have seen, in the recent past, numerous occurrences of extreme storms and water hazards such as the Aceh Tsunami (2004), Hurricane Katrina (2005), Tropical Cyclone Nargis (2008), Hurricane Sandy (2012), Super Typhoon Haiyan (2013), Hurricane Harvey (2017) and Hurricane Irma (2017). In Malaysia we had the disastrous floods of 2014.

The traditional engineering approach to managing water disasters has been to try to protect from the water hazards. Engineers attempted to ‘control’ the water hazard through structural measures. These include the construction of tsunami walls, flood storage dams, the deepening and widening of rivers to increase their capacities and the protection of low lying areas through the provision of coastal and river levees. Such an approach tends to be problem driven, where projects are implemented to reduce the impact of the water hazard in an area without giving much consideration to the impact of such projects on upstream or downstream areas. In many cases, such piece meal solutions end up transferring the water hazard to another area.

Engineers then modified the approach to ‘mitigate’ (reduce the impact) rather than attempting to ‘control’ the water hazard. This approach involves a combination of structural and non-structural measures. Non-structural or ‘soft’ measures include water hazard zoning, forecasting and warning systems, water disaster risk mapping and disaster insurance. However, such measures have proven to be inadequate as mitigation works could not keep pace with the rapidly increasing intensities and magnitudes of water hazards arising from development and urbanisation as well as climate change.

The challenge now is to focus on ‘adaptation’ (adjusting to changing situations) i.e. solutions have to be flexible and adaptable to changing situations. At the same time, the solutions have to be viewed at a macro level and in the context of a river basin, so as to promote a holistic and integrated approach rather than localised and fragmented. Complementing this, there is now greater emphasis on disaster risk reduction and on building resilience to water disasters.

This Lecture will trace the engineering efforts in managing water hazards, drawing on the Speaker’s four decades long work experience in water engineering and his involvement in many national, regional and international water institutions and organisations.

About the Presenter

Datuk Paduka Ir. (Dr.) Hj. Keizrul bin Abdullah is a Past President of the Institution of Engineers Malaysia (IEM) and has been involved in the field of water and water resources engineering for the past 42 years. Upon graduation from the University of Malaya as a civil engineer in 1975, he joined the Department of Irrigation and Drainage Malaysia, where over an illustrious career, he rose to become the Director General in 1997 until his retirement from public service eleven years later. As Director General, he pushed for a more environment-friendly approach to solving water issues and advocated the need to manage water, river, flood and coastal problems in a holistic and integrated manner.

He was responsible for initiating a number of rehabilitation and restoration projects to “bring nature back to the rivers” and introduced a control at source approach for urban storm water management. He championed the mainstreaming of flood issues in Malaysia and managed the SMART Tunnel Project (a unique and innovative flood mitigation project utilising a tunnel for both flood and traffic use) from conception to commissioning. The SMART Tunnel Project is one of only two engineering projects in Malaysia to be showcased in both the National Geographic and the Discovery channels, the other being the Petronas Twin Towers.

After his retirement from public service, Ir. Keizrul has remained active in professional activities. He is presently the Chairperson of Wetlands International Malaysia; a Senior Advisor of NARBO (Network of Asian River Basin Organisations); a member of HELP (High-level Experts and Leaders’ Panel on Water and Disasters) which reports to the UN Secretary General’s Special Envoy on Disaster Risk Reduction and Water; a member of the OECD Work Group on Water Governance Initiatives; and a member of the ESCAP Expert Advisory Group on Water Security/Water and Sanitation Related SDGs. He was the Lead Advisor for the ROK-ASEAN Cooperation Project on Water with the theme of Building Resilience for a Sustainable ASEAN (from Water-Related Disasters). He is the Chairman of the Disciplinary Committee of the Board of Engineers Malaysia and was actively involved in the 2015 Amendments to the Registration of Engineers Act.

Ir. Keizrul has presented numerous keynotes and working papers on irrigation, drainage, hydrology, water resources management, floods, river and coastal engineering, green technology, and on professional engineering matters in Conferences, Seminars, Workshops and Journals at national, regional and international levels; and is frequently invited to speak at international forums. He continues to accept invitations to share his knowledge and experience and was an Adjunct Professor with two local universities, where he delivered a series of lectures on water, environment, climate change and green technology, highlighting the importance of water for life; and how engineering knowledge is used to create a better quality of life for all.

Ir. Keizrul is humbled and grateful to be given the opportunity to deliver the Inaugural Chiam Teong Tee Memorial Lecture, more so as Ir. Chiam Teong Tee was his lecturer and the Dean of the Engineering Faculty, University of Malaya, during his university days.
## FEES (INCLUSIVE OF GST)

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### ***IMPORTANT NOTICE***

All registration fees must be FULLY paid before commencement of the Lecture. IEM Academy Sdn Bhd reserves the right to refuse entry for participant(s) who have not paid their registration fees to attend the Luncheon Lecture. THIS REQUIREMENT WILL BE STRICTLY ENFORCED.

### Chiam Teong Tee Memorial Fund

Donation – RM ____________

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Price is GST Inclusive

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- **FULL PAYMENT** must be settled before commencement of the course, otherwise participants will not be allowed to enter the hall. If a place is reserved and the intended participants fail to attend the course, the fee is to be settled in full. If the participant failed to attend the course, the fee paid is non-refundable. Registration fee includes lecture notes, refreshment and lunches.
- The Organising Committee reserves the right to cancel, alter, or change the program due to unforeseen circumstances. Every effort will be made to inform the registered participants of any changes. In view of the limited places available, intending participants are advised to send their registrations as early as possible so as to avoid disappointment.

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