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Media Release

The Institution of Engineers, Singapore (IES) Launches “50 Years of Engineering in Singapore” Book to Celebrate Five Decades of Engineering Excellence

**Minister Lawrence Wong presents the prestigious IES Lifetime Engineering
Achievement Award 2017 to Er. Liew Mun Leong**

The Institution of Engineers, Singapore (IES) celebrated outstanding engineering achievements underpinning Singapore’s growth over the past year and the past five decades at its 51st anniversary. Mr. Lawrence Wong, Minister for National Development and Second Minister for Finance graced the event at the Resorts World Sentosa Convention Centre as the guest-of-honour, in the company of more than 700 IES members, engineers and industry guests.

Launch of “50 Years of Engineering in Singapore”

“50 Years of Engineering in Singapore” is a pulsating chronicle of extraordinary engineering feats and innovations across multiple disciplines that defined the nation’s economic, infrastructural and societal transformation over five decades. It also brings to the forefront, little-told stories of exceptional engineers whose brilliance and determination helped Singapore overcome its intrinsic challenges to achieve world-class wealth and liveability.

Edited by Professor Cham Tao Soon, the 204–page compendium is a joint effort by IES and World Scientific Publishing. It covers engineering feats in land transportation, water, energy, manufacturing, buildings & infrastructure, aerospace, infocomm technology, offshore & marine and health & safety; and concludes with an outlook for future challenges for engineers.

The “50 Years of Engineering in Singapore” book is available for purchase at all major bookstores and online at <http://www.worldscientific.com/worldscibooks/10.1142/9366> from 24 October 2017, Tuesday onwards at SGD 24 (soft cover) and SGD 58 (hard cover).

“IES hopes that through this book, our younger generation can better appreciate the fascinating journeys of our pioneer engineers and be inspired to blaze new trails of excellence to shape Singapore’s future,” said Er. Edwin Khew, President, IES.

Lifetime Engineering Achievement Award 2017 Winner – Er. Liew Mun Leong

Er. Liew Mun Leong became the fifth winner of the IES Lifetime Engineering Achievement Award, the topmost honours accorded to engineers in Singapore. This is in recognition of his distinctive engineering leadership and his lifetime accomplishments that have made profound impact on the engineering industry and community; and his contributions that brought international honours to Singapore.

A civil engineer by training, Er. Liew has devoted his career to the national and infrastructural development of Singapore. From an airport engineer participating in Singapore’s Changi Airport construction in 1975, Er. Liew has spent 22 years in the public service developing the airport, military airports and other establishments. He has also spent another 24 years in the private sector leading 10 public listed companies in world–wide real estate investment and development.

Er. Liew has also been an active contributor to the nurturing of engineering talent, through roles such as the Provost’s Chair Professor (Practice) in the National University of Singapore (NUS) Faculty of Engineering.

“I am honoured to receive this prestigious Lifetime Engineering Achievement Award from IES. This award signifies the successful career an engineer could achieve and sustain when he or she is truly committed to the engineering profession. I am one of those lucky ones who chose engineering as my training and committed myself to the profession,” said Er. Liew.

“Er. Liew Mun Leong is an exemplary engineer whose vision, passion and ingenuity have helped Singapore earned global reputation in aviation, infrastructure, real estate and other industries. His wide-ranging achievements illustrate that engineers, equipped with creative problem-solving skills, can enjoy successful careers in both engineering and business fields. IES hopes to raise the awareness of the multi-faceted opportunities and rewards offered by an engineering career by presenting Er. Liew with the IES Lifetime Engineering Achievement Award 2017,” said Er. Khew.

At the dinner, IES also conferred two eminent engineers, Er. Ho Siong Hin and Professor Chou Siaw Kiang, with the IES Honorary Fellow title. Recognising individuals who have made outstanding contributions to the engineering profession and to Singapore, the IES Honorary Fellowship comprises Deputy Prime Minister Teo Chee Hean; Ms Ho Ching, Executive Director & CEO of Temasek Holdings; and other prominent engineers by training.

Other awards presented at the dinner are the IES/IEEE Joint Medal of Excellence Award 2017 that went to Prof Low Teck Seng, for making contributions in engineering with far-reaching impacts on society; and the 2017 IES-Yayasan MENDAKI Scholarships that went to two students from NUS and Temasek Polytechnic for achieving excellent academic results and to support them in furthering their engineering studies or pursuing an engineering career.

Signing of MoU in Precision Engineering

The dinner also saw IES signing a Memorandum of Understanding (MoU) with the Singapore Precision Engineering and Technology Association (SPETA) to drive greater innovation, transformation and productivity in the precision engineering sector. The MoU will focus on deepening engineering and technical skillsets in the precision engineering sector to transform aerospace, medtech, electronics and other sectors that are pivotal to Singapore’s manufacturing sector growth, to ensure that high-tech manufacturing continues to contribute to 20% of Singapore’s GDP.

New Chartered Engineer Sectors in Infrastructure Development and Port & Harbour Management

Expanding its efforts to uplift recognition of the professional experience, expertise and practising competence of engineers, IES also announced the addition of the Infrastructure Development and Port & Harbour Management sectors to its Chartered

Engineer (Singapore) Programme. This professional accreditation is in line with IES' efforts, in partnership with JTC and PSA, to give engineers a quality mark to differentiate their professional standing in these two branches of engineering.

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Notes to media:

1. Annexes

- Annex 1 – Citation: Er. Liew Mun Leong, IES Lifetime Engineering Achievement Award 2017 Recipient
- Annex 2 – Citation: Er. Ho Siong Hin, IES Honorary Fellow 2017
- Annex 3 – Citation: Prof Chou Siaw Kiang, IES Honorary Fellow 2017
- Annex 4 – Citation: Prof Low Teck Seng, IES/IEEE Joint Medal of Excellence Award 2017 Recipient
- Annex 5 – Biography of Er. Edwin Khew, IES President

2. Chinese Glossary

Terms in English	Terms in Chinese
The Institution of Engineers, Singapore (IES)	新加坡工程师学会
The Institute of Electrical and Electronics Engineers (IEEE)	电气电子工程师学会
Er. Edwin Khew, IES President	邱德福, 新加坡工程师学会会长
IES Lifetime Engineering Achievement Award	新加坡工程师学会 终身工程成就奖
IES Honorary Fellow	新加坡工程师学会 荣誉院士
Er. Liew Mun Leong	廖文良
Er. Ho Siong Hin	何祥兴
Prof Chou Siaw Kiang	邹绍强博士
Prof Low Teck Seng	刘德成博士

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.

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

Citation for Er. Liew Mun Leong IES Lifetime Engineering Achievement Award 2017 Recipient

Er. Liew Mun Leong has spent 22 years in the public service developing Singapore's Changi Airport, military airports and other establishments. He had been involved in the construction of Changi Airport since its beginning in 1975. He also led Singapore Institute of Standards and Industrial Research (SISIR), a statutory board responsible for Singapore's national standards and industrial research and development to support the manufacturing industry in Singapore. Thereafter, he headed a public listed engineering and construction company in Singapore.

He was the Registrar of the Professional Engineers Board, granting engineers' licenses to practise in Singapore and regulating engineering practices in Singapore. He was appointed as the President of International Organisation for Standardisation (ISO) in the late 1990s.

After his 22 years in the public service, Er. Liew has another 24 years of experience in the private sector, during which he led 10 public listed companies investing and developing real estates in Asia, Middle East, UK and Europe. In 2000, he became the founding Group President & CEO of CapitaLand Limited, a public listed real estate company, which under his watch till 2012, has become one of the largest real estate groups in Asia.

He currently chairs the Changi Airport Group responsible for the operation and development of Changi Airport and Surbana Jurong Group, a large consultancy group in urban and infrastructure development. Er. Liew serves on the boards of Singapore Exchange, Singapore China Foundation and the Chinese Development Assistance Council. He is a Senior International Business Advisor of Temasek.

He also chairs the Management Advisory Board of the National University of Singapore (NUS) Business School and Temasek Foundation Nurtures CLG Ltd.

Er. Liew is the Provost's Chair Professor (Practice) (pro bono) in NUS Business School, Faculty of Engineering and the Lee Kuan Yew School of Public Policy. He is also the Rector of Ridge View Residential College at NUS.

In recognition of his outstanding contributions, Er. Liew has been conferred numerous awards.

In 2011, Er. Liew was awarded the Meritorious Service Medal by the President of Singapore for his exceptional contributions to Singapore.

In 2016, Er. Liew was conferred France's National Order of the Legion of Honour (Ordre national de la Légion d'honneur), with the rank of Knight.

In 1991, Er. Liew was accorded the NUS Distinguished Engineering Alumnus Award.

In 2006, Er. Liew was named the Outstanding CEO of the Year in the Singapore Business Awards.

In 2007, he was conferred the CEO of the Year award in The Business Times' Singapore Corporate Awards.

In 2008, Er. Liew was named Asia's Best Executive of 2008 (Singapore) by Asiamoney and Best CEO in Asia (Property) by Institutional Investor.

In May 2011, he was named Best CEO in Singapore by FinanceAsia.

In 2012, he was awarded the Outstanding PR Champion by The Institute of Public Relations of Singapore.

In 2016, he was awarded the Distinguished Professional Engineer Award by the Professional Engineers Board.

Er. Liew graduated from the University of Singapore with a degree in Civil Engineering and is a registered professional civil engineer. He was the founder member of The Society of Project Managers and was conferred the Honorary Fellowship in 2007. Er. Liew is a Fellow in in the Singapore Academy of Engineering.

Er. Liew has published four books, entitled Building People: Sunday Emails from a CEO, Volumes 1–3 and Building People: Sunday Emails From a Chairman, Volume 4.

Er. Liew joined The Institution of Engineers, Singapore (IES) as a Member in 1977 and became a Fellow in 1986.

Er. Liew has spent his career devoting to the national and infrastructural development of Singapore. The IES Council hereby awards Er. Liew Mun Leong with the Lifetime Engineering Achievement Award 2017 in recognition of his outstanding engineering leadership; his lifetime accomplishments that made profound impact on the engineering industry and community; and his contributions that brought international honours to Singapore.

Annex 2

Citation for Er. Ho Siong Hin IES Honorary Fellow 2017 Conferment

Er. Ho Siong Hin graduated with a Bachelor of Engineering (Mechanical) Honours degree from the University of Auckland, New Zealand. He joined The Institution of Engineers, Singapore (IES) in 1985 and has been very active since then. He was very involved in the Graduates and Students Committee and then in the Joint Activities Committee. Er. Ho joined the IES Council in 2007 and was appointed to be the Chairman of Membership and Development Services Group. He became Vice President in 2008 and was elected as the IES Deputy President in 2009. Er. Ho became IES President from 2010 to 2012. He became Chairman of Strategic Planning Committee since stepping down as IES President. He has also chaired the Awards Committee since 2014.

Er. Ho is currently Singapore's Commissioner for Workplace Safety and Health (WSH). He holds a concurrent position as Divisional Director of the Ministry of Manpower's Occupational Safety and Health (OSH) Division. Er. Ho was instrumental in the statutory formation of the industry-led WSH Council where he serves as a Member. He also guided the establishment of the WSH Institute with a mission to enhance WSH through Knowledge, Innovation and Solutions. All these efforts had contributed to a significant reduction in Singapore's workplace fatality rate from 4.9 per 100,000 employed persons in 2004 to 1.9 in 2016.

Er. Ho works closely with the International Labour Organisation, International Association of Labour Inspectors (IALI) and World Health Organisation to improve OSH standards in the ASEAN region. Er. Ho is currently the Secretary-General of IALI and an Honorary Vice-President of the Institution of Occupational Safety and Health, UK.

Beyond his MOM portfolio, Er. Ho is the President of the Professional Engineers Board. He is the Chairman of the Advisory Committee to the Chemical Engineering Department of Ngee Ann Polytechnic. Er. Ho is also a member of the Singapore Accreditation Council by SPRING and chairs the Council Committee on Inspection Bodies.

Er. Ho was awarded the National Day Public Administration (Gold) Medal in 2012, in recognition of his contribution to the public service.

Er. Ho has made significant contributions in bolstering future growth of IES and in raising the profile of engineers in Singapore. He presented the future development of IES to Past Presidents and Members in 2011 and obtained the approval to build a new annex building called the IES Green Building @ Bukit Tinggi that opened in February 2016. He chaired the committee of the Engineering Feats Award, a major programme of IES-SG50 celebrations, to recognise remarkable engineering achievements in Singapore over the 50 years. The awards were presented by Prime Minister Lee Hsien Loong at the IES

Golden Jubilee Gala Dinner in 2016. The IES Council is pleased to confer Er. Ho Siong Hin the IES Honorary Fellowship.

Annex 3

Citation for Professor Chou Siaw Kiang IES Honorary Fellow 2017 Recipient Conferment

Prof. S.K. Chou obtained a B.Eng. in Mechanical Engineering from the University of Singapore and a D.E.A. and Dr-Ing. from Ecole Nationale Superieure d'Arts et Metiers, Paris, under a French Government Scholarship. He joined the Department of Mechanical Engineering, National University of Singapore (NUS), as a lecturer in 1980 and is presently Professor at the department.

From 1990 to 1992, he was seconded to the Science Council of Singapore and the National Science and Technology Board as Executive Director. In 1992, he helped establish the NUS Industry and Technology Relations Office (INTRO), where he was Director from 1992 to 2000. In 1995, he helped found the NUS Technology Holdings Pte Ltd (NUSH), a wholly-owned NUS company responsible for seeding new technology start-ups from university research and inventions. He held the position of Managing Director of NUSH from 1995 to 2001. He was Head of the Department of Mechanical Engineering, NUS, from 1998 to 2003 and Vice-Dean (External and Industry Relations) of the Faculty of Engineering from 2003 to 2008. Professor Chou was the founding executive director of the Energy Studies Institute, established in 2007 at NUS, where he held a joint appointment till June 2017.

Prof. Chou is a Fellow and Past President of The Institution of Engineers, Singapore (IES). He joined the IES Council in 2007 and was appointed as Chairman of the Qualification and Membership Committee. He became the Vice President of IES in 2008 and chaired the IES Academy. During his term, IES Academy continued to raise the quality and number of professional development courses. Prof. Chou was elected as Deputy President of IES in 2011 and became IES President from 2012 to 2014. During his term as IES President, IES launched the IES Chartered Engineer Programme, which certifies qualified engineers from the non-construction industry. He also initiated the IES College of Fellows (CoF) in 2011 and after retiring as IES President, became the Dean of CoF from 2014 to 2016. He is the Chairman of World Engineers Summit – CUE Joint Conference 2017.

S.K. Chou is also a Fellow of the American Society of Heating, Refrigerating and Air-Conditioning Engineers. He is a Fellow of the Singapore Academy of Engineering, the ASEAN Academy of Engineering and Technology, the Energy Institute, UK, and the ASEAN

Federation of Engineering Organisations. He chairs the Advisory Committee of the School of Mechanical and Aeronautical Engineering of Singapore Polytechnic and is Chairman of the Technical Evaluation Panel on the Grant for Energy Efficiency Technology (GREET) of the National Environment Agency, Singapore. Up till March 2016, he was Chairman of the Advisory Board of the ASEAN Plan of Action on Science and Technology and was a member of the International Advisory Board of the APEC Center for Technology Foresighting. He is the national focal point on the Board of Advisers, ASEAN Committee on Science and Technology (COST).

He is credited with the formulation of the Envelope Thermal Transfer Value (ETTV) and the Residential Envelope Transmittance Value (RETV) energy standards used in the Singapore Green Mark Incentive Scheme. He is presently an Editor of the Elsevier journal, Applied Energy and serves on the editorial boards of a number of other energy-related journals.

Prof Chou's contributions to advancing the interests of IES and the profession of engineering are significant. Amongst his many achievements, he has launched the IES Chartered Engineer (Singapore) Registry, raised the standard of courses run by IES Academy and also initiated the IES CoF. The IES Council is pleased to confer Prof Chou Siaw Kiang the IES Honorary Fellowship.

Annex 4

Citation for Professor Low Teck Seng IES/IEEE Joint Medal of Excellence Award 2017 Recipient

Professor Low Teck Seng has worn many hats throughout his career in science and engineering. Starting out as an academic in the Department of Electrical Engineering in the National University of Singapore (NUS) in 1983, he went on to assume leadership positions in our educational and research institutes, and government agencies. In his various roles, Professor Low has made significant contributions to the education and research landscape in Singapore, and the engineering profession.

Professor Low is one of our pioneer research leaders. In 1992, Professor Low founded the Magnetics Technology Centre. Renamed the Data Storage Institute when its charter expanded, it grew to become an internationally renowned research institute in data storage technologies. The institute has helped to attract and anchor leading multinational companies in data storage manufacturing in Singapore.

Professor Low then went on to assume key leadership positions to drive Singapore's transformation into a knowledge-based economy. He was the dean of engineering at the

NUS, the founding principal of Republic Polytechnic, and the Managing Director of A*STAR.

Professor Low was appointed CEO of the National Research Foundation in July 2012. In partnership with its key stakeholders, NRF has built up a strong R&D ecosystem in Singapore. He leads the NRF as it strives to support excellent science, relevant to Singapore for our economic growth and for solutions to our national challenges.

Professor Low was awarded the National Science and Technology Medal in 2004. He was awarded the Public Administration Medal (Gold) in 2007. Professor Low is a Fellow of the Institution of Engineers Singapore (IES), a Fellow of the Institute of Electrical and Electronics Engineering (IEEE) and an International Fellow of the Royal Academy of Engineering, UK.

In recognition of his outstanding contributions to Singapore's R&D landscape, Professor Low Teck Seng is hereby conferred the IES/IEEE Joint Medal of Excellence 2017.

Annex 5

Biography of Er. Edwin Khew

The Institution of Engineers, Singapore (IES) President

Engineer (Er.) Edwin Khew Teck Fook, PBM, PEng, FIES, CEng, FIChemE, is the President of IES (Term 2016–2018). Er. Khew has been an IES member since 2006 and has served as the Vice President in the IES Council from 2008 to 2015 heading several groups and chairing a technical committee. He is also a management committee member of the prestigious IES College of Fellows.

Er. Khew is a registered Professional Engineer in Singapore, a Fellow of the IChemE (UK), a Chartered Chemical Engineer of the IChemE (UK) and a Chartered PEng in the Institute of Engineers of Australia.

Er. Khew has been very active in promoting Singapore as a Cleantech Centre. He played a key role in the establishment of the first Cleantech Incubator/Accelerator for Singapore start-ups and foreign Cleantech companies in 2013, in collaboration with the Singapore Economic Development Board, JTC and international Cleantech organisations.

A former Nominated Member of Parliament and former President of the Singapore Manufacturers' Federation, Er. Khew is currently the Chairman of the Sustainable Energy Association of Singapore (SEAS) and the Co-Chairman of the Energy for All Partnership (E4All), a United Nations' and Asian Development Bank's initiative.

Er. Khew has an Executive MBA from NUS and he is an advisor to NUS' Chemical & Biomolecular Department and Ngee Ann Polytechnic's Centre of Innovation (Environment & Water Technology) and serves on the Supervisory Board of the Solar Energy Research Institute, Singapore (SERIS)-NUS, and advisor to the Energy Research Institute at NTU (ERI@N).

Current Appointments – Professional Service

1. President, The Institution of Engineers, Singapore (IES)
2. Chairman, Sustainable Energy Association of Singapore (SEAS)
3. Secretary General, Asian PV Industry Association (APVIA)
4. Chief Representative of APVIA serving on the Global Solar Energy Council (GSEC)
5. Co-Chairman, Energy for All Partnership (E4All)-Asian Development Bank (ADB)
6. Chairman, Enterprise Development Working Group (Subcomm of E4All)