

The Magazine Of
The Institution Of Engineers, Singapore
September 2015 MCI (P) 074/03/2015



Celebrating 50 Years of
Engineering Excellence



www.ies.org.sg

THE SINGAPORE ENGINEER

COVER STORY:

MECHANICAL & ELECTRICAL ENGINEERING

The German Centre Singapore



FEATURES:

Sustainability • Biomedical Engineering • Systems Engineering



WES 2015 Gala Dinner and Awards Night

IES presented the IES Lifetime Engineering Achievement Award 2015 and the IES Prestigious Engineering Achievement Awards 2015 at the World Engineers Summit (WES) on Climate Change 2015 Gala Dinner and Awards Night held on 23 July 2015. Mr Chan Chun Sing, Minister, Prime Minister's Office and Secretary-General, National Trades Union Congress (NTUC) graced the event as the Guest-of-Honour.

International and local engineers and climate change experts and professionals gathered at the dinner, after two days of discussions on 'Sustainable Urban Development for Global Climate Resilience' at the second WES hosted by IES.

IES LIFETIME ENGINEERING ACHIEVEMENT AWARD

IES awarded Er. Tan Gee Paw with the third IES Lifetime Engineering Achievement Award in recognition of his significant contributions to Singapore in ensuring the sustainability of its water supply. The award is conferred upon individuals whose lifetime accomplishments and achievements have made profound impact on the engineering industry and community and have brought national or international honours to Singapore.

"Er. Tan Gee Paw has dedicated a great part of his life to ensure that our island, which lacks one of the most essential natural resources, is assured of a sustainable water supply. For his exceptional foresight, dedication and accomplishments, he is a fully worthy recipient of the IES Lifetime Engineering Achievement Award. Er. Tan has proven himself to be a great role model to raise the profile of engineers amongst the public and interest the young to take up engineering as a career", said Er. Chong Kee Sen, President, IES.

"One of the best traditions of the engineering profession is the quiet dedication of engineers to nation building and service to society with little thought of recognition. My colleagues who have worked with me for the past five decades uphold this fine tradition. The IES Lifetime Engineering Achievement Award is therefore an award for all my colleagues in the engineering profession who have given many decades of their lives in service to society and the nation", said Er. Tan.

IES PRESTIGIOUS ENGINEERING ACHIEVEMENT AWARDS 2015

To recognise outstanding engineering projects which have made a significant contribution to the engineering progress and quality of life in Singapore, IES awarded 13 engineering teams with the IES Prestigious Engineering Achievement Awards 2015. These winners have been selected from 25 entries based on their contribution to the well-being of people and communities; resourcefulness in the planning and solving of design problems; pioneering use of materials and methods; innovations in planning, design and construction as well as unique aspects and aesthetic values.



The Guest-of-Honour, Mr Chan Chun Sing (on right), presents the IES Lifetime Engineering Achievement Award to Er. Tan Gee Paw. Looking on is Er. Chong Kee Sen, President, IES.



International and local engineers and climate change experts and professionals gathered at the WES 2015 Gala Dinner and Awards Night.

"The winners of the IES Prestigious Engineering Achievement Awards 2015 demonstrate the diversity of engineering, from innovating materials that significantly reduce the requirements for air-conditioning to enabling cost-effective eye-screening for glaucoma detection. Regardless of their engineering discipline, each winning team exhibits distinctive value in enhancing the quality of our lives and our environment. We congratulate every one of them and hope that the awards will motivate them to continue to scale even greater heights", said Er. Ho Siong Hin, Chairman, Awards Committee, IES.

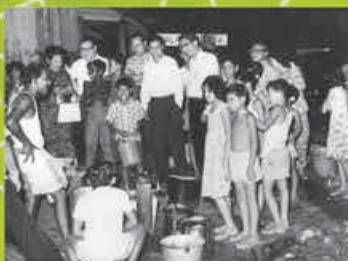
With five winning entries, A*STAR (Agency for Science, Technology and Research) emerged as the biggest winner of the night for the third consecutive year. Winning projects submitted by A*STAR include 'The Future of Audit: Predictive Analytics on Irregularities and Risks in Bank Branches' and 'Speak to Me in My Language' translation technology.

"A*STAR is delighted to be recognised at the IES Prestigious Engineering Achievement Awards. These awards underscore A*STAR's commitment to undertake innovative research leading to products and processes that can be adopted by companies to raise their competitiveness. We are dedicated to drive for excellence and forging partnerships with companies to grow our industries", said Prof Raj Thampuran, Managing Director of A*STAR.



Celebrating 50 Years of Engineering Excellence

YOU CAN NAME SINGAPORE'S TOP ENGINEERING ACHIEVEMENTS!



What feats of engineering over the past 50 years have contributed to your life to build the nation we enjoy today?

Launched on the 22nd July 2015, the Engineering Feats @ IES-SG50 is a national competition to seek out and recognize the top 50 engineering achievements across the various fields of engineering deemed by Residents of Singapore to have made the greatest economic, infrastructural or societal impact to Singapore.

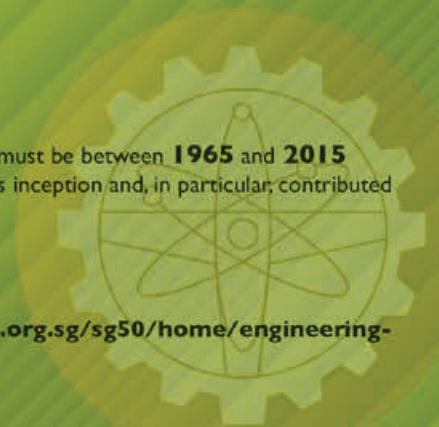
We want to invite you – all project owners, engineers and members of public – to nominate engineering projects, systems or products of any scale that you deemed to be impactful or highly innovative, whether in design, manufacturing, product or systems integration across all industry sectors.

CRITERIA

- The completion dates of the engineering projects or commercialization of engineering products must be between **1965** and **2015**
- Engineering projects or products should have made significant impact to the society at time of its inception and, in particular, contributed to Singapore's economic growth or well-being of its citizens.

HOW TO ENTER

All entries must be submitted online by 30 November 2015. For more information, visit www.ies.org.sg/sg50/home/engineering-feats/



‘Samwoh Eco-Green Building - First Building in the Region’ by Samwoh Corporation Pte. Ltd



Samwoh Eco-Green Building is the first in the region to be constructed with up to 100% recycled concrete aggregate (RCA), which is derived from the construction & demolition waste. Extensive laboratory testing has been conducted to evaluate the performance of RCA concrete and the findings have been published in two renowned journals, namely, American Society of Civil Engineers and Magazine of Concrete Research from UK. The completion of this building has marked a breakthrough in concrete technology and paved the way towards greater sustainability.

ENGINEERING PROJECT

‘The Future of Audit: Predictive Analytics on Irregularities and Risks in Bank Branches’ by A*STAR, I²R and Group Audit, DBS Bank Ltd



DBS-I²R Joint Lab has developed a Data Analytics based solution for Predictive Auditing. This is a data driven and learning risk surveillance model which analyses heterogeneous data to detect and predict risk events. The solution enables 1) the bank to establish preventive controls before these risks escalate; and 2) a laser-sharp focus on their areas of review. Consequently, this will lead to an overall up-tiering of the internal control environment of the bank and increase customer confidence in the integrity of the financial industry.

‘Jurong Rock Caverns’ by JTC Corporation



Jurong Rock Caverns (JRC) is located on Jurong Island and is Southeast Asia’s first commercial underground facility for the storage of liquid hydrocarbons such as crude oil and condensate. JRC is located 150 metres below the ground and 130 metres below the seabed, making it the deepest known underground public works endeavour in Singapore to-date. With its successful completion, JTC and Singapore is well positioned to explore more innovative solutions to further promote Singapore’s economic growth.