

Tribute to Dato' Ir. Kam U-Tee The Man Who Contributed to the Success of Penang Water Authority



Dato' Ir. Dr. Lee
Yow Ching



In 1994, a Fellow of The Institution of Engineers, Malaysia (IEM) and a past Chairman of the Northern Branch, received the inaugural Manager of the Year Award from the Malaysian Water Association (MWA) "for his contributions to total management efficiencies in the waterworks industry particularly on improvements to commercial aspects such as computerised billing systems, revenue collection as well as innovations such as joint collection centres for multiple authority bills and management information systems".

Also known to Penangites as the "Waterman of Penang", Dato' Ir. Kam U-Tee also received the Distinguished Engineer Award from the Penang Branch of IEM in 2009.

Dato' Kam was born on 26 February, 1931 and lived through the Great Depression as well as the Second World War. He said images of poverty and the suffering of the poor in Indonesia, where his family was stranded, were deeply embedded in his memory and helped to shape his career. When he became a water engineer, his greatest concern was to ensure people from all walks of life had access to water at an affordable price, with the capacity for self-financed growth.

He graduated in Civil Engineering from the University of Melbourne, Australia, in 1956. After working for one year at the Country Road Board of Victoria as an assistant bridge design engineer, he returned to Penang to work as Assistant Resident Engineer for the construction of Air Itam Dam, the first earth dam in the country, for three years. He was then appointed Resident Engineer for the Air Itam Dam Treatment Plant. The plant, which produced 55 million litres (12 million gallons) of water a day, was designed by the then City Water Engineer, Ir. Goh Heng Chong, one of the pioneer engineers in the country. It had an innovative design and locally fabricated mechanisms such as filter control consoles and chemical dosing equipment.

Upon the completion of the treatment plant, Dato' Kam was appointed Assistant City Water Engineer, City Council of Georgetown, Penang. In 1968, he was appointed City Water Engineer in charge of water supply for the island (excluding Balik Pulau and Penang Hill). In 1973, when Penang Water Authority (Pihak Berkuasa Air Pulau Penang or PBA) was

formed to manage water supply for the entire state, he was appointed its Deputy Chairman and General Manager. He retired in 1990 at the age of 59.

As its chief executive officer Dato' Kam contributed immensely to the success of PBA, which is still recognised as one of the leading water supply organisations in Malaysia – supplying the cheapest water with the widest coverage, minimum Non-Revenue Water (NRW) and the highest revenue collection efficiency.

He instituted measures to upgrade the water supply system and enhance the overall performance of PBA. These included the development of the first successful computerised water billing and collection system in the country and the formation of a Joint Collection System involving local councils and the National Electricity Board.

To tackle the perennial problem of NRW, Dato' Kam considered its losses as comprising two components:

1. Physical losses – the transmission losses in the water distribution systems before reaching consumer premises.
2. Commercial losses – losses sustained by under-recording of meters, under-reading, under-billing and non-payment of bills.

He was of the opinion that an incremental approach should be taken to reduce NRW, with priority given to reducing commercial losses followed by measures to improve distribution systems.

The innovative design with appropriate technology of Ir. Goh Heng Chong, who laid the foundation to put PBA in good stead to be a successful water supply organisation, influenced Dato' Kam's approach to problems for the

rest of his career. Innovative methods were used in the implementation of water projects. Upgrading of water treatment plants to increase water treatment capacities was carried out by improving operational parameters, thus achieving savings in space and chemicals. A 45 million litres (10 million gallons) rectangular reinforced concrete service reservoir (8.5m x 79m x 9m or 280ft x 260ft x 30ft) was designed by considering the reservoir wall as a propped cantilever with pre-stressing tendons carried through the reservoir roof. Ferrocement (also called thin-shell concrete) instead of conventional reinforced concrete was used to construct a small water intake and a 900,000-litre (200,000-gallon) water tank at difficult site conditions. The tank has a shape of an inverted umbrella with a small base and increased diameter at the top on an inverted cone. In the design of a 1400mm-diameter mild steel pipeline, the stiffness of concrete lining of the pipe was taken into consideration in its resistance to deflection due to external loading.

Upon his retirement, Dato' Kam worked as an independent waterworks consultant, specialising in mainly in management reviews and the upgrading of water works in Malaysia and neighbouring countries.

He was appointed a short-term consultant by the World Bank, Asian Development Bank and USAID, to review waterworks in Pakistan, Sri Lanka, Vietnam, Laos and the Philippines.

He served as advisory consultant in several local companies in making studies for proposals for projects in China, Philippines, Indonesia, West Indies and Papua New Guinea.

As design consultant for turnkey projects, he completed the upgrading of 13 water treatment plants in Kedah, Perak and Penang.

Based on his vast practical experience, Dato' Kam developed a Patent: An Improved Hydraulic Flocculation System for Water Treatment Plant. His invention provides for an efficient toroidal recirculation environment for flocculation systems in water treatment plants, ensuring increased floc concentrations and contact times for mixing of particles. It also provides a flexible and controllable system which automatically adjusts to a large range of flow conditions, without the need for complex control mechanisms.



Three generations of Penang water engineers (from left): Dato' Ir. Kam U-Tee, Ir. Goh Heng Chong and Dato' Ir. Dr Lee Yow Ching. (Photograph taken in 2002, at Teluk Bahang Dam, Penang)



A 900,000-litre water tank

It is not possible to put into words all Dato' Kam's achievements in the water supply sector and how much his contributions have meant and continue to mean, to the people of Penang.

For his contributions, he received several national and Penang state awards including Darjah Yang Mulia Pangkuan Negeri DMPN (which carries the title of Dato') from Yang di-Pertua Negeri Pulau Pinang.

Dato' Kam passed away on 21 March 2014 at the age of 83 after a short illness. He had a long and successful career. Hard work, dedication and determination characterised this man of principles and integrity. The many PBA engineers and staff who he taught and trained will always be grateful to him.

This article is written to commemorate the third anniversary of the passing of Dato' Kam who will be remembered as an engineer who excelled in water supply engineering. ■

Author's Biodata

Dato' Ir. Dr Lee Yow Ching, is former Deputy Chairman and General Manager of Penang Water Authority. He graduated in Civil Engineering from the University of New South Wales, Australia and obtained a Doctorate in Business Administration from the University of South Australia. He was past Chairman of Northern Branch, IEM and received the Distinguished Engineer Award from the Penang Branch.

IEM DIARY OF EVENTS

Title: Technical Visit to "Lafarge Concrete Plant, Petaling Jaya"

20 May 2017

Organised by : Civil and Structural Engineering Technical Division
 Time : 9.30 a.m. - 1.00 p.m.
 CPD/PDP : 3

Title: 25th Annual General Meeting of Environmental Engineering Technical Division, IEM

20 May 2017

Organised by : Environmental Engineering Technical Division
 Time : 11.00 a.m. - 1.00 p.m.
 CPD/PDP : 2

Kindly note that the scheduled events below are subject to change. Please visit the IEM website at www.myiem.org.my for more information on the upcoming events.