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Celebrating 50 Years of Engineering Excellence

Media Release

The Institution of Engineers, Singapore (IES) Launches New Green Home for Engineers

**Built by engineers, for engineers as a focal point for Singapore's future
transformation in IES's 50th anniversary year**

The Institution of Engineers, Singapore (IES) held the official opening ceremony of the IES Green Building @ Bukit Tinggi today, in conjunction with its annual IES Spring Festival. Mr. Teo Chee Hean, Deputy Prime Minister & Coordinating Minister for National Security graced the event as the Guest-of-Honour. Launched in IES's 50th anniversary year, the state-of-the-art facility is designed to address the evolving and expanding professional and social needs of engineers in Singapore so that they can bring Singapore into a future of transformation through engineering.

Established in 1966 with only 166 members, IES began its operations at the office of the Honorary Secretary then, before moving its secretariat to a small rented office of just 9.5 square metres in size at the Singapore Professional Centre at Outram Park. IES then purchased a 221-square metre office at International Plaza in 1978, before acquiring 6,800 square metres of land at Bukit Tinggi in 1983 for the first IES building which was opened in phases in 1987 and 1997.

Today, with a membership of more than 5,100, IES has added a second building to its Bukit Tinggi premises with the aim of providing expanded and enhanced facilities its members and to forge greater collaborations amongst the engineering community. The three-storey building comprises the new IES Secretariat office, a members' area, training and meeting rooms, an open terrace and a basement carpark.

Construction of the new building officially commenced on 12 December 2012 after the groundbreaking ceremony officiated by DPM Teo. With nearly 700 individuals and corporations contributing in kind or in cash towards the Building Development Fund, the completion of the building represents the passion and unity of the engineering community. Apart from a seed funding of \$1.22 million by the late Er. Charles Rudd and Mrs Eleanor Phyllis Rudd, other major donors include Mr. Brian Chang, Er. Lim Soon

Hock, Keppel Corporation, SembCorp Industries, Expand Construction Pte Ltd and Far East Organisation.

Today, the IES Green Building @ Bukit Tinggi stands tall as a new icon of engineering excellence and ingenuity, having incorporated the latest sustainable technologies to achieve the Building Construction Authority (BCA) Platinum rating certification for Non-Residential Buildings Green Mark version 4.0 – the highest standards in environmental impact and performance. IES plans to conduct school educational tours at the building as a live showcase of unique green engineering features¹, in its effort to inspire the younger generation to take up engineering as a career.

“The opening of the IES Green Building @ Bukit Tinggi is a celebration of five decades of being the heart and voice of engineers for IES, and marks the beginning of 50 more years of achievements for our institution. It represents IES’s determination to continually push the boundaries to advance the profession of engineering for the benefit of the engineering fraternity and the people of Singapore,” said Er. Chong Kee Sen, President of IES.

Engineering Feats @ IES-SG50 – Public Voting

At the event, IES also announced that more than a hundred engineering projects have been shortlisted to enter into the final Public Voting Phase for Engineering Feats @ IES-SG50. Launched by IES in 2015 to raise the level of appreciation and interest in engineering amongst the public, Engineering Feats @ IES-SG50 is a national competition seeking to recognise the top 50 engineering achievements in Singapore.

The Public Voting Phase will commence online on www.ies.org.sg/sg50/ on 1st March 2016 and close on 30th May 2016. The final 50 Engineering Feats deemed by the public to have made the greatest impact to Singapore’s growth over the past 50 years will be recognised at the IES Golden Jubilee Dinner to be graced by Prime Minister Lee Hsien Loong in July 2016.

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About The Institution of Engineers, Singapore (IES)

The Institution of Engineers, Singapore (IES) was formally established in July 1966 as the national society of engineers in Singapore. IES is the premier engineering institution in Singapore and is called upon by the Government to provide feedback on professional engineering matters.

¹ Annex 1 – IES Green Building @ Bukit Tinggi Green Features and Notable Green Achievements

IES is well represented among the faculty members of the major engineering institutions of higher learning in Singapore. Through close collaboration with the local universities and polytechnics, IES organises courses, seminars and talks for engineers and IES members to advance the continuous development of engineers.

The Institution maintains close links with professional organisations of engineers regionally and throughout the world. These include organisations in Australia, China, Japan, United Kingdom and the United States. The Institution also represents Singapore in the ASEAN Federation of Engineering Organizations (AFEO) and the Federation of Engineering Institutions of Asia and the Pacific (FEIAP) in promoting goodwill and fellowship among all engineers in ASEAN and the Asia-Pacific region.

Through its Engineering Accreditation Board (EAB), IES obtained full signatory status in the Washington Accord (WA) in June 2006. The entry grants IES the authority to represent Singapore, the first country within the ASEAN region which has obtained full signatory status in the WA, to vet education systems under the WA mutual recognition framework.

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Annex 1 – IES Green Building @ Bukit Tinggi Green Features and Notable Green Achievements

- **Solar Farm for Renewable Energy**

Solar panel arrays of 21kWp have been extensively implemented on the entire roof to recover up to 25% of total building consumption. Besides reducing the operational carbon footprint of the new building, the panels also double up as shade to enable building occupants to work in a cooling environment.

- **Bio-retention Basin for Storm Water Management**

In-line with the Active, Beautiful, Clean (ABC) Waters Programme, the new building has incorporated an innovative above-ground compact rain garden design. This water efficient landscaping enables the collection and treating of rain water through bio-retention using plants available locally. Constructed with recycled materials, the filter matrix used is specially developed by the Public Utilities Board (PUB) and the National University of Singapore (NUS).

- **Advanced Energy Management System**

This intelligent solution enables IES to centrally monitor, measure and manage its energy and water resources on a single platform from any web-enabled device. By giving a complete, real-time view of the building's utility, operational and infrastructure performance from a single centralised dashboard, it empowers IES employees, visitors and other stakeholders to collaboratively identify energy saving opportunities, adopt energy-smart behaviour and contribute towards shared sustainability goals.

- **Design Features**

The building has been designed in the shape of a square, with the main entrance facing north and the office areas facing south. Along the west is a naturally ventilated washroom block, that is non-air-conditioned and acts as a buffer to minimise direct heat coming from the west into the building. The two-layer facade features perforated external fins in front of the glass to provide visual connectivity but yet provide the necessary shading to achieve the overall Envelope Thermal Transfer Value.

- **Sustainable Construction**

IES has used green cement with approved industrial by-products to construct the building. Structural engineers have also designed ways to minimise Concrete Usage Index (CUI).

- **Sustainable Products**

IES has also used SGLS-certified environmental friendly products with minimum 30% recycled content. Other environmental friendly items used include

laminates, paint, adhesives, waterproofing, green concrete panels and plasterboards.

- **Energy-Efficient Elevators and Escalators**

The lifts in the building bear energy efficient features such as the AC Variable Voltage and Variable Frequency (VVVF) motor drive and sleep mode features.

- **Water Efficient Fittings**

Water fittings with the Excellent Mark from the Water Efficiency Labelling and Standards Scheme (WELS) have been employed to optimise water use.

- **Maximised Daylighting**

All car park and office spaces are designed to allow for maximum day lighting penetration.

- **Intelligent Lighting**

Where artificial lighting is needed, energy efficient light fittings such as T5 lamps, high frequency electronic ballast and compact florescent lamps have been used to minimise energy consumption. The work stations in the office space have also been provided with task lighting of lower lighting power density.

- **Targeted Ventilation**

All areas in the building have been designed to be naturally ventilated as much as possible. At small areas where comfort conditions could not be achieved, jet fans have been installed. The main reception, offices and meeting rooms are air-conditioned with high efficiency Variable Refrigerant Volume (VRV) air-conditioners.

Notable Green Achievements

- Low Energy Efficiency Index of 81.50 kWh/m²/yr
- Exemplary VRV air-conditioning system with efficiency of 0.75 kw/RT
- Savings of 49.57% on electricity as compared to a minimum compliant building
- Savings of 61% on potable water using on WELS excellent rating fittings
- Efficiency lighting design achieving 40% energy savings against minimum compliance to local code
- Solar Farm of 21 kWp recovering 25% of total building energy consumption