



The Institution of Engineers, Malaysia

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TALK ON "INTRODUCTION TO ENERGY EFFICIENT CHILLED WATER PLANT IN BUILDING"

Organised by the Electrical Engineering Technical Division, IEM

BEM Approved CPD/PDP Hours: 2 Ref No: IEM16/HQ/047/T

Date : 9th April 2016
Time : 11.00am- 1pm
Venue : C&S & TUS Lecture Room, 2nd Floor, Wisma IEM, Petaling Jaya, Selangor
Speaker : Ong Wooi Pheng

SYNOPSIS:

Since the invention of air conditioning, it has resulted in tremendous changes in humans' way of life. Aside from elevating the comfort levels of living spaces and work environments, air conditioning also led to increases in work productivity and helped humans adapt to harsh environments, even surviving outer space.

However, all these benefits come with a price: the huge amounts of energy required to keep the air conditioning systems operational.

In tropical regions, the air conditioning system in a standard commercial building will consume up to 60% of the building's total electrical energy consumption. With more and more skyscrapers being built in the cities, chillers of increasing numbers and larger sizes will eventually be installed to keep these buildings habitable. In order for such a fast growing city to have continuous and sustainable development, air conditioning engineers face the challenge of designing highly energy efficient chilled water plants - capable of providing the most comfortable conditions while using the least amount of energy possible in a building.

The key to designing an energy efficient chilled water plant is not about reducing the electricity consumed by running lesser numbers of chillers or raising the space set temperature to a higher point, which will eventually compromise the comfort levels. Instead, careful considerations need to be invested during the design stage, to get things right the first time, and to have achieve a robust yet comprehensive control system to ensure more efficient management. The primary objective in maximizing the performance of a chilled water plant is to minimize wastage by operating the equipment in the most optimum way and following the load profile closely. Furthermore, clear understanding of the design concerns, limitations of the equipment, as well as the building's dynamic load is crucial to deliver an energy efficient chilled water plant.

Lastly, as the final puzzle piece, a carefully designed control system fitted with sufficient numbers of measuring instruments and high accuracy sensors will be required. With the technological advancements in sensors and ever improving computing powers, a chilled water plant can be operated in a more refined way, to achieve energy savings and at the same time without compromising the comfort levels.

"You can't manage what you can't control, and you can't control what you don't measure" – Tom DeMarco.

Course Objectives

- Review the fundamental concepts that have high impacts on system efficiency.
- Learn good design practice for chilled water plant.
- Learn the practical ways to construct an energy efficient chilled water plant.
- Understand the importance and requirements of the control system in achieving an energy efficient chilled water plant.

BIODATA OF SPEAKER:

Ong Wooi Pheng obtained his Bachelor of Engineering specializing in Mechanical Engineering from University of Malaya, Malaysia in year 1994. After his graduation, he joined O.Y.L Manufacturing Co. Sdn Bhd.(OYLM), a subsidiary of Hong Leong Group Malaysia whose main business activity was in air conditioners manufacturing and distribution. In year 2007, he joined Polymer Composite Asia Sdn Bhd, a subsidiary of Hexagon Holdings Bhd as Sales and Technical Service Manager. His main role was products sales and project management where his primary customer was Shell. At the time, he was handling the revitalization project of all the Shell petrol stations in Singapore and Malaysia (400 stations). Subsequently, he further ventured into HVAC business by joining a newly setup company, Tica-Frimec Sales & Service Sdn Bhd in year 2008 where he held the position of Technical General Manager. He joined Kaer in year 2010 as Manager of technology where he completed a few projects such as Marina Bay Sand, Universal Studio Singapore and One Marina Properties Services under this portfolio. In view of his outstanding performance and proven track record, he was promoted to become the General Manager of Kaer Sdn Bhd in April, 2012 and he is one of the registered GBI Facilitators, GreenRE Manager and Registered Electrical Energy Manager for Kaer Sdn Bhd.

Ir. Yau Chau Fong
Chairman, Electrical Engineering Technical Division, IEM

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- Preferential admission to talk shall be accorded to IEM members (pre-registration and online registration are NOT required). Telephone and/or fax reservation will NOT be entertained.
- Non members may also attend the talk but will need to pay a registration fee of RM50 and an administrative fee of RM15. GST is inclusive.
- For members of affiliated organisations, there will be no registration fee payable. However, they are requested to produce their membership card as proof of membership. For the list of affiliated organisations, please refer to IEM website at www.myiem.org.my under International/MoU.
- Limited seats are available on a "first come first served" basis (maximum 100 participants).
- IEM members are required to produce membership cards for confirmation of attendance (CPD purpose).
- Latecomers will not be allowed to enter if the lecture hall is full nor be entitled to CPD.
- ***IEM members who fail to produce their membership cards will be charged a fee of RM25.00. GST is inclusive.***

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- Kindly be informed that an administrative fee of RM15 is payable for talks organized by IEM. GST is inclusive.
- The fee would be used to cover overhead costs, building maintenance expenses as well as contribute to Wisma IEM Building Fund.
- All contributions will be deeply appreciated by IEM.
- Student Members are however exempted.

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