

Career in Engineering

ENGINEERING EDUCATION TECHNICAL DIVISION

reported by



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The Engineering Education Technical Division co-organised a talk on “Career in Engineering” with Engineers Australia Malaysia Chapter and the Institution of Mechanical Engineers Malaysia Branch, on 1 August, 2018, at Wisma IEM.

The talk was delivered by Ir. Dr Ling Chen Hoe, Senior General Manager and Director of Meiden Malaysia, with 24 participants in the audience. He commenced by showing the profiles of several personalities in the entertainment and corporate world who also have engineering degrees. To illustrate the marvels of engineering, he then showed pictures of historical man-made structures and buildings which have been classified as UNESCO World Heritage sites.

In an article titled “Why Engineers Make Great Leaders” (November 2014), The Harvard Business Review (HBR) stated that 24 of its best performing CEOs had an engineering degree. It further mentioned that an engineering education gives a person a practical and pragmatic orientation that breeds an ethos of building things that work, regardless of whether it is a machine, structure or organisation. It also teaches one to do things economically, efficiently and eloquently, with reliable outcomes, and with a margin of safety. These principles are important when one is helping an organisation.

In water and wastewater treatment, engineering plays a pivotal role in ensuring our health. Through various processes, engineers are able to deliver clean and potable

water to the public, eliminating many waterborne diseases which have plagued civilisations in the past. Due to the scarcity of fresh water in some parts of the world, engineers have even designed seawater desalination plants to convert saline water into drinking water.

The same goes for treatment of sewage. Wastewater and sewage treatment plants which employ myriad engineering processes and involve various engineering disciplines, have helped prevent the outbreak of diseases in both urban and rural areas.

The Pahang-Selangor Water Transfer Project is a good example of how engineering can resolve the issue of water scarcity in Selangor. The many engineering disciplines involved in the project show the versatility of an engineering career. For instance, a tunnelling engineer may find himself/herself involved in the water supply, irrigation and

drainage systems, a highway or a traffic dispersion project.

Electrical energy is essential to the development of a country's economy. Any power outage would result in massive economic losses in terms of output for factories and the disruption in the quality of human life.

Due to the adverse effects on the climate from conventional power sources such as coal and the depletion of fossil fuel, engineers are now looking at other innovative and sustainable energy sources. Besides hydro, solar and wind, engineers are looking at biofuel obtained from recycling organic waste, biogas-powered cogeneration process and other sources of energy. It was mentioned that a giant battery was recently used to deliver electricity in South Australia. This goes to show that innovation is always at the forefront of an engineering career.



Ir. Dr. Ling Chen Hoe (right) receiving a memento from the session chairman

Other examples where engineers have put their engineering skills to use are the design of innovative survival equipment that arose from the aftermath of the Japanese earthquake and tsunami where thousands of people died in the massive flooding and from the impact of debris that came with it.

Ir. Dr Ling also briefly mentioned some iconic buildings, infrastructure and transportation projects which employed both innovative and cutting-edge technologies during the construction. These assets are currently reaping vast positive economic and social impacts for the respective stakeholders.

Engineers must always evolve, innovate and learn new skills in today's competitive world. Analogies used included the evolution of mobile phones of yesteryear to today's smartphones and the Internet of Things (IoT). Organisations which do not adapt to new technologies will not survive. Similarly, engineers who do not

subscribe to new skills may soon find themselves replaced by technology and Artificial Intelligence (AI).

Engineering is susceptible to the economic cycles of a country (and the world). As such, during a downturn, engineers may soon find themselves replaced by AI. However, those who equip themselves with leadership qualities, the ability to work in a team and learn irreplaceable skills such as the ability to solve problems involving both critical and creative thinking as well as skills required to "do the job", will always be in demand.

In conclusion, Ir. Dr Ling reiterated that an engineering career is both challenging and satisfying. However, to remain relevant, engineers must continuously learn to upgrade their technical, human and conceptual skills, skills which cannot be replaced by AI or technology. They must be adaptable to change and must constantly embrace disruptive innovations. ■