JURUTERA

THE MONTHLY BULLETIN OF THE INSTITUTION OF ENGINEERS, MALAYSIA
MAY 2016
KDN PP 1050/12/2012 (030192)
ISSN 0126-9909

IEM 57th Annual General Meeting and Annual Dinner and Awards Night 2016

alcom

ADITYA BIRLA
NOVELIS

ALCOM
Future Roofing For Today

NATURAL CORROSION RESISTANCE

ECO FRIENDLY

VALUE FOR MONEY

RECYCLABLE

DURABLE & LIGHTWEIGHT

T | +603 3346 6262
F | +604 3341 2793
W | www.alcom.com

Aluminium Company of Malaysia Berhad (Co. No. 3859-U)
No.3 Persiaran Waja, Bukit Raja Industrial Estate 41050 Klang, Selangor Darul Ehsan, Malaysia

XYPEX®

Sustainability In Concrete Structures

The Solution to Sustainability In Concrete Structures

A process water tank, at the Iluka Minerals site in Geraldton, Western Australia, that was constructed in the early 1970's had become unserviceable due to corrosion around the base. The tank is 25 metres wide and 3 metres high, constructed with steel-walls and a concrete foundation. It has a capacity of approximately 1.4 million litres. Faced with the prospect of a $1.2 million replacement cost, Consulting Engineer John Montgomery in association with engineers from Iluka Minerals developed a strategy for the rehabilitation of the tank at an economically viable cost.

It was determined that the most appropriate remediation system was to employ Xypex Admix C-5000 in a shotcrete mix and incorporating Kuniseal C-31DS waterstop positioned in the floor wall joints.

As a result approximately 45m³ of Xypex Admix C-5000 dosed shotcrete was sprayed up against the existing metal walls, and approximately 100 lineal metres of Kuniseal C-31 DS was installed.

This system enabled an estimated saving of approximately $900,000 and significantly a reduced down time of only 14 days.

On completion of the repairs, the tank was filled and while initially there were a number of minor leaks, these reduced to zero within 10-14 days, as the Xypex Crystalline development took place. The structure is again in service and remains watertight and now has a greatly extended service life expectation.

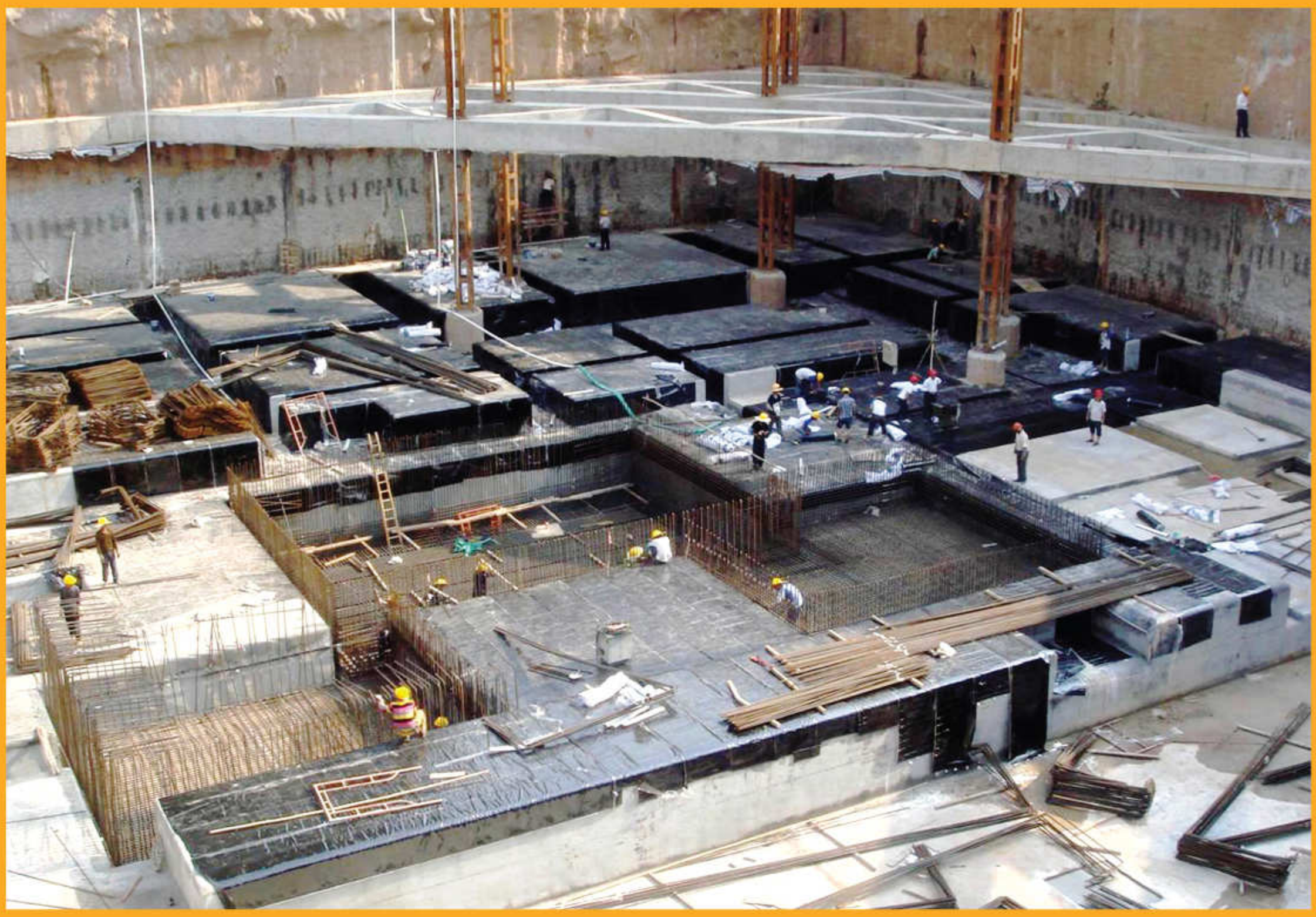
For more information on how our solutions can provide sustainable benefits for your concrete assets, please visit our website at **www.xypex.com.au** or **LinkedIn Page.**

RNC®

RNC Integral Concrete Technology (M) Sdn Bhd (436178-D)
Exclusive applicator and distributor for Xypex in Malaysia, for **Xypex: Sustainability In Concrete Structures** solutions that includes conrete repair, protection and durability enhancement.

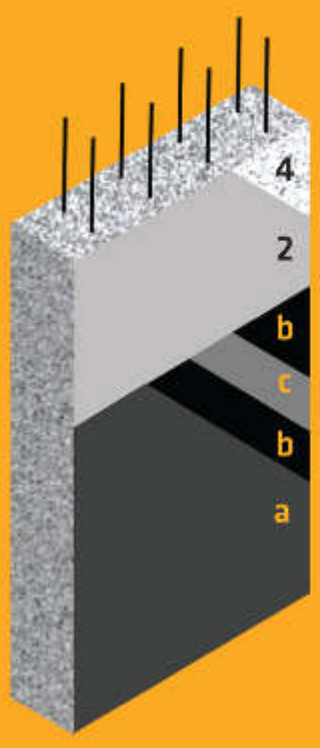
37 Jalan Putra Mahkota 7/7B
Putra Heights 47650
Subang Jaya,
Selangor Darul Ehsan

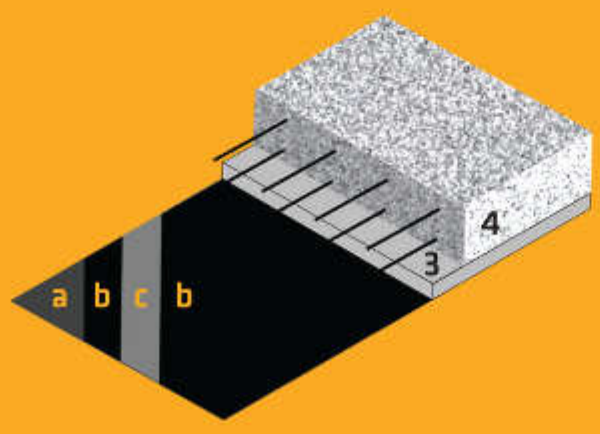
Tel: +603-51928186 Fax: +603-51926826
Email: support@waterproofing.com.my
www.waterproofing.com.my



SikaBit® W-15

WET-BONDED WATERPROOFING MEMBRANE





SikaBit® W-15 is a sheet membrane waterproofing system consisting of a cross laminated HDPE carrier film laminated with a modified bitumen based adhesive on both surfaces. Due to the double-sided structure the SikaBit® W-15 system can be installed single or (partially) double layered and does not require any accessories such as tapes and pastes etc.

BUILD-UP

1. SikaBit® W-15
   a. Release liner
   b. Modified bitumen adhesive
   c. Cross laminated HDPE carrier film
2. SikaBit® W-1 mortar
3. Concrete screed
4. Structural concrete

SIKA KIMIA SDN BHD · WATERPROOFING
No. 9, Jalan Timur, 46000 Petaling Jaya, Selangor D.E., Malaysia
Phone: +603 7957 0111 · Fax: +603 7956 7291
www.sika.com.my

BUILDING TRUST

JURUTERA

Number 05, May 2016 IEM Registered on 1 May 1959

THE INSTITUTION OF ENGINEERS, MALAYSIA
Bangunan Ingenieur, Lots 60 & 62, Jalan 52/4, P.O. Box 223, (Jalan Sultan), 46720 Petaling Jaya, Selangor Darul Ehsan.
Tel: 603-7968 4001/4002 Fax: 603-7957 7678
E-mail: sec@iem.org.my Homepage: http://www.myiem.org.my

CONTENTS

COVER NOTE 5
Connecting Members Nationwide

COVER STORY 6 - 11
57th IEM Annual Dinner & Awards Night 2016

PRESIDENTIAL ADDRESS 2016 12 - 16
"Rejuvenation of the Institution for Long Term Sustainability"

FEATURE ARTICLES 18 - 34
Quality Assessment System in Construction 18
From Bullock Carting to Engineering 28

FORUMS 36 - 39
IEM Forums at ASEAN's Mechanical and Electrical Engineering Expo 36

GLOBE TREKKING 44
Baja's Forest Man

PINK PAGE 45
Professional Interview

BLUE PAGE 46 - 48
Membership List

UEFA EURO2016 FRANCE

Official Partner of UEFA EURO 2016

Hisense

Energy Efficient VRF and Multi-split

BEZAIRE

Bezaire Sdn Bhd (1042479-A)

No. 13A&B, Jalan PJS 1/27, Off Jalan Klang Lama 46000 Petaling Jaya, Selangor, Malaysia.

Tel: +603-7773 2383/ +603-7773 2838 Fax: +603-7773 2230

International Quality · Beyond

by Ir. Mohd. Khir Muhammad
Bulletin Editor

Ir. Mohd. Khir Muhammad, 53, is the Past Chairman of IEM Southern Branch. He is currently a director at Ikasuri Sdn. Bhd., an engineering and project management company in aerospace, automotive and offshore engineering. He was the Head of Aero Lab, Universiti Teknologi Malaysia from 1994 to 2013 where he was involved in the setting up of as well as operations of the first wind tunnel facility in Malaysia for the aerodynamics testing of automotive models.

Connecting Members Nationwide

This month's *JURUTERA* is the first issue for 2016/2017, with Ir. Tan Yean Chin at the helm of Institution of Engineers Malaysia. Here, we highlight his visions for IEM to continue to grow its membership and to stay relevant for long-term sustainability. Ir. Tan also speaks on the importance of promoting science, technology, engineering and mathematics (STEM) in Malaysia as this will affect the number of potential members in the future.

With a circulation of 20,000 printed copies (and an online version) monthly, made available to 40,000 members, of which a large percentage comprises graduate and student categories, *JURUTERA* certainly plays a significant role as the mouthpiece of the Institution and connects its members across the nation. Our priority for *JURUTERA* is its timely delivery, with features and articles ofinterest to and which are relevant to IEM members.

With 8 standing committees, 18 technical divisions, 3 special interest groups, young engineer and women engineer sections, as well as 12 branches nationwide, it is certainly a challenge for *JURUTERA* to balance the needs and to fulfill requirements of all stakeholders. This is no easy task as our members come from so many disciplines of engineering.

Over the years, we have improved on the date of delivery and contents by reviewing workflow process and coordination work amongst the editorial team. Recently we also reviewed the editorial policy and developed plans for the continued improvement of *JURUTERA*, and this will be reflected from the January 2017 issue. To be able to do this, however, we will require the support of all members to keep contributing quality articles and features of interest to our fraternity.

We thank the Editorial Board members of last session (2015/2016) for their contributions and voluntary services and we welcome the new line-up of the Standing Committee and Editorial Board for 2016/2017. ■

DIMENSION PUBLISHING SDN. BHD. (449732-T)
Level 18-01-03, PJX-HM Shah Tower, No. 16A, Persiaran Barat,
46050 Petaling Jaya, Selangor Darul Ehsan, Malaysia.
Tel: +(603) 7493 1049 Fax: +(603) 7493 1047
E-mail: info@dimensionpublishing.com
Website: www.dimensionpublishing.com

For advertisement placements and subscriptions, please contact:
DIMENSION PUBLISHING SDN. BHD. (449732-T)
at +(603) 7493 1049, or E-mail: info@dimensionpublishing.com

Subscription Department
E-mail: info@dimensionpublishing.com

Printed by
HOFFSET PRINTING SDN. BHD. (667106-V)
No. 1, Jalan TPK 1/6, Taman Perindustrian Kinrara,
47180 Puchong, Selangor Darul Ehsan, Malaysia.
Tel: +(603) 8075 7222 Fax: +(603) 8075 7333

Mailer
PERFECT MAIL SERVICES. (648839-P)
14 Jalan TSB 2, Taman Perindustrian Sungai Buloh,
Sungai Buloh, Selangor Darul Ehsan, Malaysia.
Tel: +(603) 6156 5288

JURUTERA MONTHLY CIRCULATION: 36,000 COPIES

Submission or placement of articles in JURUTERA could be made to the:-

Chief Editor
THE INSTITUTION OF ENGINEERS, MALAYSIA (IEM)
Bangunan Ingenieur,
Lots 60 & 62, Jalan 52/4, P.O. Box 223 (Jalan Sultan),
46720 Petaling Jaya, Selangor.
Tel: +(603) 7968 4001/4002 Fax: +(603) 7957 7678
E-mail: pub@iem.org.my or sec@iem.org.my
IEM Website: http://www.myiem.org.my

57th IEM ANNUAL DINNER & AWARDS NIGHT 2016

by Zoe Phoon

IEM EMBRACES REJUVENATION TO STAY RELEVANT IN THE EVER-CHANGING ENGINEERING LANDSCAPE

The weather was balmy and the night was calm. With that, the 57th IEM Annual Dinner & Awards Night 2016 took off on a bright note as fellow engineers, government representatives, corporate captains, entrepreneurs, professionals, contractors, suppliers and other industry stakeholders gathered to celebrate the much anticipated occasion.

The Institution's annual event was held at Sunway Resort Hotel & Spa in Bandar Sunway, Selangor. The guest of honour was YB Dato' Sri Liow Tiong Lai, the Honourable Minister of Transport, Malaysia. The event was hosted by the newly elected IEM President for the 2016-2017 session, Ir. Tan Yean Chin. IEM's Immediate Past President, Dato' Ir. Lim Chow Hock, the newly elected Vice Presidents, Honorary Secretary as well as members of the IEM Excomm and Council were also present to support the President in hosting dignitaries and VIP guests from the engineering field.

The cocktail and pre-dinner reception began at about 7.00p.m. YB Dato' Sri Liow arrived at 7.45p.m. and shortly after, was ushered into the grand ballroom. The LED Butterfly Dance followed and an eight-course dinner commenced thereafter. The evening continued with EB Duet, a vocal and guitar jazz

duo from Malaysia entertaining the guests as they dined with light jazz numbers.

IEM REJUVENATES FOR PROMINENT FUTURE

Some 45 minutes into dinner, Ir. Tan, and later YB Dato' Sri Liow, delivered their respective speeches.

IEM, one of the largest professional organisations in the country, has a membership of 40,208 as of March 1, 2016, including Student Members. Its need to remain relevant to ensure its long term sustainability and survival set the tone of Ir. Tan's message that evening.

He said that with impending changes and development of more engineering disciplines, it is important that IEM evolves and stays relevant with the ever-changing engineering landscape.

"Therefore, we need to `rejuvenate' IEM so that we can continue to grow and stay relevant for long-term sustainability.

"In addition, with a big pool of engineers working in new and non-traditional engineering sectors, IEM would target them for membership, cater for their needs and open up opportunities for them to participate actively in IEM. Of course, this is no easy task," he said, inviting all IEM members to work together to achieve the vision of a rejuvenated and sustainable institution.

"I believe with our collective efforts, IEM will continue to excel in our excellent tradition that has been laid down in the past while rejuvenating to face new challenges ahead," he added.

Earlier in the day at IEM's annual general meeting (AGM), in his presidential address entitled "Rejuvenation of the Institution for long-term sustainability", Ir. Tan underscored the need to take necessary steps to ensure a prominent future for IEM.

According to him, while the Institution has been successful in providing benefits to members in the form of technical talks, short courses, seminars, conferences, site visits and other welfare and social events, the key challenge ahead is to remain relevant in a complex and ever changing world.

He commented that in IEM's early years (1960s to 1980s), most of the founding office bearers and members came mainly from traditional engineering disciplines such as civil, mechanical, electrical and chemical and worked in traditional engineering sectors like government service, education, construction, power and consultancy which played key roles in building a young nation.

However, changes and development of more engineering disciplines emerged as the economy diversified and modernised. Ir. Tan said that IEM cannot continue to rely solely on the few traditional engineering disciplines for membership. IEM realises that there is a big pool of engineers working in non-traditional engineering sectors and has therefore created the Companion grade of membership to cater to their needs.

He also said that for IEM's long-term sustainability, Graduate Members should be a main force behind its rejuvenation.

He added: "It will be a big mistake on our part to not recognise how important these Graduate Members are to IEM and our future. We should encourage them to be more active in IEM by giving them bigger and more important roles to play.

"Similarly, this change should also apply to the Companion grade members who are academically qualified and have the necessary training experience and exposure in the engineering profession."

He said it is important to acknowledge that not all engineers wish or are able to register as IEM's Corporate Members because of their job function, experiences and different needs for career development.

"Not being able to fulfill requirements set for the Professional Interview and to be granted Corporate Membership does not make them any less an engineer than Corporate Members. The difference is that they may be practising in sectors that do not require them to develop skills and experiences set in the Professional Interview process," he said.

"Therefore, if IEM still holds on to the outdated belief that only Corporate Members can play an important

Say Hello to the Pipe Revolution

HYPRO

The Pipe Revolution

Meet HYPRO, the latest piping technology in the market today and tomorrow.

Our highly-advanced patented molecular orientation process transforms conventional PVC material into high performance PVC-O - making it 5 times stronger and weights only fraction of metal pipes, you can now say goodbye to corrosion and scaling.

Today, more than 8,000km of MOLECOR'S PVC-O pipes are in service globally, including in Europe, the Americas and Australia, and is fast gaining popularity here in South East Asia.

HYPRO is suitable for all your demanding needs in water, sewerage and irrigation.

Cost saving

100% leak tightness

Flexible and light-weight yet exceptionally heavy-duty

Superb ease of installation

50 years design life

Green & sustainable

Available in PN16 and PN25, from sizes DN90 to DN630

Contact us NOW for a FREE technical seminar

MOLECOR *South East Asia*

members of the FITTERS Group

www.molecorsea.com

inquiry@molecorsea.com

t 03-62767155 f 03-62751378

role in IEM, then its long-term sustainability and survival will be severely threatened."

He noted most of the Graduate and Companion grade members are below 40 years of age. With their participation in the main committees of IEM, they will be able to rejuvenate and bring in new ideas to help IEM to attract and cater to the younger generation of engineers.

Ir. Tan reiterated that if IEM does not change now, it will find that other newly formed organisations or existing ones will attract young engineers and even IEM's Graduate Members to join these organisations by making them feel more needed, appreciated and giving them a better platform to perform.

> "We need to 'rejuvenate' IEM so that we can continue to grow and stay relevant for long-term sustainability. IEM cannot rely solely on the traditional engineering disciplines for membership. There is a big pool of engineers working in non-traditional engineering sectors. IEM shall target them for membership and cater to their needs."
>
> **IEM President Ir. Tan Yean Chin**

STEM AND FUTURE OF ENGINEERING

Ir. Tan also spoke on the importance of promoting science, technology, engineering and mathematics (STEM), stressing that a declining interest in these subjects is detrimental to a developing country like Malaysia. And with fewer graduates in STEM fields, the number of engineering graduates will be adversely affected and in turn will reduce the number of potential IEM members in the future.

Already, IEM is one of the initiators and part of the steering committee of the Kuala Lumpur Engineering and Science Fair (KLESF) programme to enhance the interest of school children and teenagers in science. The programme comprises activities to promote the importance of science, technology and innovation and facilitate students to interact with engineering and science professionals to complement the existing school STEM curriculum with more hands-on learning components. The activities also aid the outreaching of STEM to suburban and rural communities, and enhance science literacy among the general public.

At the AGM, Dato' Ir. Lim Chow Hock officially handed over the Presidential Chain of Office to Ir. Tan, who also holds the post of Secretary-General of the Federation of Engineering Institutions of Asia and the Pacific (FEIAP). A professional engineer and an Accredited Checker (Geotechnical) registered with BEM, he is also a registered ASEAN Chartered Professional Engineer (ACPE), an honorary Fellow of the ASEAN Federation of Engineering Organisations (AFEO), registered engineer in the APEC and the International Professional Engineer Register, Fellow of IEM and Fellow of the ASEAN Academy of Engineering & Technology (AAET).

He obtained his Bachelor Degree in Civil Engineering with First Class Honours from Universiti Technologi Malaysia in 1992 and Master's Degree in Geotechnical Engineering and the Chin Fung Kee Prize for outstanding academic performance from Asian Institute of Technology, Bangkok, in 1994. Currently, he is a senior director in G&P Professionals Sdn. Bhd., a multidisciplinary engineering consulting firm.

Meanwhile, YB Dato' Sri Liow, in his speech at the annual dinner and awards night, said that with the current economic crisis and resource constraints, the need to innovate is even greater.

"With our budget deficit estimated to reach 4.5% of gross domestic product (GDP) this year and the continued slump in oil and commodity prices, how will the government achieve future infrastructure development and maintenance at a level that we are used to?"

"We need to work together to answer this question. What is for certain is that we are not going to achieve it through conventional procurement and engineering practices. This is where IEM and its 40,000 members can help. Help us find new ways to build the much-needed infrastructure at lower costs."

On another note, he called on IEM members to take part in the opportunities arising from China's One Belt-One Road Regional Strategy, or the Belt-Road strategy in short, which aims to promote infrastructure development in Asia, the Middle East, parts of Europe, South Asia and Southeast Asia to enable deeper economic cooperation. He said the recent bilateral talks with China also touched on possible future projects between the two countries.

The Minister also said that the role of IEM and its members is becoming increasingly vital given regional developments such as ASEAN has embarked on land transport infrastructure integration and intermodal interconnectivity with principal airports, ports as well as inland waterway and ferry links.

Furthermore, ASEAN is set to promote coordinated efforts at the policy and operation levels to develop ASEAN land transport trade corridors. He said the worrying data about people killed on the roads annually, as stated in the 2013 World Health Organization Global Status Report on Road Safety, shows a crucial need for collective effort to reduce the risk of road crashes.

On human capital, he pointed out that engineers, being at the forefront of the current development transformation in Malaysia, will also need to ensure that future growth is sustainable.

For sustainable growth, a sufficient supply of bright, well educated and well motivated young people entering engineering in various disciplines would be essential as the country's economy transforms and modernises.

"In this respect, IEM has the duty and task of relaying the current engineering opportunities and challenges as well as inspire up-and-coming engineers to find new and creative solutions," YB Dato' Sri Liow added.

Violinist Dr Joanne Yeoh, a lecturer in music at Universiti Putra Malaysia took to the stage at 9.00p.m. to entertain the audience for the next 20 minutes.

IEM CELEBRATES EXCELLENCE

That was followed by the highlight of the evening – the presentation of awards and recognition from IEM for outstanding academic performance, exemplary service to

the engineering industry and commendable contribution to the Institution. Ir. Tan Yean Chin did the honours in giving away the awards (please see tables on award recipients).

Each of the 26 recipients took home the IEM Gold Medal Award 2015 for the best engineering students in local universities.

The IEM Presidential Awards of Excellence 2015 for the Most Active Technical Division were presented to Technical Divisions which had performed well in terms of activities, generating income and organising seminars and courses for the year.

For the Merit Award, 5th placing, Ir. Thavananthan received the Certificate for Chemical Engineering Technical Division; and for the Merit Award 4th placing, Ir. Lee Peir Tien received the Certificate for Geotechnical Engineering Division. For the Most Improved Technical Division, Ir. Andrew Yeow received certificates and an Appreciation Meal for the Tunnelling and Underground Space Technical Division.

The top three best performers amongst the twenty-two Technical Divisions of the Institution were the Mechanical Engineering Technical Division (METD), Electrical Engineering Technical Division (EETD) and the Women Engineer Section in that order. METD, which was champion for the 10th time, was represented by Ir. Dr Kannan M. Munisamy while runners-up, EETD was represented by Ir. Yau Chau Fong. Women Engineer Section, a newbie to the PAOE awards, won third place, a giant leap from the improved position last year. It was represented by Ir. Dr Leong Wai Yie.

Next in line was the Most Supportive Award, a set of awards for organisations/individuals to encourage employees/fellow engineers and colleagues to be Graduate and Corporate Members of IEM. Based on successful applications, the award's purpose is to recognize individuals or organisations who had been supporting IEM in membership recruitment.

Ir. Hj. Harizan bin Che Mat Haris received the Most Supportive Award for Graduate Membership for Individual category while Dato' Prof. Emeritus Dr Hassan Said, Vice Chancellor of Universiti Teknologi Mara (UiTM), received the Most Supportive Award for the Graduate Membership for Organisation category as well as the Most Active Organisation in Membership Drive on behalf of the university.

In addition, IEM recognised Tenaga Nasional Bhd. and JPS (the Department of Irrigation and Drainage) as "the most supportive organisations" to encourage corporate members to become members of IEM.

The highlight of the evening was the presentation of the IEM Award for Contribution to Engineering Industry. Five companies were identified for their contribution to the engineering industry in the various categories. Sunway Integrated Properties Sdn. Bhd. received the award for property development, Gamuda Bhd. for transportation, Pestech International Bhd. for energy, Ekovest for wastewater management and Taliworks Corporation Bhd. for water resources.

Receiving the award on behalf of Sunway Integrated Properties was its Sunway Group Chairman Y.Bhg. Tan Sri Jeffrey Cheah AO while Gamuda Berhad was represented by its Deputy Group Managing Director Y.Bhg. Dato' Ir. Paul Ha, Pestech International Berhad by Executive Director and CEO Mr. Paul Lim Pay Chuan, Ekovest Berhad by its Managing Director Y.Bhg. Datuk Seri Lim Keng Cheng and Taliworks by its Executive Director, Y.Bhg. Dato' Ronnie Lim Yew Boon.

Following this was conferment of the IEM Honorary Fellow to Ir. Choo Kok Beng. Among his numerous achievements, Ir. Choo distinguishes himself as the founder of the ASEAN Engineering Register to facilitate mobility of the engineering fraternity within ASEAN member states and has served as its honorary adviser and head commissioner for the years 2000-2003 and 2010-2012.

The long awaited highlight of the evening's entertainment was when Queen of Pop Jazz Dato' Sheila Majid wowed the audience with her superb performance and showmanship. It was indeed a memorable evening for many present who were her fans.

The final segment of the evening was the Mystery Gifts Draw by the IEM President's wife, Mrs. Tan. Prizes included several health screening vouchers worth RM800 each and holiday packages to Thailand's Phuket and Krabi.

The event came to a close at 11.00p.m. when the emcee, former Miss Malaysia/Miss World Nadia Heng, bade the guests good night.

Tables on award recipients:

IEM GOLD MEDAL AWARD 2015

NO	STUDENT NAME	UNIVERSITY
1	Aisyahira Binti Melan	Universiti Pertahanan Nasional Malaysia (UPNM)
2	Angel Kuok Mei Erh	Universiti Malaysia Sabah (UMS)
3	Andrew Teh Boon Kheng	Asia Pacific University Of Technology & Innovation (APU)
4	Chong Kok Yung	Universiti Tunku Abdul Rahman (UTAR)
5	Fabian Anak Gending	Universiti Malaysia Sarawak (UNIMAS)
6	Irene Lock Sow Mei	Universiti Teknologi Petronas (UTP)
7	Khairunnisa Binti Azmi	Universiti Teknologi Malaysia (UTM)
8	Khoo Xin Ping	Multimedia University (MMU)
9	Koh Kok Yuen	Universiti Putra Malaysia (UPM)
10	Kok Ka Yee	Curtin University Sarawak
11	Lee Wee Pin	Univerisiti Teknikal Malaysia Melaka (UTEM)
12	Lim Wai Xiang	KDU Penang University College
13	Matthew Chai Min Enn	Swinburne University Of Technology Sarawak Campus
14	Matthew Lee Ching Han	Monash Universiti Malaysia
15	Michelle Tai Pei Wen	Inti International University, Nilai
16	Mohd Hanif Bin Mohamed	Universiti Tun Hussein Onn Malaysia (UTHM)
17	Muhammad Asiff B. Razif Shah Ranjit	Universiti Selangor (UNISEL)
18	Muhamad Firdaus Bin Mohtar	Universiti Teknologi Mara (UiTM)
19	Muhammad Nashrul Bin Ramli	Malaysia-Japan International Institute Of Technology, Universiti Teknologi Malaysia (MJIIT)

20	Ng Ai Lee	Universiti Kebangsaan Malaysia (UKM)
21	Ng Teck Huai	Universiti Malaysia Pahang (UMP)
22	Nurul Syuhada Binti Ahmad Rudin	International Islamic University Malaysia (IIUM)
23	Quah Pooi Chi	Taylor's University
24	Siti Nurizzah Adnim Binti Mohd Nasir	Tati University College (TATIUC)
25	Tan Shim Shen	Universiti Tenaga Nasional (UNITEN)
26	Wong Soon Khen	UCSI University

IEM PRESIDENTIAL AWARDS OF EXCELLENCE 2015

PLACING	TYPE OF AWARD	CHAIRMAN	PRIZES
5th Placing	Chemical Engineering Technical Division	Thayananthan Balakrishnan	Certificate
4th Placing	Geotechnical Engineering Technical Division	Yee Thien Seng	Certificate
Most Improved Technical Division	Tuneling And Underground Space Technical Division	Andrew Yeow Pow Kwei	Certificate & Appreciation Meal
2nd Runners Up / 3rd Placing	Women Engineer Section	Dr Leong Wai Yie	Certificate & Appreciation Lunch
1st Runners Up / 2nd Placing	Electrical Engineering Technical Division	Yau Chau Fong	Certificate & Appreciation Dinner
Champion	Mechanical Engineering Technical Division	Dr Kannan M Munisamy	Certificate, Trophy & Appreciation Dinner

MOST SUPPORTIVE AWARD

TYPE OF AWARD	ORGANISATION	PERSON RECEIVED AWARD
Graduate Membership for Individual Category		Hj. Harizan Bin Che Mat Haris
Graduate Membership for Organisation Category	Universiti Teknologi Mara (UiTM)	Prof. Emeritus Dato' Dr Hassan Said, Vice Chancellor And President
Corporate Membership for Individual Category		Dr Ahmad Anuar Bin Othman
Corporate Membership for Organisation Category	Jabatan Pengairan Dan Saliran Malaysia (JPS) And Tenaga Nasional Berhad (TNB) – A Tie	Dato' Hj. Zulkefli Bin Hassan, Director General (Ketua Pengarah) of Jabatan Pengairan Dan Saliran Malaysia(JPS) & Y.Bhg. Datuk Engineer Baharin Bin Din Vice President, Distribution of Tenaga Nasional Berhad (TNB)
Most Active Organisation	Universiti Teknologi Mara (UiTM)	Prof. Emeritus Dato' Dr Hassan Said, Vice Chancellor And President

IEM CONTRIBUTION TO ENGINEERING INDUSTRY AWARD 2015

ORGANISATION	PERSON RECEIVED AWARD	AWARD FOR:
Ekovest Berhad	Y.Bhg. Datuk Seri Lim Keng Cheng, Managing Director	Wastewater Management
Gamuda Berhad	Y.Bhg. Dato' Paul Ha, Deputy Group Managing Director	Transportation
Pestech International Berhad	Mr. Paul Lim Pay Chuan, Executive Director/Chief Executive Officer	Energy
Sunway Integrated Properties Sdn. Bhd.	Mr. Tan Wee Bee, Deputy Managing Director	Property Development
Taliworks Corporation Berhad	Y.Bhg. Dato' Ronnie Lim Yew Boon, Executive Director	Water

"Rejuvenation of the Institution for Long Term Sustainability"

Biodata of Ir. Tan Yean Chin

Ir. Tan Yean Chin is President of The Institution of Engineers, Malaysia (IEM) and board member of the Board of Engineers, Malaysia (BEM). He is also Secretary General of the Federation of Engineering Institutions of Asia and the Pacific (FEIAP), an independent umbrella organisation for engineering institutions in Asia and Pacific region.

Ir. Tan obtained his Bachelor Degree in Civil Engineering with First Class Honours, from Universiti Technologi Malaysia (UTM) in 1992. Two years later, he obtained his Masters Degree in Geotechnical Engineering as well as won The Chin Fung Kee Prize for outstanding academic performance from Asian Institute of Technology (AIT), Bangkok.

A Professional Engineer and an Accredited Checker (Geotechnical) registered with the BEM, Ir. Tan is registered in ASEAN Chartered Professional Engineer (ACPE) as well as APEC and International Professional Engineers. He is an Honorary Fellow of the ASEAN Federation of Engineering Organisations (AFEO), Fellow of IEM and Fellow of ASEAN Academy of Engineering & Technology (AAET). In IEM, he had served in the following positions:

1. Deputy President (2014-2016)
2. Vice President (2005-2009, 2012-2014)
3. Honorary Treasurer (2009-2010)
4. Council members (2002-2005, 2010-2012)
5. Chairman of Finance Committee (2014-2016)
6. Chairman of Position Paper Committee (2014-2016)
7. Chairman of Standing Committee on Professional Practice (2005-2007)
8. Chairman of Standing Committee on Corporate Affairs (2007-2009)
9. Chairman of Geotechnical Engineering Technical Division (2004-2006)
10. Member of Graduate and Student Section (1995-1998)

Ir. Tan is a Senior Director in G&P Professionals Sdn. Bhd., a multi-disciplines engineering consulting firm. He has published more than 70 technical papers on geotechnical engineering at local and overseas conferences and seminars.

Other positions :-

MALAYSIA:

- Board member, Board of Architects, Malaysia (BAM) (2008)
- Member of the Expert Panel to Review Malaysian Construction Industry Practices, appointed by the Minister of Works (2013-2014)
- Chairman of Committee on Professional Practice at Board of Engineers, Malaysia (BEM) (2009-2012, 2013-2016)
- Chairman of the CIDB Working Group on Temporary Works in Construction (2015-2016)

INTERNATIONAL:

- Secretary General of ASEAN Federation of Engineering Organisations (AFEO) (2007-2009)

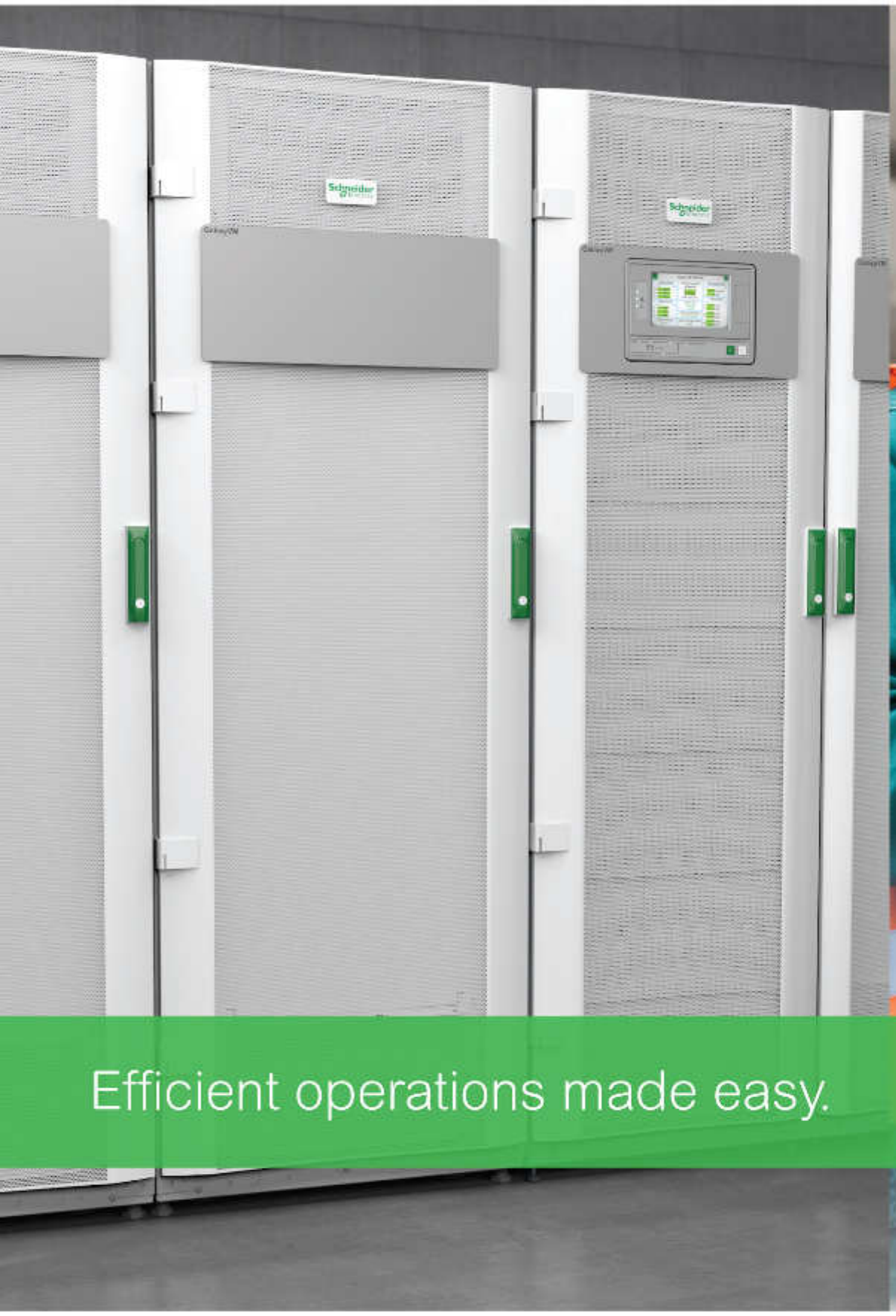
Ir. Tan is married to Madam Lian Poh Hoon and they have two sons.

Respected Past Presidents, Immediate Past President, the newly elected Deputy President, Council Members and fellow engineers.

I am greatly honoured to present the Presidential Address at this Annual General Meeting, as according to our Institution's traditions. The President has to present his vision and action plan for the beloved Institution, which is a challenging task because the topic selected must be close to my heart, has to be for the betterment of institution and of interest to our members. After considerable thought, I have selected the topic, "Rejuvenation of the Institution for Long Term Sustainability"

COMPOSITION OF IEM MEMBERSHIP

Since its formation in 1959, IEM has grown to be one of the largest learned civil society organisations in Malaysia with about 34,000 members in all grades of membership. With this vast pool of engineering expertise, IEM can claim recognition



Efficient operations made easy.

Ultra high efficiency up to 99%

Reliable electrical performance, power quality, and availability.

Who said industrial environments can't have efficiency AND availability? Introducing the Schneider Electric Galaxy™ VM three-phase UPS. Three modes of operation. Seamlessly integrated. Easy to deploy, install, and maintain.

- ECOnversion mode complies with IEC 62040-3 class 1
- Modular battery architecture
- Wide input voltage range
- Life cycle services

Call us now. We can help you to optimize energy and sustain performance.

ADRIAN KOH • +6012 209 0933
adrian.koh@schneider-electric.com

KC LAU • +6019 419 3036
kokchoy.lau@schneider-electric.com

CUSTOMER CARE CENTRE • 1-800-880-977 (Toll Free)
customercare.my@schneider-electric.com

schneider-electric.com

Life Is On | Schneider Electric

as the voice of engineers in the country which plays a pivotal role in promoting and upholding our professional status and image at national and international levels.

To plan and chart a course for IEM, we must first examine the growth of membership which is an important indicator of the sustainability of the Institution. The breakdown of IEM membership grades into Corporate and Non-Corporate over the last 12 years are shown in Chart 1 below.

According to IEM Constitution and Bylaws, Fellows and Members are Corporate Members of IEM who have the right to vote, requisite meetings and be elected to the Council, while Graduate and Student members are Non-Corporate Members who do not have these rights.

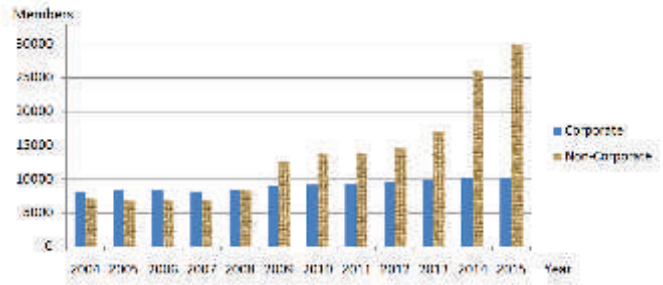


Chart 1: IEM Corporate and Non-Corporate Membership from 2004 to 2015.

As shown in Chart 1, IEM membership has shown steady growth from approximately 15,000 in 2004 to about 40,000 in 2015. However, it shows clearly that the growth of Non-Corporate Members has overtaken the growth of Corporate Members. The increase in Corporate Members in the last decade has been slow. In fact, in 2015, there was only an increase of less than 200, constituting about 1.1% of the total Corporate membership. On the other hand, the number of Non-Corporate members had increased by about 15% in 2015, or about 4,000 new members.

The total number of members increased by about 4,000 in 2015 alone, which indicates about 11% growth. However, as of 2015, there were more than 98,000 engineers registered with the Board of Engineers Malaysia (BEM) while we only registered some 40,000 members. So, we still have a big margin for improvement.

Chart 2 illustrates the membership in four major categories. The number of Student Members, which jumped by more than one-third in 2015 compared to 2014, is the main reason for the substantial increase in Non-Corporate Members. Despite being the largest group (based on numbers), the subscription fees paid by Student Members do not have a major direct and positive impact on the financial condition of IEM. However, it is vital to continue our efforts to recruit more Student Members and introduce them to IEM in their undergraduate years so that they will understand the roles and functions of the Institution better; this way, they will be more likely to join IEM after graduation.

In order to continue this healthy growth trend of Graduate Members, IEM has been taking proactive action such as bulk registration, to encourage Student Members to sign up as Graduate Members upon graduation. The continuing of this effort is of utmost importance, and more needs to be done.

Despite the increase in the overall number of IEM members, there was a significant drop in the number of Graduate Members. It is hoped that this trend does not continue as these members contribute substantially to the IEM coffers. Moreover, Graduate Members will also be forming IEM's future Corporate Members.

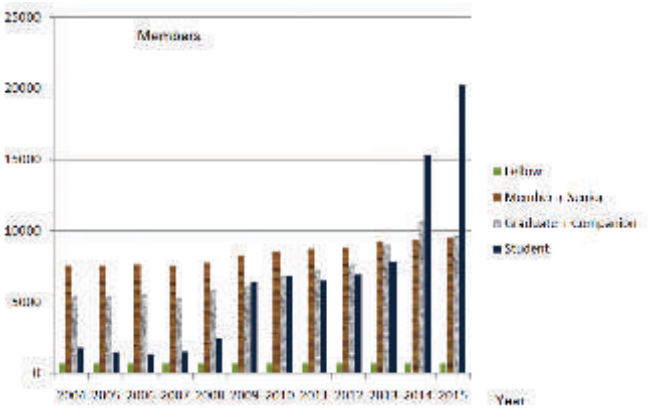


Chart 2: Breakdown of Different Categories of IEM Membership from 2004 to 2015.

Membership data indicates that for IEM members who are engineers (excluding Student Member), the Member grade is still the largest group followed closely by Graduate. The ratio of Graduate Members to Corporate Members was 0.65:1.0 for the last 12 years. Despite a decline in 2015, the combined Graduate and Companion grade membership of more than 9,000, still constitute 23% of overall membership. Therefore, now is the right time to re-evaluate the role and responsibility of these two grades of memberships.

REJUVENATION AND SUSTAINABILITY

"Every living faith must have within itself the power of rejuvenation if it is to live"

Mahatma Gandhi

In order to ensure a bright and prominent future for IEM, we need to strategise, plan and take the necessary steps and make changes to ensure its relevance and sustainability in the future. IEM has been successful in providing benefits to members in the form of technical talks, short courses, seminars, conferences, site visits and other welfare and social events but the key challenge ahead is to remain relevant in an ever complex and changing world. In the early years (1960s to 1980s), most of the founding office bearers and members of IEM came mainly from traditional engineering disciplines such as Civil, Mechanical, Electrical and Chemical. They worked in traditional engineering sectors such as Government Service, Education, Construction, Power and Consultancy which played key roles in the building of a young nation.

Currently the Corporate Members of IEM are still mainly from these traditional engineering disciplines as these engineers are more likely to pursue Professional Engineer status due to the requirements of their career compared

with engineers from non-traditional engineering disciplines (such as electronics, computer, process, etc) who work mostly in factories, manufacturing, process, R&D, oil & gas, IT and other non-traditional engineering sectors which may not require Professional Engineer status for career advancement.

With impending changes and the development of more engineering disciplines, it is important that IEM evolves and stays relevant with the ever-changing landscape of engineering. IEM cannot continue to rely solely on the few traditional engineering disciplines for membership. Understanding that there is a big pool of engineers working in non-traditional engineering sectors, IEM shall target them for membership and cater to their needs. The Companion grade of membership was created to cater to this group and we shall continue to encourage them to join IEM.

From the breakdown of different membership grades as shown in Chart 1, it is clear that Graduate Members are one of the largest compositions of IEM membership. However, based on current IEM Constitution and Bylaws, they are Non-Corporate grade and do not have the right to vote or to be elected to the Council. These Graduate Members are engineers who have graduated with engineering degrees recognised by the Engineering Accreditation Council (EAC) of Malaysia and are practicing engineers in their own field and discipline.

For long term sustainability, Graduate Members should be a main force behind the rejuvenation of the Institution. It will be a big mistake on our part to not recognise how important these Graduate Members are to IEM and our future. We should encourage them to be more active in IEM by giving them bigger and more important roles to play. Similarly, this change should also be applicable to the Companion grade members who are academically qualified and who have the necessary training, experience and exposure in the engineering profession. It is important to acknowledge that not all engineers wish or are able to be registered as Corporate Members because of their job function, experiences and different needs for career development. Not being able to fulfill the requirements set for the Professional Interview and to be granted Corporate Membership, does not make them any less an engineer than Corporate Members. The difference is that they may be practising in sectors that do not require them to develop skills and experiences as set down in the Professional Interview process. Therefore, if IEM still holds on to the outdated and regressive belief that only Corporate Members can play an important role in IEM, then the long term sustainability and survival of the Institution will be severely threatened.

The current Constitution and Bylaws should be amended to accommodate the Graduate and Companion grade Members by giving them the right to vote and to elect among themselves, representatives in the Council, Branch Committees, Standing Committees and Technical Divisions. Hopefully, with this change, we can convince them to volunteer and to help shape the institution and the profession at large. Most of these members belong to younger age group of below 40 years. With their participation in main committees of IEM, they will be able to rejuvenate and bring in new ideas that will help IEM to attract and cater to the younger generation of engineers.

Many members may wish that IEM will remain status quo but the truth is that we cannot afford to be complacent; it is false security to believe that the ways or methods which have worked in the past will work well in the future. If IEM does not change now, we will find that other organisations, either newly formed or already in existence, will attract young engineers and perhaps even our existing Graduate Members to join them by making them feel more needed, appreciated, important and giving them a better platform to perform. With awareness and acceptance of this threat, we will see that change is necessary for IEM.

As David Schlesinger said, "Change is hard. Change is hardest on those caught by surprise. Change is hardest on those who have difficulty changing too. But change is natural; change is not new; change is important". This quote

was also used by Thomas Friedman in his book, The World Is Flat, which also quoted "Even if you are on the right track, you will get run over if you just sit there".

I truly believe that nothing is permanent except change. Therefore, let us embrace the changes necessary for the progress of our beloved Institution.

IMPORTANCE OF PROMOTING SCIENCE, TECHNOLOGY, ENGINEERING AND MATHEMATICS (STEM)

A declining interest in science, technology, engineering and mathematics (STEM) is detrimental to the development of a nation, especially a developing nation like Malaysia. In 2012, the Ministry of Higher Education, in its National Education Statistics of Higher Education Sector, reported that less than 40% of graduates in public universities in Malaysia pursued courses in STEM fields, compared with the targeted ratio of 60:40 of STEM:Non-STEM students which was set by the government for long-term socio-economic growth of the country. Urgent and effective effort is needed to correct this lack of interest in STEM.

With fewer graduates in STEM fields, the number of engineering graduates will be adversely affected and in turn, this will reduce the number of potential IEM members in the future. IEM should play an active role to help the government promote STEM. The Kuala Lumpur Engineering and Science Fair (KLESF) programme (website http://www.klesf.net/klesf/index.jsp) is one of the few STEM promotion programmes in Malaysia, initiated to enhance the interest of school-age children and teenagers in science.

IEM is one of the initiators and part of the Steering Committee of KLESF. Others are the National Science Centre, Malaysian Industry-Government Group for High Technology (MIGHT), ASEAN Academy of Engineering and Technology (AAET) and Universiti Tunku Abdul Rahman (UTAR). KLESF is also one of the key programmes under the Science To Action (S2A) initiative launched by the Prime Minister in 2013.

The programme comprises a series of activities to promote the importance of science, technology and innovation (STI), to allow students to interact with engineering and science professionals, to complement the existing school STEM curriculum with more hands-on learning components, to aid the outreaching of STEM to suburban and rural communities and to enhance science literacy among the general public. IEM's many branches in the country can play a more active role in KLESF to promote STEM to both primary and secondary school students. For proper continuity of the STEM effort by IEM, a Standing Committee headed by a Vice President will be identified to take charge.

CONCLUSION

To rejuvenate IEM, the full support of the volunteers and members as well as the Council and the Executive Committee, is needed to embrace the changes. The IEM Constitution and Bylaws should be amended to accommodate Graduate and Companion members, to enable them to play a bigger role in the policy-making and operations of IEM to ensure sustainability of the Institution. We have to work hard to attract and recruit new members and, at the same time, retain current members.

Recognising the deterioration of interest in STEM among primary and secondary students, IEM and its many branches will put in extra effort to promote STEM in the country.

In closing, I wish to thank all of you for the trust you have placed in me and the incoming Council. We will work hard to make IEM an institution that represents all engineers in Malaysia. ■

"You can accomplish anything in life, provided that you do not mind who gets the credit."
Harry S. Truman

ENGINEERED SOIL CONSOLIDATION

Accelerated Soft Soil Consolidation Reduces Settlement Time

TenCate Polyfelt® Alidrain Prefabricated Vertical Drain (PVD) effectively accelerates the consolidation of soft soil and significantly reduces settlement time to increase site constructability. Polyfelt® Alidrain PVD is specifically designed to ensure that adequate drainage capability is maintained even under the most severe soil conditions. TenCate has the capability to supply huge quantities of Polyfelt® Alidrain PVDs to fast-paced projects on tight schedule. Its track record in high profile projects is a testament of its reliability to supply high quality and cost effective PVDs. Call us for a complete geosynthetics solution.

TenCate Geosynthetics makes a difference.

TenCate Polyfelt® Alidrain AD

TenCate Geosynthetics Asia Sdn. Bhd. (264232-U)
14, Jalan Sementa 27/91, Seksyen 27,
40400 Shah Alam, Selangor Darul Ehsan, Malaysia.
Tel: +60 3 5192 8568 Fax: +60 3 5192 8575
Email: info.asia@tencate.com
www.tencategeosynthetics.com

TENCATE
materials that make a difference

Quality Assessment System in Construction

Ir. Tan Lin Choo, *graduated from Monash University, Australia with a Bachelor in Civil Engineering (Hons) in 1989. Ir. Tan is currently the Senior Manager of Total Quality Management – Knowledge Management in Sunway Construction Group of Companies.*

Mr. Akira Yabe, *graduated from Waseda University, Japan with a Bachelor in Science and Engineering in 1979. He is currently the Director of Total Quality Management (Centre of Excellence) and Southern Region Projects Management in Sunway Construction Group of Companies.*

Mr Mohd Faudzi bin Hanafiah, *obtained his Bachelor of Science degree in Civil Engineering from The Ohio State University, United States of America in 1987. He is currently the General Manager of Total Quality Management - Quality Assurance. His responsibilities include coordinating, establishing and maintaining good practices related to quality matters at Sunway Construction Group of Companies.*

Mr Azmi Mamat, *graduated from Case Western Reserve University, Ohio, USA with a Bachelor in Mechanical Engineering in 1991. He is currently the Senior Manager of Total Quality Management - Quality Assurance in Sunway Construction Group of Companies.*

To date, many Malaysian construction companies have been certified ISO 9001. Yet, many find themselves struggling to comply with ISO 9001 requirements due to lack of proper documentation and inconsistent quality of workmanship. This can be critical problem when clients require Quality Assessment System In Construction (QLASSIC) certification for their projects.

The common issues that construction companies face are:

- Work proceeds at site without Consultant's approval. For example, Request for Work Inspection is not issued and Inspection Checklist is not utilised for workmanship verification.
- Lack of in-process quality inspection during installation to detect sub-standard workmanship. Early detection is very important to enable the project to undertake corrective actions in a timely manner in order to minimise defects and reduce rectification work.
- Installation using unapproved materials is sometimes not detected until too late. The use of wrong materials in construction compromises quality standards. As it will be costly to dismantle work that has been completed, it is therefore important to carry out regular inspections on materials to ensure that only the correct and approved materials are used as per project specifications.
- Rectification of defects is not carried out in a timely manner. When defects are accumulate towards the end of project, extensive rectification works may lead to late handover.
- Lack of discipline to comply with ISO 9001 requirements on daily basis. As a result of this, many companies have had to spend additional time to prepare for ISO 9001 audits annually, especially on documentations such as Drawing Controls, Inspection and Test Records, etc.
- Lack of attention on quality-related infrastructure. Defects caused by damaged materials due to poor handling and storage, failed cube test due to poor preparation of sample cubes, or untraceable approved samples due to non-designated area for sample display.

The Sunway Construction Group of Companies (SunCon) recognises the above challenges and has introduced a system called Sunway Quality Merit System (SQMS) to address these issues. The SQMS systematically assesses projects on a regular basis to ensure that all our construction activities comply with ISO 9001 standards and inspections are carried out as per Approved Inspection and Test Plan. This ensures consistent good workmanship as per QLASSIC requirements.

INTRODUCTION TO SUNWAY QUALITY MERIT SYSTEM

Sunway Quality Merit System (SQMS) was first introduced in SunCon in the first quarter of 2014 to measure project quality performance in terms of system and product quality at every stage of construction. The assessment is based on the QLASSIC requirements for the measurement of Product Workmanship and ISO 9001 standards to measure the effectiveness of Inspection and Test, and Document/Record Management practices.

OBJECTIVES

The quality performance of all SunCon projects are benchmarked using SQMS scores. Due recognition is given to projects with high SQMS scores and their good practices are shared company-wide. Meanwhile, gaps in projects with low SQMS scores are identified for immediate improvement action. This is a continuous improvement process of measuring and adopting effective practices in alignment with organisation's objective to achieve the highest standard of quality and excellence.

The objectives of SQMS are:

- To benchmark all projects in SunCon
- To measure project quality performance systematically and objectively
- To standardise good practices across all projects in SunCon

- To create better awareness of product quality as per QLASSIC requirements among all staff and subcontractors
- To achieve a minimum 75% QLASSIC score for all SunCon projects

SQMS assessment is conducted on a monthly basis in all SunCon projects, ranging from high-rise to landed building projects, civil projects such as Bus Rapid Transit (BRT), Light Rail Transit (LRT) and Mass Rapid Transit (MRT) and geotechnical projects, covering all trades including piling, reinforced concrete, precast installation, steel structure, brickwork, plastering to painting, etc.

ASSESSMENT CATEGORIES

The SQMS score of a project is determined based on compliance with the following 5 main assessment categories:

A. Product Workmanship

The assessment methodology on product workmanship is conducted based on QLASSIC standards, using proper QLASSIC tools such as 1.2m spirit level, L-angle, tapping rod, steel gauge and measuring tape.

New assessment criteria have been established for trades not covered under QLASSIC standards such as brickwork, blockwork, premix, piling work, soil compaction, etc.

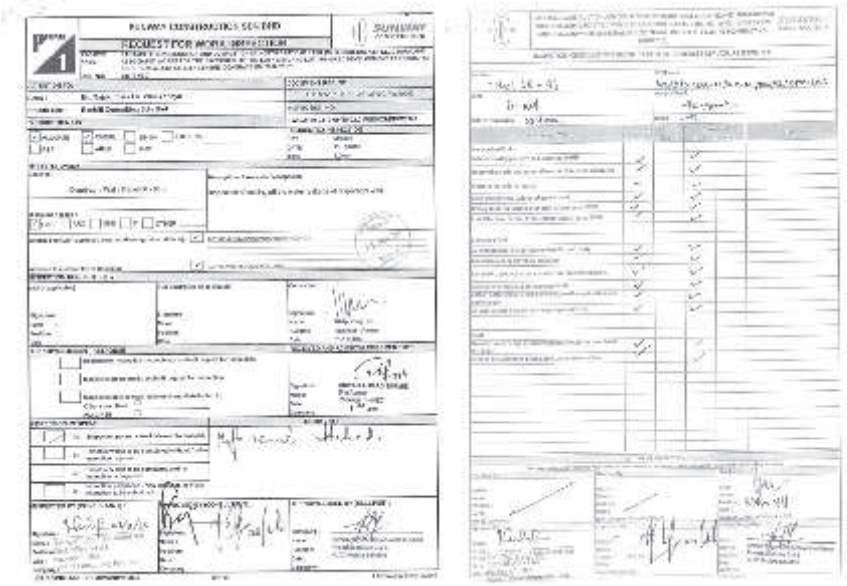
The assessors will also check whether the right materials are being used as per approval or specifications.

Product workmanship assessment using QLASSIC tools at Sunway Velocity Phase 2 Project

B. Inspection and Test

This criteria is used to measure whether a project's in-process inspection and test have been carried out accordingly at each stage of construction as per the approved Inspection and Test Plan.

Evidence of inspection and tests conducted is verified via the relevant Request For Work Inspection (RIN) and Inspection Checklists which must be duly signed by representatives of the Client and Consultants.



Evidence of Inspection and Test are conducted accordingly

YOUR
ENTERPRISE

YOUR
PROJECTS

ADVANCING YOUR PROJECTS BY

CONNECTING YOUR WORLD

You. Your Projects. And Your Enterprise.

Imagine everything in your world seamlessly connected.

Now, imagine aligning all the aspects of a successful infrastructure project simply and securely. And, integrating everyone and everything in a unified, common environment that advances your productivity, team collaboration, and project performance.

The **CONNECT** Edition enables you to deliver projects like never before.

YOU

GET CONNECTED

Bentley®

Bentley.com/CONNECT

C. Response to Client's Complaints

At SunCon, all complaints must be responded to in a timely manner. This measures the Project Team's response time to complaints received. The score is based on the percentage of Non-Conformance Report (NCR) closed at the time of assessment.

D. Quality Infrastructure

The setting-up and maintenance of quality-related infrastructures such as sample display area, cube collection area and material storage area to support in achieving good product quality are assessed in this criteria.

D.1 Designated Sample Display Area

Projects must provide a designated area for Sample Display where samples are segregated by trades, neatly arranged and labelled with approval status for easy reference and retrieval.

Samples are neatly displayed according to trades at Citrine Project, Sunway Iskandar

D.2 Cube Collection Area

A designated area for cube/mould storage and curing tank with clear signages and good housekeeping must be provided to facilitate the preparation and curing of concrete cube samples to minimise cube strength failure.

SunCon's standardised cube collection area at Sunway BRT Depot Project

D.3 Material Storage

Designated storage areas must be sufficiently protected to prevent damage to the materials, as the quality of final product will be affected if damaged materials are used for installation.

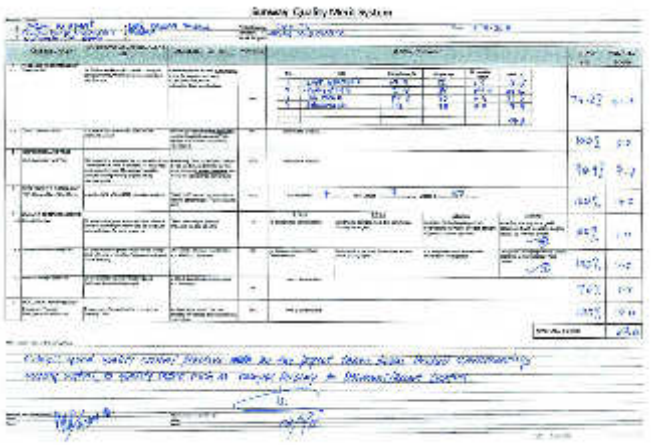
Door frames are stacked to prevent distortion and damage at Sunway Velocity Phase 2 Project

E. Document and Record Management

Documents and records must be systematically processed and stored as per ISO 9001 standards. This criteria evaluates adherence to document management procedures. Incoming documents are required to be dated and stamped with relevant controlled copy, registered and uploaded for dissemination to all staff electronically via SunCon Electronic Document Management System (eDMS).

Outgoing documents with acknowledgement copies will follow a similar procedure. All hardcopies and attachments are to be filed according to SunCon Project Filing Index (PFI) with standardised labels in a hanger or rack with signage to ensure traceability.

This also involves the checking of documents and records in both softcopy and hardcopy formats. The records in eDMS are checked against the hardcopy of Incoming and Outgoing Correspondences, Approved Construction and Shop Drawings, Site Memo, Request for Information (RFI), Request for Inspection (RIN) and Inspection Checklist, Safe Work Method Statement (SWMS), Technical Material Submission (TMS) and Minutes of Meetings to ensure there are no missing documents.



Weightages for each SQMS assessment categories

Each of the 5 categories listed above is weighted according to its impact on overall workmanship quality, with Product Workmanship carrying the highest weightage (60%) of the overall SQMS score.

Implementation of Sunway Quality Merit System

SQMS assessment is carried out on every SunCon project on a monthly basis by a team of SQMS assessors. Project score and findings are reported at the closing meeting for immediate action by the Project Team. A formal report is submitted to SunCon Management at the end of the assessment day.

SQMS TEAM

We have formed a dedicated team of full-time assessors as we recognise the importance for the SQMS assessment to be conducted independently and in a consistent manner. The team's findings must be objective, fair and acceptable by all Project Teams. The assessors must have a vast knowledge of QLASSIC requirements and ISO 9001 standards with related

hands-on experience. They are are also certified CIDB (Construction Industry Development Board) QLASSIC assessors. Our SQMS team consists of 4 members and are responsible for the following:

- Schedule monthly assessments
- Conduct assessments as per schedule
- Report findings
- Analyse scores and findings on a monthly and quarterly basis
- Review SQMS criteria for continuous improvement on a quarterly basis.

SCHEDULING

All projects are assessed on a monthly basis to ensure that project quality is maintained at all times. The monthly SQMS assessment dates are scheduled every quarter and sent out to the Project Teams accordingly. Confirmation is sent a week prior to the scheduled assessment date.

SITE ASSESSMENT

SQMS assessment is conducted at the project site to measure the product workmanship and at the site office to check the documentation and records management.

At the opening meeting, the Project Team briefs the SQMS Team on their work progress since the last assessment. Trades and locations are predetermined before the site walk to ensure impartiality of the sample selection.

Project Team representatives, relevant trade masters and subcontractors are required to join the assessment site walk. QLASSIC tools such as 1.2m spirit level, L-angle, tapping rod, steel gauge and measuring tape are used and the findings are recorded in the Trade Assessment Checklist. The type or brand of materials used for installation, conditions of materials storage area and other quality-related infrastructures are captured and recorded throughout the assessment.

Upon completion of product workmanship assessment at site, the documentation of Inspection and Test records of the trades at the location being assessed and approval record of the materials captured at site, are checked accordingly at the site office.

The overall project documents including incoming and outgoing correspondences, approved construction drawings and shop drawings, site memos, etc are checked for adherence to the documents and records management system.

REPORTING

A. Closing Meeting with Project Team

The project score and findings are reported at the closing meeting, which is attended by the Project Team comprising the Project Manager, Project Engineers, respective trade masters and subcontractors.

The SQMS Team's role is to highlight its findings with photographs of the observations made during the assessment. Areas for improvement are discussed for corrective action to be taken accordingly. The Project Manager is required to acknowledge the score and findings by signing the SQMS Report.

B. Project SQMS Report

At the end of the assessment day, the SQMS Team prepares an official report to formalise the project score and findings. This will be submitted to SunCon Management and circulated company wide via email for sharing purposes.

C. SQMS Monthly Report

At the end of each month, the SQMS Team analyses the project scores and findings to identify the following:

- Project Ranking from the Highest to the Lowest scorer
- Most Improved Project for the month
- Most Declined Project for the month

{In Archive} Sunway Quality Merit System(SQMS) Report for Parcel F

Rozilawati Kamarudin to: Yap Wei Len, Jimmy Lim Fang Liang, Liew Wei Leong, Shafiza BT Razali, Shahazrin Mohd Salleh, Mohd Hafizuddin Mohd Sani, Mohd Zayyani Mhd Fauzy, Mohd Fahmi Dasahi

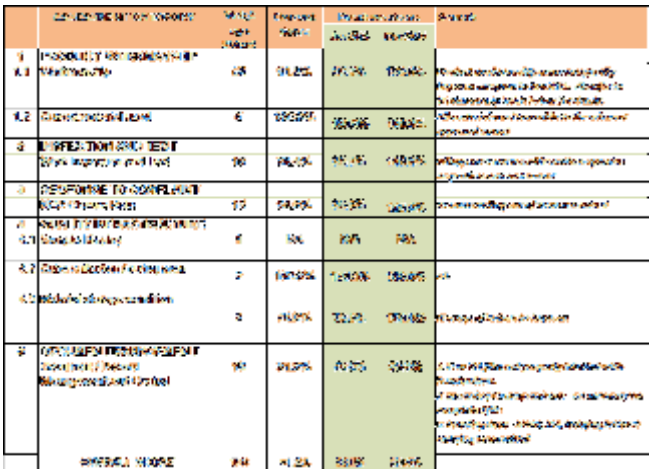
Cc: Kwan Foh Kwai, Chung Soo Kiong, Thomas Samuel, Richard Wong, Yabe, Mohd Faudzi Hanafiah, Azmi Mamat, Khairul Hanim Khairuddin, Mohd Afiq Mohd Yassin, ALL USERS SunCon

Archive: This message is being viewed in an archive.

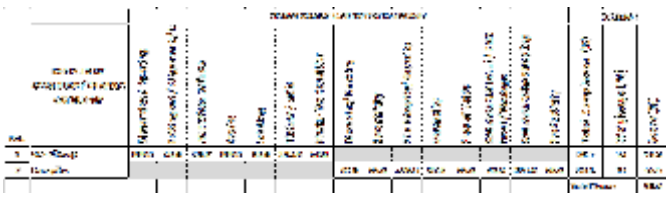
Dear Mr Yap W.L/ Ms Shafiza / Mr Shahazrin and All Parcel F project team members.

Thanks for your kind support and cooperation during today SQMS at your project.

1. For the record your SQMS overall score is **91.2%** and the detail score breakdown as per table below

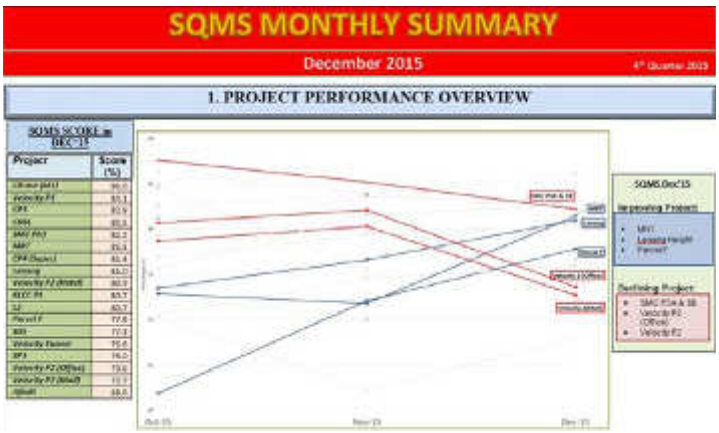


2. Project Performance on Product Workmanship



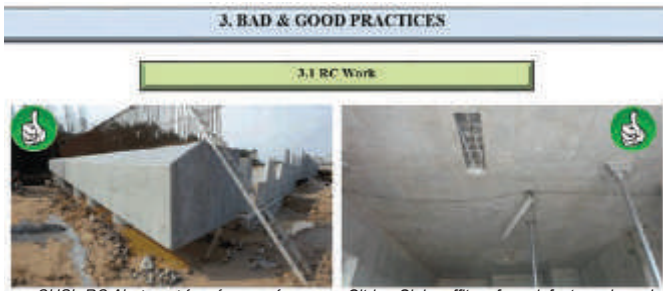
Observation:
For Borepiles, few of the piles assessed exceed 25% of concrete wastage. Pilecap works quality improved compared to last month, Good RC Surface finish however to further improved on the starter bars condition as found some of them corroded and contaminated with concrete as shown in the photos below,

Sample SQMS Report



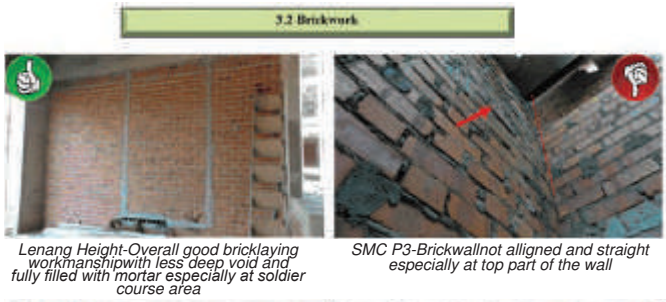
Analysis of most improved and declined projects in the month

Analysis of Trade Score by Projects



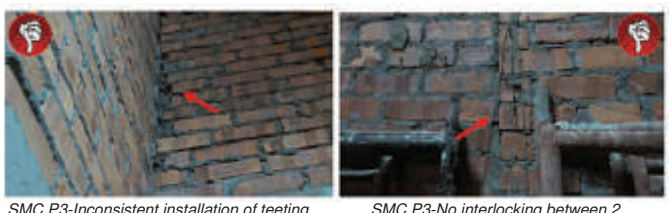
CHSL-RC Abutment free from surface defects and smooth jointing

Citrine-Slab soffit surface defects and good jointing with minimal grinding work required



Lenang Height-Overall good bricklaying workmanshipwith less deep void and fully filled with mortar especially at soldier course area

SMC P3-Brickwallnot alligned and straight especially at top part of the wall



SMC P3-Inconsistent installation of teeting and jointing not fully filled with mortar

SMC P3-No interlocking between 2 brickwalls

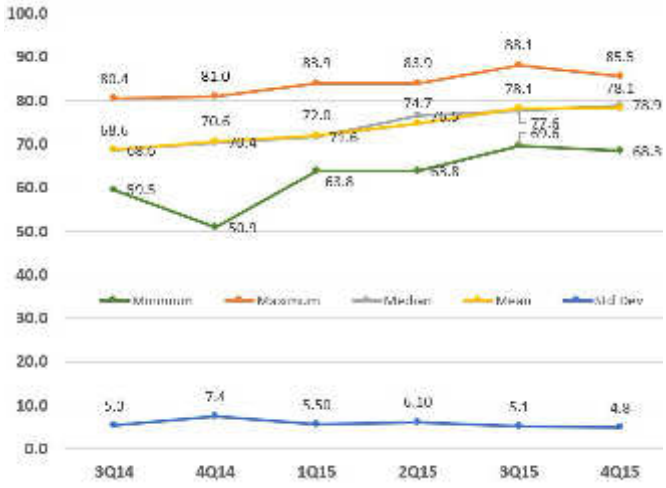
Good and bad practices observed during particular month

- Analysis of Trade Scores by Projects
- Analysis of Best and Worst Performing Subcontractors
- Good and Bad Practices Observed during the month

The Project Manager of the project with the lowest SQMS score is required to present his immediate action plan for improvement at the Monthly Management Meeting.

D. SQMS Quarterly Report

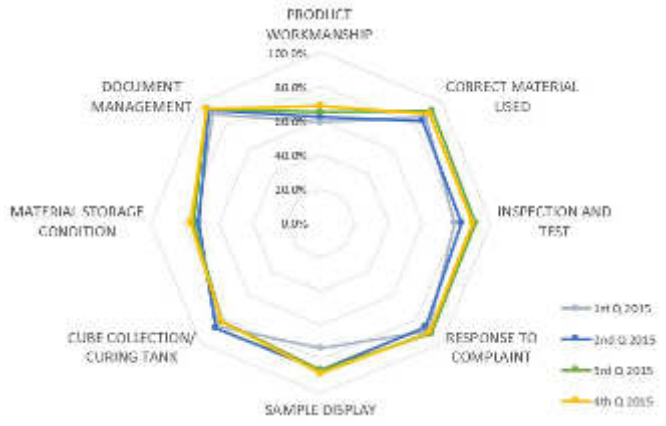
Every quarterly, the SQMS Team prepares a 3-month statistical data analysis report so that the SunCon TQM-COE Head of Department and Special Project Director can review the overall performance of project. This report presents the performance in the current quarter and will be compared against those of previous quarters. Critical areas that require improvement and root causes are identified to close the gap between the top and bottom performers.



Statistical analysis of Overall SQMS Score for project performance monitoring

The effectiveness of SQMS is reviewed on a quarterly basis and where necessary, to fine-tune the criteria and/or methodology for continued improvement. To-date, the SQMS has been improved and revised for the 7th time.

So far, SQMS has proved to be effective in improving the overall project quality and product workmanship in SunCon projects as shown in the diagram below.



SQMS score by categories in Year 2015

SQMS QUARTERLY WINNER AWARD

The project with the highest SQMS score for the quarter will be declared the "SQMS Quarterly Winner". The award is given to the winning project in recognition of its good and consistent project quality performance as well as to motivate other projects to improve their performances. This creates a healthy, competitive environment among the Project Teams and inevitably, dynamic cross-project learning takes place continuously to adopt good quality practices and avoid poor/bad practices.

The award consisting of a trophy and prize money is presented to the winning Project Team during an official award ceremony held at the winning project site.

This ceremony is attended by the SunCon Management and Project Managers to celebrate the achievement of the winning project, together with their subcontractors and workers.

This is followed by a Cross Learning Program (CLP) site walk which provides a good opportunity for project managers (or their representatives) from other projects to learn from the winning project. This is part of the continuous learning process and knowledge sharing of good practices within the SunCon Group of Companies.

CHALLENGES

Sunway Construction Group of companies (SunCon) has diversified projects such as building, civil and geotechnical. The initial challenge was for the SQMS Team to standardise quality measurement criteria to be applicable to this wide range of project types.

The product workmanship category in SQMS is based on QLASSIC standards which covers finishing trades such as plastering, painting and tiling. However, due to the vast nature of our construction works, we also faced the uphill task of formulating a set of product workmanship criteria to assess trades not covered by QLASSIC standards, such as brickwork, blockwork, premix, piling work, soil compaction, etc.

Many brainstorming sessions were held with the Heads of Operations to derive a mutually agreed quality measurement criteria and weightage to cover the various trades in this wide range of project types.

The full acceptance of these criteria is critical to get the necessary buy-in by all relevant parties.

BENEFITS

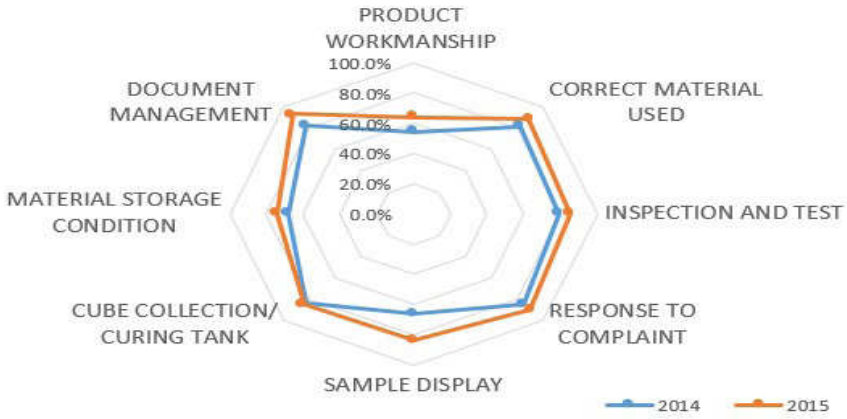
To date, Sunway Construction has implemented SQMS for more than two years. The full support by the SunCon Management enables us to inculcate the importance of product quality to Project Team members and subcontractors by increasing their awareness in the overall quality requirements and QLASSIC standards.

The benefits of SQMS are as listed below:

- Improves quality of product workmanship, from structural to architectural finishing works
- Creates an in-process inspection culture by Project Team members to identify and rectify defects immediately as work progresses

- Improves daily documentation which leads to good document and record management in compliance to ISO 9001 and our Quality, Environmental, Safety and Health (QESH) Management System
- Reduces the number of Non-Conformance Report (NCR) from Client and/or Consultants as workmanship quality and document management improve
- To date, the SunCon average QLASSIC score is 76%, which is above the national average of 70%

The marked improvement in the overall quality is shown in the figure below.



Improvement in project quality performance from Year 2014 to 2015

THE WAY FORWARD

Following the success of SQMS implementation, we extended the assessment initiatives to our subsidiary specialising in Mechanical, Electrical and Plumbing (MEP) works, from the second quarter of 2015.

With the incorporation of MEP works in SQMS, SunCon now has a complete set of project quality measurement for all trades, applicable to building, civil and geotechnical projects.

To further engage subcontractors in this initiative, SunCon implemented the "Best Subcontractor SQMS Quality Award", starting in the first quarter of 2016. This is to give due recognition to our subcontractors for their continuing efforts to play a pivotal role in improving project quality and to create a healthy competition environment among subcontractors to improve the quality of their respective trades. ■

IEM DIARY OF EVENTS

Title: IEM Mechanical & Electrical Forum (Full Flex) (Kuala Lumpur Convention Centre)

23 - 25 May 2016

Organised by : The Institution of Engineers, Malaysia
Time : 10.00 a.m. – 5.30 p.m.
CPD/PDP : Applying

Title: IEM Mechanical & Electrical Forum (Per Stream - Stream 1) (Kuala Lumpur Convention Centre)

23 - 25 May 2016

Organised by : The Institution of Engineers, Malaysia
Time : 10.00 a.m. – 5.30 p.m.
CPD/PDP : Applying

Title: IEM Mechanical & Electrical Forum (Per Stream - Stream 2) (Kuala Lumpur Convention Centre)

23 - 25 May 2016

Organised by : The Institution of Engineers, Malaysia
Time : 10.00 a.m. – 5.30 p.m.
CPD/PDP : Applying

Kindly note that the scheduled events below are subject to change. Please visit the IEM website at www.myiem.org.my for more information on the upcoming events.

The Rice Miller Hotel, Penang

Institute of Medical Research, Kuala Lumpur

Batu Kawa Bridge, Kuching

Police Quarters at Cheras, Bagan Luar & Sungei Way

MAPEI®

Systems for

- ✓ **Heritage Building Conservation**
- ✓ **Concrete Repair & Protection**
- ✓ **Structural Strengthening**
- ✓ **Waterproofing**

Parliament Building, Kuala Lumpur

General Hospital, Kuala Lumpur

St Mary's Cathedral, Kuala Lumpur

Sekolah Menengah Sains Miri, Sarawak

MAPEI Malaysia Sdn. Bhd. (231780-K)
Local HQ : Tel + (60) 3 7842 9098 - Fax + (60) 3 7842 6197
JB Office : Tel + (60) 7 595 3032 - Fax + (60) 7 595 3098
Penang Office : Tel + (60) 4 642 9098 - Fax + (60) 4 642 9097
Email : mapei@mapei.com.my **Website :** www.mapei.com.my

MAPEI®
TECHNOLOGY YOU CAN BUILD ON™

From Bullock Carting to Engineering

By Zoe Phoon

IEM shows its appreciation to its sole surviving co-founder, the 96 years young Ir. Dalip Singh, whose life and times have inspired many an engineer to push the envelope.

It was both a pleasure and a pleasant surprise to meet up with Ir. Dalip Singh s/o Bahadur Singh in person. It was a pleasure because he is the only surviving co-founder of the Institution of Engineers, Malaysia (IEM) that was set up in 1959, nearly six decades ago. If its members were highly regarded even then, they are more so around the world today.

It was also a pleasant surprise because Ir. Dalip was in high spirits despite having suffered three broken ribs the day before the interview in February at his high rise residence in Bangsar, Kuala Lumpur. He appeared none the worse, not even a grimace on his face, as he sat upright, ready to begin the Q&A session. He even cracked golfing jokes, loud and clear, despite the medical condition.

"I tried to hold on to a railing to steady myself, not realising it was wobbly. So I fell," he said, recalling the incident that happened on an outing to the commercial section of Bangsar. "The doctor told me I had broken three ribs."

After the interview, he walked cautiously to the centre of the living area for a group photo session with some of his family members, three IEM officers who were paying him a courtesy call, and me.

INTERESTING CAREER PATH

Imagine how interesting it was to chat with a 96-year-young and long retired, very dedicated mechanical engineer, about how things were back then, when our nation was Malaya and before we gained independence from British rule in 1957.

Ir. Dalip's father came to Malaya from India and started bullock carting and cattle rearing enterprises. In fact, it was the Sikhs who pioneered the bullock carting industry here in the 1900s. Ir. Dalip was born here in 1919, a year he describes as an "auspicious figure".

He had primary to secondary education at the Anglo Chinese School in Ipoh, Perak. In 1935, he passed the Senior Cambridge Examination with First Grade, with exemptions in London Matric.

He recalled that it was "the big depression" at that time and jobs were hard to come by. Teachers in private schools were paid $11 a month while clerks in government service started at $26 a month. After Ir. Dalip left school in 1935, he worked at various odd jobs and was even a watchman once. He also had his own bullock carting business which he operated successfully until June 1936.

He was selected for a clerical post in the Perak State Clerical Service but he declined and joined the Central Railway Workshop in Sentul, Kuala Lumpur, as an apprentice in July with a daily wage of 72 cents. "I got the technical job but my selection was overruled and I was replaced by another candidate," he said.

Ir. Dalip Singh

At around that time, he joined the Gurdwara Central Workshops as a member and participated in all its activities, never missing the Sunday "diwan" and other "jorr mela".

In 1937, he applied to the Railway Department for the post of technical apprentice. He was the only one selected for mechanical engineering from the large number of applicants. He later attended the Technical School as it was the only institution for all branches of engineering in Malaya then. He graduated with an upper class diploma in mechanical engineering and was promoted to technical assistant.

In January 1942, the Japanese Imperial Army occupied KL, so Ir. Dalip did not report for the technical assistant post. Instead, he and some colleagues helped Indian soldiers and prisoners of war collect medicines and food. Together with a few friends, he also set up a wheat-grinding mill to make atta flour for the soldiers in the compound of the Methodist Boys School near the railway quarters in Jalan Sentul.

That same year, he and a few friends from Sentul joined the First Formation of the Indian National Army (INA) as a cadet officer and was given proper military training. He later left the camp "when General Mohan Singh, who had organised the INA, did not agree with the plans of the Japanese and so was put under house arrest".

He returned to his pre-war post, this time as technical assistant to a Japanese engineer at the Sentul Railway Workshop. He built a good relationship with the engineer by doing all the calculations of the axles and springs on the wagons brought over from Java, Indonesia, "to the satisfaction" of the engineer. He encountered another stroke of "good luck" as the Japanese engineer was a rugby player and both of them played on the same team.

In 1943, he married Charanjit Kaur in Kuala Kangsar, Perak. The couple has five children who are now an economist, an arts graduate in English, a scientist, a doctor and a lawyer.

When You Think Of Water Reservoir
Think MALSTORE

A Product That Is Designed To Be Durable,
Reliable, Competitive And Innovated
Towards Maintenance Free Using
Proven Materials And Technology

MALSTORE SDN BHD (576477-H)
No. 3D, Jalan PJS 1/48, Taman Petaling Utama, 46150
Petaling Jaya, Selangor
Tel : 03-7770 6428 Fax : 03-7770 6419
Email : enquiry@malstore.com.my

BUATAN MALAYSIA

SPAN

nqa. ISO 9001 Registered

UKAS QUALITY MANAGEMENT 015

SIRIM QAS INTERNATIONAL

In early 1945, he was arrested by the Japanese Kempeitai (military police force) along with four other Railway colleagues and two from the Telecom workshop. They were accused of being "British spies" and were interrogated and tortured with beatings and water treatment.

"After the interrogations were completed, we were sent to the detention ward in Pudu Prison but we were later acquitted and discharged in June that year," he said. The Japanese surrendered a few months later that same year.

Ir. Dalip returned to his technical assistant job. Between 1947 and 1948, the government Malayanised senior positions in various departments and started training officers, engineers, surveyors and so forth to take over posts held by expatriate officers who were mostly British. As there were no suitable facilities in Malaya then for such training, especially in engineering, most of the locals had to be sent to the United Kingdom.

For the first batch, Ir. Dalip said the Railway Department handpicked two officers, one each for civil engineering and mechanical engineering. It was only in the second batch that applications were invited and a properly constituted board assembled to select suitable candidates. Fifteen applicants were shortlisted for mechanical engineering, including Ir. Dalip. Later, a Malay candidate was also picked, making two for mechanical engineering. They had to pass part 1 of the examination before they were sent overseas. Both were seconded full time from 1950 to the Technical College (now Universiti Teknologi Malaysia) which provided the facilities. They sat for the part 1 exam in 1951 and passed.

In 1952, Ir. Dalip left for England where he did practical training at British Railways and passed the part 2 and part 3 exams. He returned to Malaya in 1954 and was posted to Sentul Works as works assistant. He gradually rose from this position to district locomotive assistant, and to district locomotive superintendent (DLS) in charge of all locomotive depots in the country.

When he was the DLS in Gemas, Negri Sembilan, there was an association of engineers when Mr. J. Sharples was chairman of the National Electricity Board or NEB (Tenaga Nasional Bhd was formed in 1990 to succeed NEB). Mr. Sharples invited him to join the association as a member.

"One of the NEB association's rules was that you couldn't qualify for a superscale appointment if you are not a member of either an institution of mechanical/civil/electrical engineers in UK," said Ir. Dalip. That spurred him and a few friends including Raja Zainal Raja Suleiman and Mr. Lau Foo San, to set up a similar institution for engineers in Malaya.

"However, to be a member of this local organisation which we planned to form, you needn't be a member of any of the institutions of engineers in UK," he said.

Later, Ir. Dalip was made production engineer and in 1958, he was promoted to works manager of Sentul Works which had 2,000 employees and a budget of about RM20 million. He was the first local to take charge of the large sophisticated engineering workshops, the only one in the country at that time.

In 1962, he was promoted to chief mechanical engineer, overseeing a workforce of 5,000 and an annual budget of RM40 million. He served in this position until 1971.

In 1962, the Railway Workers' went on its biggest strike and a train was derailed north of the Johor Baru Railway Station. The driver of the breakdown crane was on strike and

Showing UN Economic Commission for Asia and the Far East (ECAFE) members Malayan Railway Locomotives 20 watt Diesel Electrics that gave balancing problems earlier on

that made clearing the track almost impossible. So Ir. Dalip rolled up his sleeves and personally operated the 40-ton steam crane, a task he had never done before. He managed to clear the track. This was something that no other head of department would have undertaken.

In 1971, he was promoted to deputy general manager (engineering and operations) as the number 2 man to the general manager. He retired in April 1974. He recalled an incident that happened when he was about to retire. Someone was asked to "get him for a job" in a neighbouring country but Ir. Dalip's reply was: "I have served for so long. Now I want to serve my family."

He said he refused the job despite being offered "dangling carrots" such as a house in an upmarket location and a lot of other perks. "I just refused. That was the biggest thing I'd ever done in my working life. I didn't comply with the organisation's request because I felt that it would have given me a bad name," he said.

Outside of work, Ir. Dalip said he was glad that his connection with the Gurdwara Central Workshops, now known as the Sikh Temple Sentul, spanned more than 60 years. He also spoke of his love for golf. He said: "It's a wonderful game. You make a lot of friends and it's a great opportunity to crack jokes. My sons are good golfers too as they started young. I was involved in the nine-hole golf course on the Sentul site, now occupied by Kuala Lumpur Performing Arts Centre (KLPaC)." He also spends a lot of time reading, especially books on history.

Outside of Sentul Works, he was asked to teach final-year mechanical engineering students at University of Malaya. He was paid $30 an hour then.

"The way I wanted to teach, I had to prepare well for the lectures. That required me to read seven to eight books for one subject alone. I also set questions for the examinations and I refused to lower the standards," he said. "All papers set as well as the answer papers marked by me were scrutinised very closely by an external examiner from UK."

Ir. Dalip shared some snippets of life when Malaysia was Malaya, a time when Malayan workers could turn blue in the face in their attempts to tell their expatriate bosses that they were right based on meticulous calculations and all. Yet, the bosses refused to accept the facts. He too encountered all that but luckily, those even higher up finally acknowledged his thorough, meticulous work. He said: "That saved my career".

So it would seem that Ir. Dalip, like pioneers in most endeavours, had "done it all". He described his work life as "interesting" at a time when "Mat Salleh expats were in control".

The Champion of Quality & Safety

MALAYSIA'S LEADING CERTIFICATION, INSPECTION AND TESTING BODY

Management System Certification Schemes And Related Schemes

ISO 9001 - Quality Management System Certification

ISO/TS 16949 - Quality Management System Certification for Automotive Sector

ISO 13485 - Quality Management System Certification for Medical Devices

MS 1900 - Quality Management System from Islamic Perspectives Certification

ISO 14001 - Environmental Management System Certification

OHSAS 18001 - Occupational Health and Safety Management System Certification

MS 1722 - Occupational Health and Safety Management System Certification

ISO/IEC 27001 - Information Security Management System (ISMS) Certification

ISO/IEC 20000-1 - IT Service Management System Certification

MS 1480 - Hazard Analysis and Critical Control Point (HACCP) Certification

ISO 22000 - Food Safety Management System Certification

FSSC 22000 - Food Safety System Certification

PAS 223 - Food Safety Requirements for Food Packaging

MS 1514 - Good Manufacturing Practice (GMP) Certification

Carbon Footprint Certification

Forest Management Certification

Chain-of-Custody Certification for forest and forest-based products

Validation and Verification of Clean Development Mechanism (CDM) / Verified Carbon Standard (VCS) / Gold Standard (GS) Projects

Roundtable on Sustainable Palm Oil (RSPO) P&C Certification

Roundtable on Sustainable Palm Oil (RSPO) Supply Chain Certification

Malaysian Sustainable Palm Oil (MSPO) Certification

National Mark of MALAYSIAN BRAND Certification

1-InnoCERT Programme

ISO 50001 - Energy Management System Certification

ISO 28000 - Supply Chain Security Management System Certification

ISO 39001 - Road Traffic Safety Management System Certification

ISO 22301 - Business Continuity Management System Certification

ISO 55001 – Asset Management System Certification

IQNet ISO 22301– Business Continuity Management System Certification

IQNet SA8000 - Social Accountability Certification

IQNet Business Social Compliance Initiative (BSCI) Assessment Services

Third-party Verification of Sustainability Reports

Product Certification Schemes And Related Services

Product Certification

SIRIM Eco-Labelling

Product Listing

Batch Certification

IECEE CB Scheme

IECEx Certified Service Facilities Scheme

IECEx Certification of Personnel Competence for Explosive Atmospheres

Electromagnetic Compatibility (EMC) Certification

Type Approval for Communications and Multimedia Products

Registration of Manufacturer / Assembler / Repair Centre / Service Centre for Communications and Multimedia Products

Issuance of Import Permit for Communications and Multimedia Products

Issuance of Certification / SIRIM Label for Communications and Multimedia Products

Issuance of Certificate of Approval for the Importation of Aluminium, Iron and Steel Products and Materials (for Non-construction Use)

Modular Coordination Certification

Green Diesel Engine Verification

NGV Workshop Certification

UN Marking for Packaging for Dangerous Goods

Type Approval (E Marking) for Automotive Components

Ready-Mixed Concrete Certification

Photovoltaic Module Certification

Welder Certification

Installer of Pressurized Hot Work Enclosure (PHWE) Certification

NANO *Verify* Programme

Testing Services

Chemical and Consumer Products

Civil and Construction Materials

Electrical and Electronics

Energy Efficiency for Electrical Appliances

Photometry for Lighting Products

Fire Protection

Mechanical and Automotive

Plastics and Composite Materials

Radio Frequency (RF) and Electromagnetic Compatibility (EMC)

Consignment Services for Imported Electrical and Electronic Products

Inspection Services

Engineering Inspection

Inspection Services for Foreign Certification Bodies

SIRIM QAS INTERNATIONAL

For more information, contact us at:

SIRIM QAS International Sdn. Bhd.
Marketing and Branding Section
Building 4, SIRIM Complex
No.1, Persiaran Dato' Menteri,
Section 2, P.O. Box 7035
40700, Shah Alam
Selangor Darul Ehsan, Malaysia.

Tel : 603-5544 6402/6404
Fax : 603-5544 6787
Email : qas_marketing@sirim.my
Website : www.sirim-qas.com.my

ENABLING BUSINESSES. ENHANCING LIVES

20th Anniversary SIRIM QAS INTERNATIONAL

Showing UN Economic Commission for Asia and the Far East (ECAFE) members the new methods of metal spraying in Sentul Railway Workshops to build up worn out piston rods

He relates this incident: "We bought steam locomotives of high horsepower but these gave us a lot of trouble, one by one. I wrote letters to the manufacturer with regards the problems but the British expat in charge didn't send my letters out. The troubles continued and we were suffering. I investigated the problems and finally, managed to convince him that the locomotives were not compatible with the work we were doing before he finally sent the letters out."

He also recalled how, at a conference in the UK in 1962, he proved to the people concerned that the locomotives were problematic but they wouldn't accept any of it. "I ended up telling them `the locomotives are yours, but the problems are mine!'. It was only later that they accepted what we'd proved and reimbursed us £1,000 per locomotive and £1,500 per locomotive for the modifications. We were confident we could do it. That was a big feather in my cap," he said with pride.

But despite all this, he said, many local engineers in Malaya and their expat counterparts became good friends.

ENGINEERING IN MALAYA THROUGH THE EYES OF OUR 1ST PRIME MINISTER, TUNKU ABDUL RAHMAN PUTRA AL HAJ

Here are glimpses into the state of engineering in the country in the early years and how far it has since advanced. IEM was formed in 1959 and the inaugural dinner was held in Selangor Club in Kuala Lumpur with the first Prime Minister, Tunku Abdul Rahman Putra Al Haj, as guest of honour.

In his speech, Tunku said that "wherever you look, large new buildings loom before you. New roads, canals and bridges spring into being; everywhere engineering skills are displayed with a high standard of work".

He also spoke of being the guest of honour at a private luncheon in London, hosted by the three combined Institutions of Civil, Mechanical and Electrical Engineers. "They invited me to this luncheon because each of the institutions took a deep interest in what Malaya was doing and building and in the general trend of development projects, particularly on the technical side," said Tunku.

Back home, giving yet another glimpse into the then newly formed IEM, the Prime Minister related how "we have now built a small house at the end of a new road which we surveyed and constructed ourselves. The house is not big but at least we have our own and the standard of construction is by no means low. In other words, we now have a national institution, the entry qualification to which is no lower than the standard accepted in this country at the present time. The membership stands at 60".

Members of the first IEM council were Tuan Hj. Yusoff Ibrahim (President), Raja Zainal Raja Suleiman (Vice President), Lau Foo San (Honorary Secretary) and Aw Yang Hong Chiew (Honorary Treasurer). Ir. Dalip, who represented the mechanical engineers, was one of the council members. Others included Chew Kam Pok, Chew Kit Lin, Chin Fung Kee and Tong Kay Chor.

Today, according to IEM President Dato' Ir. Lim Chow Hock, the Institution, which has been holding the fort for Malaysian engineers for more than half a century, has made a name for its 40,208 members not just within Southeast Asia but also around the world. As always, IEM strives to ensure that the education, training and qualifying standard for professional engineers are on par with the world's best.

As the saying goes, a journey of a thousand miles begins with a single step. For IEM, that single step began around the time that Malaya gained independence from the British in 1957. Its co-founders, including Ir. Dalip, came up with the idea to establish an institution for engineers to promote and advance the science and profession of engineering in all of its disciplines in the country, similar to what the engineers had done in the UK. The rest, as they say, is IEM's history – and Dalip's history – still being written. ■

ERRATA

Error on **FEATURE – IEM Employment Survey 2014 Report** published on page 18 to page 24 in ***JURUTERA March 2016*** issue.

We wish to attach the corrected Figure 6 and the missing captions from Figure 7 to Figure 22.

Figure 6: Current Employment Sector

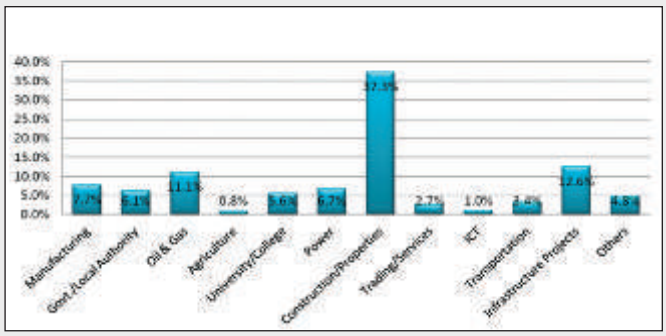


Figure 7: Total response = 99.5%

Figure 8: Reasons of Choosing Engineering

Figure 9: Annual Remuneration for Year 2002, 2004, 2007, 2008 and 2014

Figure 10: Annual Remuneration to Years of Experience by Gender for Working Engineers/Corporate Members

Figure 11: Annual Remuneration to Years of Experience by Qualification for Working Engineers/Corporate Members

Figure 12: Annual Remuneration to Years of Experience by Qualification for Graduate Engineers

Figure 13: Annual Remuneration to Years of Experience by Employment Status for Working Engineers/Corporate Members

Figure 14: Annual Remuneration to Years of Experience by Employment Status for Graduate Engineers

Figure 15: Annual Remuneration to Years of Experience by Location of Employment for Working Engineers/Corporate Members

Figure 16: Annual Remuneration to Years of Experience by Location of Employment Graduate Engineers

Figure 17: Response to Progression Rate of Career

Figure 19: Response to Universities Programme

Figure 20: Green Building Involvement/Contribution and Awareness

Figure 21: Achievement of the Purposed Green Technology

Figure 22: Green Building Technology

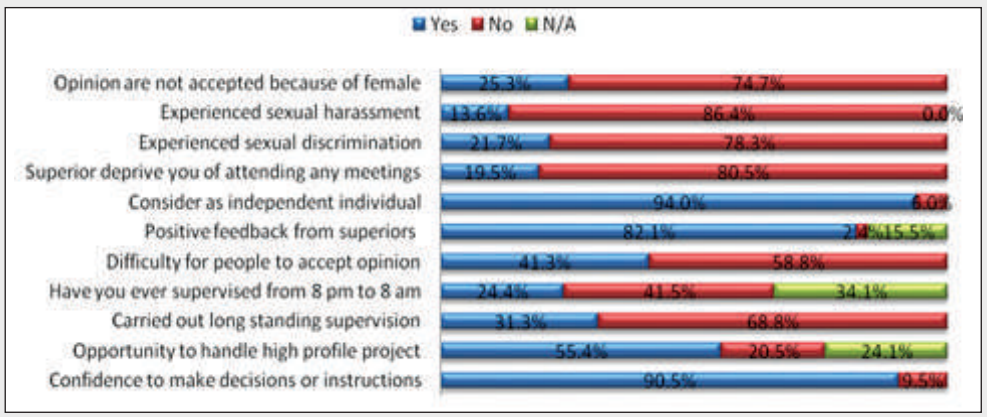


Figure 18: Discrimination to Woman Engineers

The error is much regretted.

STAAD.Pro V8*i*

Complete Structural Engineering Solution

•Is your design software providing too heavy a reinforcement?

•Having trouble with designing transfer level or columns accurately?

•Having trouble with complicated geometry or shear wall design?

•Need a good wind-load, earthquake, or high end analysis software?

•Spending too much time on running analysis for large structures?

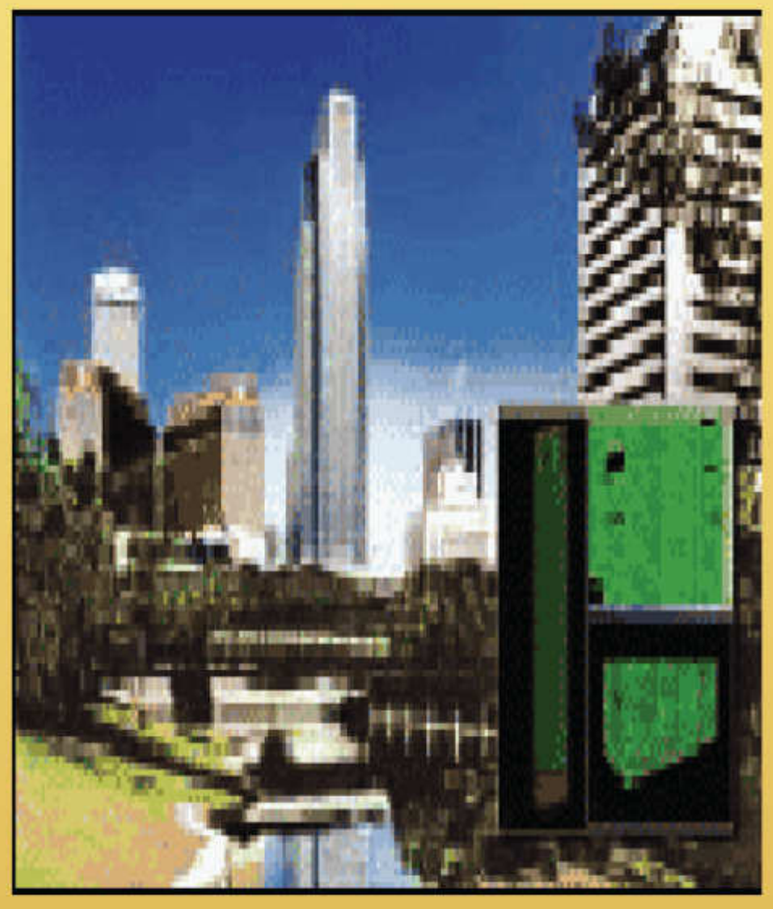
STAAD Pro V8i is the answer to almost all your current limitations and ideal for value engineering and composite structures.

• Design inclined members, steel, concrete, beams, columns, slabs, shear walls, foundations, and connections in one integrated environment.

•Architectural import using .dwg files possible using STAAD ICDS.

STAAD.*Pro* is used everyday for the following :

High-rise Buildings *Physical member design option (rigid link); steel structures (industrial structures);* ***Bridges*** *(supports BS 5400 part II, BD 37 and BD 21) using Staad.beava;* ***Foundations*** *and* ***Sub-structures****; Tanks/water retaining structures (Supports BS 8007 as an optional code);* ***Marine structures*** *and* ***Off shore structures*** *(Supports API code). Supports over 68 (optional) design codes including EC-2, EC-3, EC-5, EC-8 and EC-3 composite.* ***Comprehensive connection design*** *with dxf output*



VR-CAM Technologies Sdn Bhd

No 79-1A, OG Business Park, Tmn Tan Yew Lai, 58200 Kuala Lumpur.

TEL: (03)7782 8898,7785 8898, FAX: (03)7782 6898

WEB: http://www.vrctech.com, Email: info@vrctech.com

IEM Forums at ASEAN's Mechanical and Electrical Engineering Expo

BY MECHANICAL ENGINEERING TECHNICAL DIVISION

IEM is collaborating with United Business Media Sdn. Bhd. (UBM) to organise forums during the three-day ASEAN Mechanical & Electrical (M&E) Expo. Regarded as a key highlight of the event, the daily forums will cover current topics of interest to engineers. According to Ir. Dr Cheong Thiam Fook, from IEM's Mechanical Engineering Technical Division, the forum offers excellent opportunities for engineers and other professionals to start talking about technological developments and innovations in the industry.

"They may not see these developments yet but through the forum, we are creating a platform for them to challenge their thought process. We also want to challenge and expose the engineers to the various opportunities that will be here in a short time due to the rapid development in technology," he says.

More than 20 local and international experts will present and discuss the best practices in the power and electrical sector, green technology, renewable energy and HVACR, particularly the continuation of the ASHRAE Conference and IEM's Forum.

Ir. Loo Chee Kin, the Organising Chairman, says the forum will have two streams that align three titles under each stream. Stream 1 will cover: (1) Green Energy and Sustainability (2) Power and (3) REVAC. Topics under Green Energy and Sustainability include 'Why Green Energy and Sustainability' and 'Hydrocarbon as Greener and More Efficient Refrigerants'.

From left: UBM Project Manager Chean Fei Ong, Ir. Dr Cheong, Ghandi and Ir. Loo

Part of the exhibition floor at ASEAN M&E 2014

He says that traditional refrigerants have had adverse effects on the environment with rather high global warming potential, even though the use of refrigerants with ozone depletion potential, is restricted. He adds that a group of industry players in Malaysia is promoting gases that are not man-made but rather, are natural occurring gases, such as methane and propane. Malaysia is now working on developing a Malaysian Standard (MS) to address the safe

use of these gases, which will be highlighted at one of the sessions.

The forum on Power will discuss, among others, 'Renewable Energy (RE) Policy and the Latest Development of RE in Malaysia' and the 'Latest Electrical Installations Requirements'. REVAC forum will include topics such as 'Commissioning Process for Smoke' and 'Healthcare Ventilation System Requirements and Challenges'.

Elaborating on Stream 2, Ir. Loo says the three topics are 'Development in Codes and Standards', 'M&E Infrastructure' and the most important area is 'Safety and Risk Control'. He says: "At times, engineers are at fault because they may not fully understand safety requirements. For example, there may be lifts and escalators in shopping complexes that are not fully compliant to current safety standards. That's why one of the topics to be covered under Safety and Risk Control is Lift and Escalator Code in Malaysia."

Ir. Dr Cheong says engineers attending the forum can earn points under the Continuing Professional Development (CPD) Accreditation. He says the IEM forum at ASEAN M&E 2016 is designed to foster closer working relationships among engineers and to raise awareness among its members of the latest developments in technology, issues and legislation related to engineering including mechanical and electrical.

He adds that partnerships between engineers and the M&E industry can materialise at the IEM Forum and the exhibition halls. IEM's participation in the event also helps to pave the way for all engineers to engage with ASEAN engineering associations which will allow the engineers to excel both locally and internationally.

THE ASEAN M&E EXPO

The M&E Expo 2016, Southeast Asia's biggest international building services and electrical engineering exhibition, in Kuala Lumpur will have three power-packed shows under one roof. These are the TENAGA Expo & Forum (Southeast Asia's Premier Power & Electrical Industry Show), REVAC Expo & Forum (Southeast Asia's International Refrigeration, Ventilation & Air-conditioning Event), and Green Energy Asia (Southeast Asia's International Green Energy & Conference).

To be held at Kuala Lumpur Convention Centre (KLCC) on 23-25 May, the Expo will attract 10,500 trade professionals from around the region. Over 350 exhibitors have confirmed participation, with displays to be spread over 10,000 square metres of the entire ground exhibition halls of KLCC.

The event, which is the sixth edition of the ASEAN M&E Expo, is an excellent platform for engineers and other trade professionals to keep abreast with industry developments and innovations as well as to network, conduct business and forge alliances. Held biennially in Kuala Lumpur with complementary M&E shows in Indonesia and Vietnam, the expo is organised by United Business Media (M) Sdn. Bhd. (UBM). This year's edition is endorsed by the Malaysia External Trade Development Corporation (MATRADE) and supported by the Ministry of Energy, Green Technology and Water (Kementerian Tenaga, Teknologi Hijau dan Air or KeTTHA), Construction Industry Development Board

(CIDB), the Institution of Engineers, Malaysia (IEM), Malaysian Air-Conditioning & Refrigeration Association (MACRA) and The Electrical and Electronic Association of Malaysia (TEEAM). The host utility is Tenaga Nasional Berhad while the 'Co-located Conference' is the Malaysian Chapter of the American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE).

NEW CHALLENGES FOR M&E ENGINEERING

UBM Managing Director (ASEAN Business) M. Ghandi says the ASEAN M&E Expo is where engineers in the ASEAN region can network and share ideas that relate to M&E products and services.

"The main objective of this year's show is for engineers to challenge the status quo in the practice of M&E engineering. One of the current challenges faced by engineers relates to the changing dimensions of energy itself," he says, adding that there is also a major change in the dimensions globally. He explains that building designs are no longer done based on the way energy and electricity are transmitted and distributed. These designs as well as the way business in the world is conducted are also affected by the ability of consumers to produce energy themselves using different sources, such as solar energy and geothermal.

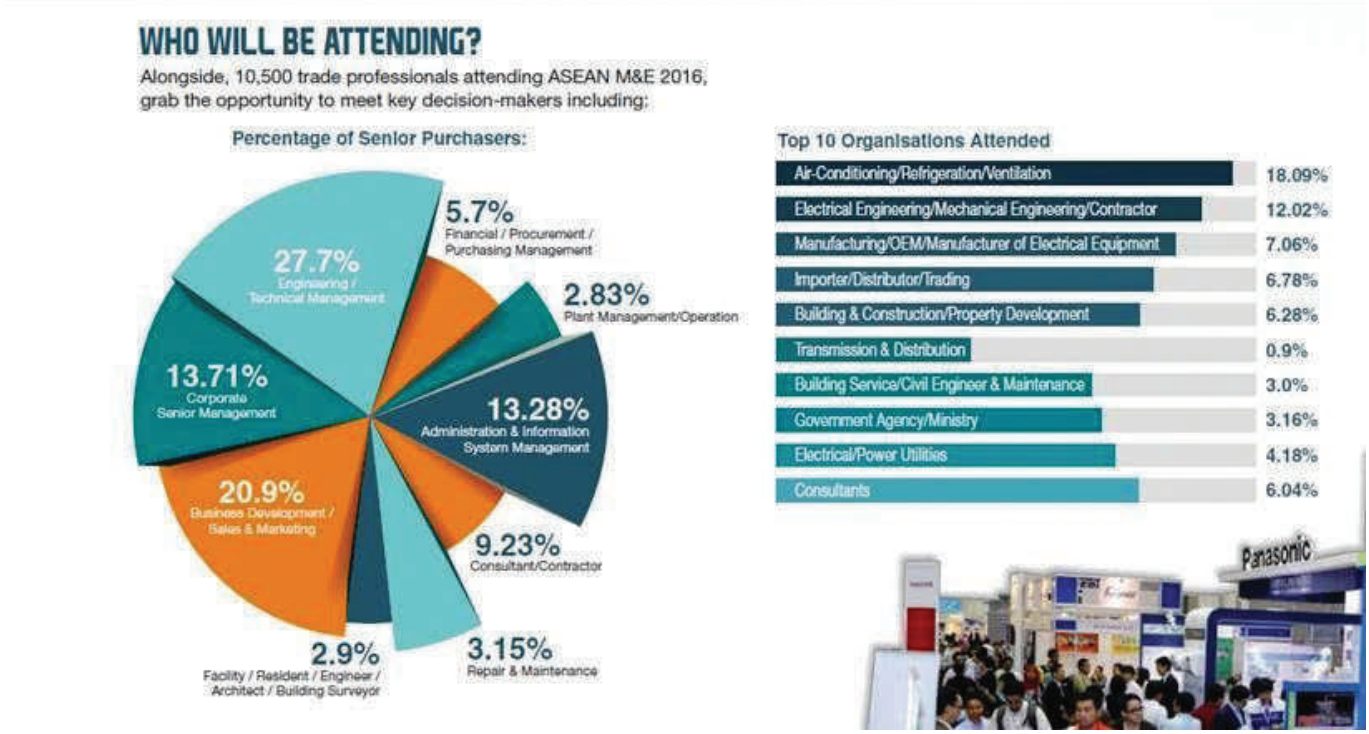
"An important dimension already taking shape is power storage. Last year, US-based company Tesla Motors ran pilot demonstrations of Power wall, a rechargeable lithium-ion battery for home use. It stores electricity for domestic use, and provides backup electricity supply. It is energy storage for a sustainable home and offers independence from the conventional utility grid," says Ghandi.

Tesla's creation of low-cost home battery pack, expected to hit the market next year, has helped raise public awareness of a field that is booming with innovation and the potential of billion-dollar global investment.

Such development, continues Ghandi, will challenge the way that Malaysia and all other ASEAN member countries manage the future of M&E, particularly where renewable energy and energy savings are concerned.

"Some utility companies may even close business. For example, RWE AG, the largest utility company in Germany has seen their business dropping to nearly 80% in the last five years when consumers started to produce energy themselves. Another German utility company, E.ON SE, is shrinking its core conventional and unprofitable power generation business and will instead focus on renewable energy, and building its distribution network and providing customer solutions," he says.

The Deputy Chairman of IEM Mechanical Engineering Technical Division (METD), Ir. Loo Chee Kin, says Malaysia aims to increase the use of renewable energy to 30% by 2020 under the ASEAN Ministers of Energy Meeting agenda in 2014. The share of renewable energy (RE) in Malaysia is currently less than 15%. He says one of the measures being looked into by the government is the use of net energy meters as an alternative incentive to meet the increase capacity for RE capacity in Malaysia. Net metering allows anyone with



a connection to the electricity grid to sell self-generated electricity to the grid and to claim back credits on their electricity bill. This holds well for small-scale solar generators on roof tops, as the generation will be near the load.

Another development in power generation is the proposed plan to have a single ASEAN power grid to connect all the power supplies of ASEAN countries. Ghandi says while having this grid is possible, it will involve huge investment. Ir. Loo adds that currently Malaysia has a limited grid connection with Thailand and Singapore. "It is not so much a grid that runs 24/7 but, rather it's for Malaysia and Thailand to share power with each other during the different power peak periods," he says. ■

IEM DIARY OF EVENTS

Title: IEM Mechanical & Electrical Forum (Green Energy & Sustainable) (Kuala Lumpur Convention Centre)

23 May 2016

Organised by : The Institution of Engineers, Malaysia
Time : 10.00 a.m. – 5.30 p.m.
CPD/PDP : Applying

Title: IEM Mechanical & Electrical Forum (Development in Code and Standards) (Kuala Lumpur Convention Centre)

23 May 2016

Organised by : The Institution of Engineers, Malaysia
Time : 10.00 a.m. – 5.30 p.m.
CPD/PDP : Applying

Title: IEM Mechanical & Electrical Forum (Power) (Kuala Lumpur Convention Centre)

24 May 2016

Organised by : The Institution of Engineers, Malaysia
Time : 10.00 a.m. – 5.30 p.m.
CPD/PDP : Applying

Title: IEM Mechanical & Electrical Forum (M&E Infrastructure) (Kuala Lumpur Convention Centre)

24 May 2016

Organised by : The Institution of Engineers, Malaysia
Time : 10.00 a.m. – 5.30 p.m.
CPD/PDP : Applying

Title: IEM Mechanical & Electrical Forum (REVAC) (Kuala Lumpur Convention Centre)

25 May 2016

Organised by : The Institution of Engineers, Malaysia
Time : 10.00 a.m. – 5.30 p.m.
CPD/PDP : Applying

Title: IEM Mechanical & Electrical Forum (Safety and Risk Control) (Kuala Lumpur Convention Centre)

25 May 2016

Organised by : The Institution of Engineers, Malaysia
Time : 10.00 a.m. – 5.30 p.m.
CPD/PDP : Applying

Kindly note that the scheduled events below are subject to change. Please visit the IEM website at www.myiem.org.my for more information on the upcoming events.

POWER-GEN ASIA | RENEWABLE ENERGY WORLD CONFERENCE & EXPO –ASIA– | POWER-GEN ASIA FINANCIAL FORUM

ASIA POWER WEEK

3 DAYS ▶ 3 SHOWS ▶ 1 VENUE

20-22 SEPTEMBER 2016
KINTEX, SEOUL, SOUTH KOREA

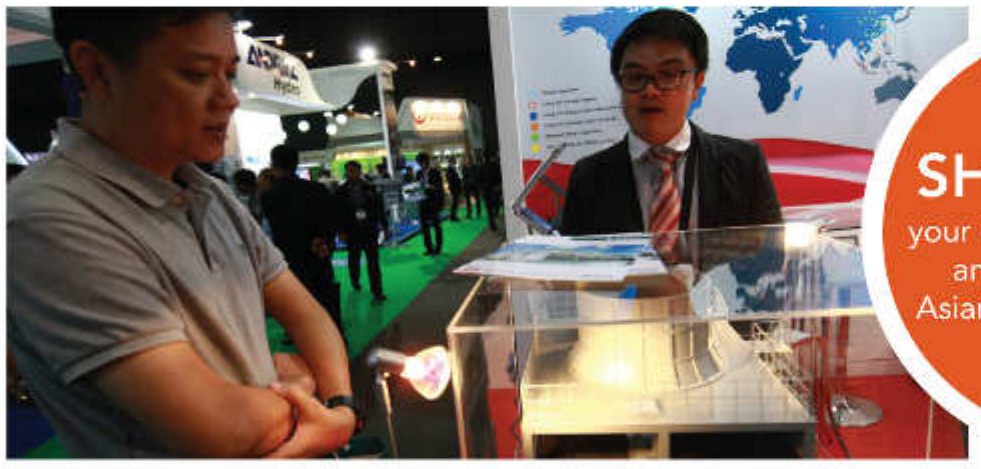
JOIN US AT ASIA'S PREMIER POWER GENERATION EVENT

LEARN
about the latest challenges and solutions for the Asian power generation industry

50+ conference sessions
as part of a multi-track conference programme

150+ eminent international speakers
from around the world

Hot topic presentations and panel discussions
about best practices and new technology developments, with the aim of providing solutions for the Asian power sector



SHOWCASE
your company's products and services to the Asian power generation industry

8,300+ attendees
from around the world looking to do business and discover new solutions

Stay ahead of the competition,
meet your customers face to face

85% of exhibitors
stated the event met/exceeded their objectives of establishing contacts for future sales and improving business

EXPERIENCE
first-hand the latest technology for the Asian power generation industry

260+ leading exhibitors
from the region and world-wide showcasing their latest technologies

8,300+ attendees
from around the world looking to do business and discover new solutions

Attending as a visitor is FREE
when you pre-register online

NETWORK WITH AN INTERNATIONAL AUDIENCE OF POWER PROFESSIONALS

8,300+ industry experts working together to exchange ideas on ways to expand and strengthen the Asian power industry.

REGISTER TO ATTEND AT: WWW.ASIAPOWERWEEK.COM

Owned & Managed by: PennWell | Official Publications: PEi Power Engineering International, Renewable Energy World Magazine

ufi Approved Event

rivo builders

DESIGN · PRECAST · BUILD

Providing Precast Solutions to Bridge & Wall Engineering

Concrete Arch

Concrete Arch

Concrete Retaining Wall

Concrete Sheetpile

Rivo Builders (M) Sdn Bhd (1018070-A)

Lot 5127, Batu 6, Jalan Kenangan Off Jalan Meru, 41050, Klang, Selangor Darul Ehsan.

Tel: 603-3392 8113 Fax: 603-3392 9113 Email: rivobuilders@gmail.com Website: www.rivo.com.my

Thank You for Your Support

From Dimension Publishing Sdn. Bhd.

3DTech Solutions Sdn. Bhd.

API Precast Marketing Sdn. Bhd.

Alpha Automation (Sel) Sdn. Bhd.

Aluminium Company of Malaysia Berhad

Construction Labour Exchange Centre Berhad

Eastern Pretech (Malaysia) Sdn. Bhd.

Emas Kiara Electrical Sdn. Bhd.

Huls Asia Sdn. Bhd.

i-Chem Solution Sdn. Bhd.

Levecon Automation Sdn. Bhd.

HCR Bridge Machinery (M) Sdn. Bhd.

Maccaferri (Malaysia) Sdn. Bhd.

MAPEI Malaysia Sdn. Bhd.

Macro Dimension Concrete Sdn. Bhd.

Megaplas Corporation Sdn. Bhd.

The company logos above are listed in alphabetical order.

Thank You for Your Support

From Dimension Publishing Sdn. Bhd.

MicroEngine Technology Sdn. Bhd.

Mikro MSC Berhad

NS BlueScope Lysaght Malaysia Sdn. Bhd.

NS BlueScope Malaysia Sdn. Bhd.

Protasco Berhad

Protext Construction (M) Sdn. Bhd.

Schneider Electric IT (M) Sdn. Bhd.

Sika Kimia Sdn. Bhd.

Simhan (M) Sdn. Bhd.

Swissma Building Technologies Sdn. Bhd.

Tokai Engineering (M) Sdn. Bhd.

Topaire Sales & Services Sdn. Bhd.

Welcome Air-Tech Sales & Services Sdn. Bhd.

Zamil Steel Building Malaysia Sdn. Bhd.

The company logos above are listed in alphabetical order.

Baja's Forest Man

Izni Zahidi
Grad. IEM

Izni Zahidi *is currently attached with CH2M as a water engineer and finishing a PhD in water resources engineering at Universiti Putra Malaysia. She has lived in five different countries as part of her studies and travelled to many more.*

There are times when travel becomes even more memorable because of someone you meet instead of the destination itself. This was true for one of my most thrilling field trips deep into the forest in south Hungary, 150km from the capital, Budapest.

To this day, I still don't know the name of the forest but I can remember vividly the day itself. The closest town was Baja, known to be a delightful place for those who love the sun and water.

As I was coming from a tropical country to study its water resources, I was really looking forward to the trip. The purpose was to demonstrate the application of Acoustic Doppler Current Profiler (ADCP) on the River Danube, Europe's second longest river which passes through Hungary, Austria, Romania, Bulgaria, Slovakia, Ukraine, Croatia, Serbia and Moldova.

The ADCP was mounted on a motorboat to measure the river depth and velocity based on the Doppler Effect. It works by transmitting high-frequency pulses of sound which are reflected by moving particles in the water. The speed of the water current can subsequently be estimated as, carried by the water, the particles move at the same speed.

Although it was exciting to get on the motorboat and to see the action, the best part of the trip was yet to come. Because they live by the river, the people of Baja have developed a love for eating fish.

So, when we took a detour to visit a fisherman who was a friend of the professor's, we knew we were in for a treat. Better known as Forest Man, the fisherman lived with his family in the forest. To get there, we were ferried there by the Forest Man in his motorboat.

His was probably the only house in the forest which depended on moonlight and fire for light and energy, and the river for water. They not only built their home on their own, but fished and made their own food as far as possible.

I had seen it on National Geographic a few times but to actually watch Forest Man and his 7-year-old son catching pike and carp using their bare hands, was eye-opening.

His daughter, who was just a bit older than her brother, then chopped the fish heads off as if she had been doing it all her life (and she probably had).

His wife then cooked us the best traditional Hungarian fish stew over a wood fire. Also known as fisherman's soup with pasta, this was made from scratch. Everything was homemade, even the drinks. She made wild cherry syrup from fruit that she picked behind their hut. It could not be any more rustic than this.

The family did not speak much English but, as we sat by the fire to keep warm, Forest Man managed to share with us some of his adventures. These were so interesting that we forgot about the Internet or the fact that we were in a forest somewhere in the Eastern Europe.

It was only when it became pitch dark that we realised it was time to leave. We held hands and walked as Forest Man and his son guided us back to the motorboat with only headlamps. The son also took us on the motorboat back to the shore.

Nobody in our group said a word but I guessed we were all praying we'd get to the shore safely. Unlike a visit to a destination which can be repeated, the evening spent with Forest Man and his family is priceless. ■

Editor's Note: *We welcome contributions from all members on travel stories.*

Tarikh: 11 April 2016

Kepada Semua Ahli,

SENARAI CALON-CALON YANG LAYAK MENDUDUKI TEMUDUGA PROFESIONAL TAHUN 2016

Berikut adalah senarai calon yang layak untuk menduduki Temuduga Profesional bagi tahun 2016.

Mengikut Undang-Undang Kecil IEM, Seksyen 3.8, nama-nama seperti tersenarai berikut diterbitkan sebagai calon-calon yang layak untuk menjadi Ahli Institusi, dengan syarat bahawa mereka lulus Temuduga Profesional tahun 2016.

Sekiranya terdapat Ahli Korporat yang mempunyai bantahan terhadap mana-mana calon yang didapati tidak sesuai untuk menduduki Temuduga Profesional, surat bantahan boleh dikemukakan kepada Setiausaha Kehormat, IEM. Surat bantahan hendaklah dikemukakan sebulan dari tarikh penerbitan dikeluarkan.

Ir. Yam Teong Sian
Setiausaha Kehormat, IEM,

PERMOHONAN BARU

Nama	Kelayakan
KEJURUTERAAN AWAM	
JACKLYN ANAK DOMINIC MERICKAN	BE HONS (MALAYA) (CIVIL, 2003)
LING SENG HUAT, JIMMY	BE HONS (PLYMOUTH) (CIVIL, 2004)
MOHD FALIZAN BIN YUSOF	BE HONS (UTM) (CIVIL, 2001)
NOOR AZEAN BINTI AHMAD	BE HONS (UNISEL) (CIVIL, 2007)
KEJURUTERAAN AUTOMOTIF	
MOHD FAIRUZ BIN IZANI	BE (IWATE) (MECHANICAL, 2007)
KEJURUTERAAN ELEKTRIKAL	
CHIA HUNG KWANG, BONIFACE	BE HONS (MULTIMEDIA) (ELECTRICAL, 2002) MESc (MULTIMEDIA) (2005)
MOHD MUZHAR B. AHMAD TAJUDDIN	BE HONS (UiTM) (ELECTRICAL, 2002)
ROSEMIZI BIN ABD RAHIM	BE HONS (UiTM) (ELECTRICAL, 2000)
YOSSIE OKTORA BINTI MUHAMAD	BE HONS (UKM) (ELECTRICAL, ELECTRONIC & SYSTEM, 2001) ME (UTM) (ELECTRICAL POWER, 2012)
KEJURUTERAAN ELEKTRONIK	
RIZALAFANDE BIN CHE ISMAIL	BE HONS (UTM) (ELECTRICAL - ELECTRONICS, 2002) ME (RMIT) (MICROELECTRONIC, 2005) PhD (NEWCASTLE UPON TYNE) (2012)
KEJURUTERAAN MEKANIKAL	
AHMAD NAZWAN BIN MAT ZIN	BE HONS (UKM) (MECHANICAL, 2002)
AZAN BIN ZAINUDDIN	BE HONS (UKM) (2001)
YONG LEONG HUA	BE (RMIT) (MECHANICAL, 2001) MBA (SOUTHERN PACIFIC, 2007)

PERPINDAHAN AHLI

No. Ahli	Nama	Kelayakan
KEJURUTERAAN AWAM		
29737	CHAI CHUAN YEAW	BE HONS (UNITEN) (CIVIL, 2006)
53739	FAUZIAH BINTI MOHD SAID	BE HONS (UTM) (CIVIL, 2000)
24082	FUNG WEN YIN	BE HONS (MALAYA) (CIVIL, 2006) MSc (SINGAPORE) (CIVIL, 2011)
44129	GAN TZE NENG	BE HONS (CURTIN) (CIVIL &CONSTRUCTION, 2009)
57079	KUMARAN A/L KUMARAWEH	BE HONS (UTM) (CIVIL, 2006)
25517	MICHAEL KOAY	BE HONS (UTM) (CIVIL, 2001) ME (UTM) (CIVIL-STRUCTURE, 2003)
64731	MOHD AMRI SAIFULLAH BIN A RAHMAN	BE HONS (UTM) (CIVIL, 2011)
23750	RAAZLIZAM BIN LIAS	BE (HONS) (UiTM) (CIVIL, 2004)
53740	RIZWAN BIN IDRIS ZAINUDDIN	BE HONS (UTM) (CIVIL-ENVIRONMENTAL, 2003)
36301	SELVANASON A/L KRISHNAN	BE HONS (UTM) (CIVIL, 2005)
8381	SONG SWEE KIAN, MERVYN	BSc (CANTERBURY) (CIVIL, 1981)
37244	SRI RAM A/L RAMANKUTTY	BE HONS (UTM) (CIVIL, 2006)
23436	TEO CHING LEE, DELSYE	BE (CURTIN) (CIVIL & CONSTRUCTION, 2002) PhD (UMS) (CIVIL, 2007)
18242	TOH LING CHUEN	BSc (NEW BRUNSWICK) (CIVIL, 1996)
19826	UNG HUI HUI	BE (HONS) (UTM) (CIVIL,2002) ME (ASIAN INSTITUTE OF TECHNOLOGY, 2004)
KEJURUTERAAN ELEKTRIKAL		
53993	AHMAD AFIQ BIN CHE AZAM	BE HONS (UiTM) (ELECTRICAL, 2008)
59045	KHAIRUL AMRI BIN SALEH	BE HONS (UTeM) (CONTROL, INSTRUMENTATION & AUTOMATION, 2008)
44572	MD PAUZI BIN ABDULLAH	BE HONS (UNITEN) (ELECTRICAL & ELECTRONICS, 2002) MSc (STRATHCLYDE) (ELECTRICAL POWER, 2004)
55863	MOHD HAZIM BIN MAT SAMAN	ME HONS (SOUTHAMPTON) (ELECTRICAL, 2010)
KEJURUTERAAN ELEKTRONIK		
41266	LAU YEW PANG	BSc (UNITED STATES NAVAL ACADEMY, 2009)
37064	MAHATHIR BIN MARZUKI	BSc (OHIO) (ELECTRICAL & COMPUTER, 2007)
21620	SHASHIKUMAR A/L KRISHNAN	BE HONS (MMU) (ELECTRONICS, 2002) MSc (UPM) (ELECTRICAL POWER, 2008)
KEJURUTERAAN KIMIA		
70251	AMIZA BINTI AZMI	BE HONS (UiTM) (CHEMICAL, 2006) ME (UM) (SAFETY, HEALTH & ENVIRONMENT, 2013)
79031	LEO CHOE PENG	BE HONS (UKM) (CHEMICAL, 2004) PhD (USM) (2008)
59901	MUSA BIN MA'AMOR	BE HONS (UiTM) (CHEMICAL, 2009)
26348	CHONG CHIEN HWA	BE HONS (UTM) (CHEMICAL, 2007) PhD (NOTTINGHAM) (2010)
KEJURUTERAAN MEKANIKAL		
54516	LEE WEI TECK, THOMAS	BE HONS (MALAYA) (MECHANICAL, 2006)
79259	LIM CHAN CHENG	BE HONS (MULTIMEDIA) (MECHANICAL, 2009)
52601	LINGESHWARAN RAMACHANDRAN	BE HONS (UNITEN) (MECHANICAL, 2012)
25449	MOHD NORHAZLEE BIN NAWAWI	BE HONS (UTM) (MECHANICAL, 2003)
38874	RUDIYANTO BIN PHILMAN JONG	BE HONS (UTM) (MECHANICAL, 2008) ME (UTM) (MECHANICAL, 2014)

PERMOHONAN BARU MENJADI AHLI KORPORAT

KEJURUTERAAN AWAM		
-	BENEDICT CHAN WEI CHIANG	BE HONS (UiTM) (CIVIL, 2007)
-	WONG LING GIN	BE HONS (UTM) (CIVIL, 1995)
KEJURUTERAAN MEKANIKAL		
-	ANA MIRAA MOHD YUSOF	BE HONS (QUT) (MECHANICAL, 1999)
-	JAMALUDDIN ASMUNI	BE HONS (MALAYA) (MECHANICAL, 1996)

PEMINDAHAN MENJADI AHLI KORPORAT

KEJURUTERAAN ELEKTRONIK		
15452	SHARANJIT SINGH A/L KARPAL SINGH	BE HONS (UKM) (ELECTRICAL, ELECTRONIC & SYSTEM, 1995)
KEJURUTERAAN MEKANIKAL		
48120	TERENCE CHAN PAUL WANG	BE HONS (UNIMAS) (MECHANICAL & MANUFACTURING SYSTEM, 2008)

ERRATA

The report for cover story in March 2016 *JURUTERA* was contributed by Ir. Paul Pho Chi Wei and Ir. Assoc. Prof. Dr Leong Wai Yie

IEM DIARY OF EVENTS

Title: 2-day Course on Malaysian Civil Engineering Standard Method of Measurement (MyCESMM) With Details on Roadworks and Drainage Works

24 - 25 May 2016

Organised by : Sub Committee on Engineering Contracts of Standing Committee on Professional Practice
Time : 8.00 a.m. – 6.00 p.m.
CPD/PDP : 15

Kindly note that the scheduled events below are subject to change. Please visit the IEM website at www.myiem.org.my for more information on the upcoming events.

78684	WAN NUR HAFEZA HASLINDA WAN HASSAN	2ND YEAR (UMP) (CIVIL)
78804	WAN NURULHAZWANI BT WAN SAHARUDDIN	4TH YEAR (UMP) (CIVIL)
	WANG HUIXIN	1ST YEAR (UTAR)(CIVIL)
	WEE WEI JOE	1ST YEAR (UNITEN) (CIVIL)
	WONG DAI KING	1ST YEAR (SWINBURNE) (CIVIL)
	WONG ING MING	2ND YEAR (SWINBURNE) (CIVIL)
	WONG JIA HAN	2ND YEAR (UTAR)(CIVIL)
	WONG MING MING	1ST YEAR (SWINBURNE) (CIVIL)
	WONG SHI WEI	2ND YEAR (UTAR)(CIVIL)
	WONG SHYUNG HAW	3RD YEAR (UTAR) (CIVIL)
	WONG WY UENN, JOHAN	3RD YEAR (UTAR) (CIVIL)
78726	WONG YIH KANG	4TH YEAR (UMP) (CIVIL)
	WONG YIN MENG	2ND YEAR (UTAR)(CIVIL)
	YAP EE MEI	3RD YEAR (UTAR) (CIVIL)
78723	YAP HIEW THONG	4TH YEAR (UMP) (CIVIL)
	YAP KE HAN	3RD YEAR (UTAR) (CIVIL)
	YAP TZE LIT	3RD YEAR (UTAR) (CIVIL)
78792	YAP YEE VON	4TH YEAR (UMP) (CIVIL)
78795	YII LI JHIA	3RD YEAR (UMP) (CIVIL)
	YIP JIA JUN	3RD YEAR (UTAR) (CIVIL)
	YONG CHIA CHI, GRACE	1ST YEAR (SWINBURNE) (CIVIL)
	YU CHIA SHENG	1ST YEAR (UTAR)(CIVIL)
78752	YUSRINA BINTI MHAMD AZIZMY	4TH YEAR (UMP) (CIVIL)
78685	YUVARAJ A/L YATHAGAN	1ST YEAR (UMP) (CIVIL)
	ZAHIR SOLIHIN BIN ZAWAWI	1ST YEAR (UTHM) (CIVIL)
	ZAINUL HAZWANI BINTI ABD SAMAD	1ST YEAR (UNITEN) (CIVIL)
78683	ZURAIDA BINTI HASBULLAH	1ST YEAR (UMP) (CIVIL)
78789	ZURIYANI BINTI ZULKIFLI	3RD YEAR (UMP) (CIVIL)

KEJURUTERAAN BIOPERUBATAN

	CHAI LI CHING	3RD YEAR (UTAR) (BIOMEDICAL)
	HENG YEH TAT	1ST YEAR (UTAR) (BIOMEDICAL)
	YEOH HSIEN HUI	3RD YEAR (UTAR) (BIOMEDICAL)

KEJURUTERAAN ELEKTRIKAL

	ABDUL HADI B. MUSTAFA	1ST YEAR (UTHM) (ELECTRICAL)
	ABDUL MUKMIN BIN ABDUL MALIK	1ST YEAR (UTHM) (ELECTRICAL)
	ADAM AFIQ BIN AZLAN TAN	1ST YEAR (UTHM) (ELECTRICAL)
	ADHWA' AFNAN HAFIY BIN ABDUL SANI	1ST YEAR (UNITEN) (ELECTRICAL)
	ADHWA AMSYAR SYAZWAN B AB. MAJID	1ST YEAR (UTHM) (ELECTRICAL)
	AFIQAH BINTI ZAKWAN	1ST YEAR (UNITEN) (ELECTRICAL)
	AHMAD AMIRUL SALIHIN BIN AHMAD FAUZI	1ST YEAR (UNITEN) (ELECTRICAL)
	AHMAD AZEEM BIN RAZALI	1ST YEAR (UNITEN) (ELECTRICAL)
	AHMAD AZIM BIN MAT RABI	1ST YEAR (UNITEN) (ELECTRICAL)
	AHMAD KAUTHAR B. HAFIL	1ST YEAR (UTHM) (ELECTRICAL)
	AHMAD LUQMAN CHE KASIM	4TH YEAR (UMP) (ELECTRICAL)
	AHMAD SYAMIL BIN ALI	1ST YEAR (UNITEN) (ELECTRICAL)
	AIELRAY BIN AZMAN	1ST YEAR (UTHM) (ELECTRICAL)
	AIN ATHIRAH BT KAMAROZAMAN	1ST YEAR (UNITEN) (ELECTRICAL)
	AINA SYAZWANI BADROL HISHAM	1ST YEAR (UNITEN) (ELECTRICAL)
	AISYA' ZULAIKHA BINTI MOHD ADNAN	1ST YEAR (UNITEN) (ELECTRICAL)
	ALVIN CHUA CHEE SIANG	1ST YEAR (UNITEN) (ELECTRICAL)
	AMAR AIZAT BIN ROSMAN	1ST YEAR (UTHM) (ELECTRICAL)
	AMEEN ASYRAF BIN AZMAN	1ST YEAR (UTHM) (ELECTRICAL)
	AMIRUL HAKIM BIN SUID	1ST YEAR (UTHM) (ELECTRICAL)
	AMMAR SYAHMI B. MOHD ANUAR	1ST YEAR (UTHM) (ELECTRICAL)
78815	ANANTH KRISHNAN A/L BALACHANDRAN	1ST YEAR (UMP) (ELECTRICAL)
	ANIS ADIBA BINTI ZAWAWI	1ST YEAR (UNITEN) (ELECTRICAL)
	ASHRIQ B. KHARULANNUAR	1ST YEAR (UNITEN) (ELECTRICAL)
	ASYIQQIN BT MAZLAN	1ST YEAR (UNITEN) (ELECTRICAL)
	AZIEAZITA BINTI ABD AZIZ	1ST YEAR (UNITEN) (ELECTRICAL)
	AZREEN BINTI AWALLUDIN	1ST YEAR (UNITEN) (ELECTRICAL)
	BAVINTHIRAN A/L YUGAPURIAN	1ST YEAR (UNITEN) (ELECTRICAL)
	CHE MOHAMAD AZFAR BIN CHE AFRI	1ST YEAR (UNITEN) (ELECTRICAL)
	CHEONG SERENE	1ST YEAR (UNITEN) (ELECTRICAL)
	CHIA YING YUEN	1ST YEAR (UNITEN) (ELECTRICAL)
	CHO ZIN MYINT	3RD YEAR (CURTIN) (ELECTRICAL)
	CHOO XIU HUOI	1ST YEAR (UNITEN) (ELECTRICAL)
	CHU KOK YEOW, PETER	1ST YEAR (UNITEN) (ELECTRICAL)
	DARMINDERJEET SINGH A/L TELOK SINGH	1ST YEAR (UNITEN) (ELECTRICAL)
	DAVEKUMAR A/L RAJENDRAN	1ST YEAR (UNITEN) (ELECTRICAL)
	DINESHEN A/L MAHENDRAN	1ST YEAR (UNITEN) (ELECTRICAL)
	DONNA NALES ANAK NYAWAI	1ST YEAR (UNITEN) (ELECTRICAL)
	ERIKSON JANANG ANAK TINGOM	1ST YEAR (UNITEN) (ELECTRICAL)
	EZMITH HAIKAL BIN AMIRNUDDIN	1ST YEAR (UTHM) (ELECTRICAL)
	FAISAL BIN MOHAMAD	1ST YEAR (UNITEN) (ELECTRICAL)
	FATIN ATHIRAH MOHD JAIH	1ST YEAR (UTHM) (ELECTRICAL)
	FATIN NUR SYAHIRAH BT SHAHRIMAN	1ST YEAR (UNITEN) (ELECTRICAL)
	FILARIUS PETER USOP	1ST YEAR (UNITEN) (ELECTRICAL)
	GAHBILAN A/L DEVADAS	1ST YEAR (UNITEN) (ELECTRICAL)
	GAN BENG CHUN	1ST YEAR (UNITEN) (ELECTRICAL)
	HALIMAHTUSS SAADIAH BINTI ROSDIN	4TH YEAR (UMP) (ELECTRICAL)
	HAZARUL FASKAH BIN RASID	1ST YEAR (UTHM) (ELECTRICAL)
	HAZIQ DANIAL BIN SHAHRULHISHAM	1ST YEAR (UNITEN) (ELECTRICAL)
	HOE ZI WEI	1ST YEAR (UTHM) (ELECTRICAL)
	HUANG XIANG EN	1ST YEAR (UNITEN) (ELECTRICAL)
	JANAARTANAN A/L KUNJIKANNAN	1ST YEAR (UTHM) (ELECTRICAL)
	JULIO NATALION BIN JULIP	4TH YEAR (UMP) (ELECTRICAL)
	KESHANRAJ A/L BALAKRISHNAN	1ST YEAR (UNITEN) (ELECTRICAL)
	KHAIRI SAADAH BINTI AZZAHARI	1ST YEAR (UNITEN) (ELECTRICAL)
78429	KU SHIN FENG	3RD YEAR (UMP) (ELECTRICAL)
	LEE WEI JIAN	1ST YEAR (UNITEN) (ELECTRICAL)
	LEE YUAN JET, KEVIN	1ST YEAR (MMU) (ELECTRICAL)
	LIM JIAN XIU	1ST YEAR (UTHM) (ELECTRICAL)
	LOGESHWARI RAJA	1ST YEAR (UNITEN) (ELECTRICAL)
	MELISSA JULIANA BT MARZUKI	1ST YEAR (UNITEN) (ELECTRICAL)
	MOHAMAD AZHARI BIN BASARUDDIN	4TH YEAR (UMP) (ELECTRICAL)
	MOHAMAD FADHIL BIN SAIDI	1ST YEAR (UTHM) (ELECTRICAL)
	MOHAMAD FARHAN BIN MOHAMED	1ST YEAR (UNITEN) (ELECTRICAL)
	MOHAMAD HANAFFIE BIN HASHIM	1ST YEAR (UTHM) (ELECTRICAL)
	MOHAMAD ILMI BIN ZAKARIA	4TH YEAR (UMP) (ELECTRICAL)
	MOHAMAD KAMIL BIN ROMAI NOOR	1ST YEAR (UTHM) (ELECTRICAL)
	MOHAMAD NUR AIMAN BIN MOHD SAID	1ST YEAR (UTHM) (ELECTRICAL)
	MOHAMMAD FAUZAN B. ROSLAN	1ST YEAR (UTHM) (ELECTRICAL)
	MOHAMMAD NAJMI BIN MOHD RADZI	1ST YEAR (UNITEN) (ELECTRICAL)
	MOHAMMED FAHMI AHMED ESMAIL	1ST YEAR (UNITEN) (ELECTRICAL)
	MOHD FAIQ AMEIR B. MOHD KAMARUZAMAN	1ST YEAR (UNITEN) (ELECTRICAL)
	MOHD HAFIZUL BIN FAUZI	1ST YEAR (UTHM) (ELECTRICAL)
	MOHD SHAHFIZAN BIN ABDUL WAHID	3RD YEAR (UMP) (ELECTRICAL)
	MOHD SYAZWAN BIN SAIT	1ST YEAR (UNITEN) (ELECTRICAL)
	MUHAMAD ALI ZULKARNAIN BIN ROSLI	1ST YEAR (UTHM) (ELECTRICAL)
	MUHAMAD FAIZ NAZRIN BIN BAHARIN	1ST YEAR (UNITEN) (ELECTRICAL)
	MUHAMAD FAIZUAN BIN PAUZI	1ST YEAR (UTHM) (ELECTRICAL)
	MUHAMAD FAKRI B. MOHD FADI @ MOHD FADZIL	1ST YEAR (UNITEN) (ELECTRICAL)
	MUHAMAD FARIS BIN FAUZI	1ST YEAR (UNITEN) (ELECTRICAL)
	MUHAMAD FAYYADH BIN ISMAIL	1ST YEAR (UNITEN) (ELECTRICAL)
	MUHAMAD IKMAL HAKIM BIN MOHD ANUAR	1ST YEAR (UNITEN) (ELECTRICAL)
	MUHAMAD NAJIB BIN MUHMAD NASIR	1ST YEAR (UNITEN) (ELECTRICAL)
	MUHAMAD NOR IZHAM BIN ZAILAM	1ST YEAR (UTHM) (ELECTRICAL)
	MUHAMAD SOLAHUDDIN BIN MUHAMAD SALIM	1ST YEAR (UTHM) (ELECTRICAL)
	MUHAMMAD AFIF AMIR BIN ARAZMI	1ST YEAR (UNITEN) (ELECTRICAL)
	MUHAMMAD AIMAN BIN NOOR AFFENDI	1ST YEAR (UTHM) (ELECTRICAL)
	MUHAMMAD AIZAL BIN AKMAR	1ST YEAR (UNITEN) (ELECTRICAL)
	MUHAMMAD ALIFF HAIKAL BIN MOHAMMAD SOFFI	1ST YEAR (UTHM) (ELECTRICAL)
	MUHAMMAD AMIRUL ADLI BIN MOHD NOH	1ST YEAR (UNITEN) (ELECTRICAL)
	MUHAMMAD AMIRUL B MOHD ROSLEI	1ST YEAR (UTHM) (ELECTRICAL)
	MUHAMMAD AMMAR FAHMI BIN ZAINOL	3RD YEAR (UMP) (ELECTRICAL)
	MUHAMMAD ASWAD BIN AHMAD	1ST YEAR (UTHM) (ELECTRICAL)
	MUHAMMAD AZFAR B. MOHAMMAD NARAZIAN	1ST YEAR (UNITEN) (ELECTRICAL)
	MUHAMMAD FAHMI BIN ABD RAZAK	1ST YEAR (UNITEN) (ELECTRICAL)
	MUHAMMAD HAZIM BIN BORHAN	1ST YEAR (UTHM) (ELECTRICAL)
	MUHAMMAD HAZWAN BIN HARUN	1ST YEAR (UNITEN) (ELECTRICAL)
	MUHAMMAD IZZAT BIN SAZALI	1ST YEAR (UNITEN) (ELECTRICAL)
	MUHAMMAD IZZUDDIN BIN NOOR SALI	1ST YEAR (UNITEN) (ELECTRICAL)
	MUHAMMAD KAMAL AMZAR BIN KAMAL	1ST YEAR (UTHM) (ELECTRICAL)
	MUHAMMAD NAJMI B CHE SEMAN	1ST YEAR (UTHM) (ELECTRICAL)
	MUHAMMAD REZA BIN KHALIB	3RD YEAR (UMP) (ELECTRICAL)
	MUHAMMAD SYAFIQ BIN AZHAR	1ST YEAR (UTHM) (ELECTRICAL)
	MUHAMMAD SYAKIR BIN YUSRI	1ST YEAR (UNITEN) (ELECTRICAL)
	MUHAMMAD TAUFIQ HIDAYAT BIN EMRAN	1ST YEAR (UNITEN) (ELECTRICAL)
	MUHAMMAD THAQIB B KHAIRUDIN	1ST YEAR (UTHM) (ELECTRICAL)
	MUHAMMAD ZAIM B ZULKEFLI	1ST YEAR (UTHM) (ELECTRICAL)
	MUHAMMAD ZAWIR AQWA B. AHMAD SHAARI	1ST YEAR (UTHM) (ELECTRICAL)

MUHD FAIZ BIN MUNAHIR	1ST YEAR (UTHM) (ELECTRICAL)
MUHD KHAIRUZAMAN BIN MOHD JAMRI	1ST YEAR (UTHM) (ELECTRICAL)
MUKISH KUMAR A/L MUNYADY	1ST YEAR (UNITEN) (ELECTRICAL)
MURSYID BIN MUHAMMAD	1ST YEAR (UNITEN) (ELECTRICAL)
MUZAFFAR NAEEM BIN MANSOR	1ST YEAR (UNITEN) (ELECTRICAL)
NABILAH MUNIRAH BINTI SUED	4TH YEAR (UMP) (ELECTRICAL)
NADZIRAH BINTI NOOR HUZAILI	1ST YEAR (UNITEN) (ELECTRICAL)
NOOR HIDAAYAH BINTI MOHD NGABAS	1ST YEAR (UTHM) (ELECTRICAL)
NOOR IKHWAN BIN MAZALAN	1ST YEAR (UNITEN) (ELECTRICAL)
NOR AIN BINTI ZAKARIYA	1ST YEAR (UNITEN) (ELECTRICAL)
NOR AMIRAH SYAHINDAH BINTI NGAMIDUN	1ST YEAR (UTHM) (ELECTRICAL)
NOR ATIQAH BINTI MOHD NIZA	1ST YEAR (UNITEN) (ELECTRICAL)
NOR HAZIQAH BINTI ZULKIFLE	1ST YEAR (UTHM) (ELECTRICAL)
NOR SAZLIN BINTI AHMAD MAWARDI	1ST YEAR (UTHM) (ELECTRICAL)
NORAINI NASUTION BINTI ZAMANHURI	1ST YEAR (UNITEN) (ELECTRICAL)
NORATIKAH BINTI ABDUL LATIF	4TH YEAR (UMP) (ELECTRICAL)
NORNADIRAH BINTI ZULKAPLE	1ST YEAR (UTHM) (ELECTRICAL)
NORSYAZWAN HAZMI BIN NORZAIDI	3RD YEAR (UMP) (ELECTRICAL)
NUR ADHIRAA BINTI KHAIRUDDIN	1ST YEAR (UNITEN) (ELECTRICAL)
NUR AFIQAH BINTI IBRAHIM	1ST YEAR (UNITEN) (ELECTRICAL)
NUR AIFAA BT AZIZAN	1ST YEAR (UNITEN) (ELECTRICAL)
NUR ATHIRAH BINTI MOHAMAD YUSOF	1ST YEAR (UTHM) (ELECTRICAL)
NUR ATIKAH BINTI AHMAD ISA	1ST YEAR (UTHM) (ELECTRICAL)
NUR ATIQAH BINTI MD DEROS	4TH YEAR (UMP) (ELECTRICAL)
NUR FARAH AMYRA BINTI AHMAD FAUZI	1ST YEAR (UNITEN) (ELECTRICAL)
NUR HIDAYAH BINTI ISMAIL	1ST YEAR (UNITEN) (ELECTRICAL)
NUR IZZAH BINTI IBRAHIM	1ST YEAR (UNITEN) (ELECTRICAL)
NUR SHAZLIYANA BT HAMZAH	1ST YEAR (UNITEN) (ELECTRICAL)
NUR SYAHIRA SYUHADA BINTI MOHD ZAID	1ST YEAR (UNITEN) (ELECTRICAL)

Note: *Remaining list would be published in the June 2016 issue. For the list of approved "ADMISSION TO THE GRADE OF STUDENT", please refer to IEM web portal at http://www.myiem.org.my.*

Pengumuman yang ke-91

SENARAI PENDERMA KEPADA WISMA DANA BANGUNAN IEM

Institusi mengucapkan terima kasih kepada semua yang telah memberikan sumbangan kepada tabung Bangunan Wisma IEM. Ahli-ahli IEM dan pembaca yang ingin memberikan sumbangan boleh berbuat demikian dengan memuat turun borang di laman web IEM http://www.iem.org.my atau menghubungi secretariat di +603-7968 4001/5518 untuk maklumat lanjut. Senarai penyumbang untuk bulan Mac 2016 adalah seperti jadual di sebelah:

NO.	NO. AHLI	NAMA
1	27472	ABDUL RASHID BIN HUSSAIN
2	61113	ABDULLAH AZIZ BIN SAAD
3	13552	ABI SOFIAN BIN ABDUL HAMID
4	43718	ABU BAKAR BIN ABD AZIZ
5	47623	ABU HANIFAH BIN HAJI ABDULLAH
6	19186	ADRIAN NORBERT LEE
7	12697	AHMAD NORNADZMI BIN DZULKARNAIN
8	15350	AHMAD RAFA'EE BIN JOHARI
9	22228	AHMAD RAFIDI BIN MOHAYIDDIN
10	45812	AMIR HASDI BIN FAUZI @ MAT RAWI
11	75332	ANG JEN KEN
12	03016	ANG LEE HUAT
13	04812	ARIFFIN LEE BIN ABDULLAH @ LEE KIM SENG, FRANCIS
14	15432	ARNIA SUHAIMI BIN SAAID
15	38728	AU MAAN WAH
16	14350	AZHAR BIN AHAMAD
17	39230	AZWANIZAM BIN CHE ABD RAHMAN
18	18156	BAHARIN BIN HASHIM
19	02425	BUI YIN HUING, GEORGE
20	24819	CHAN WAN HOE
21	15793	CHANG CHEE CHEONG
22	01189	CHANG CHING CHAU
23	09450	CHE ABDULLAH FAUZI BIN HAJI OTHMAN
24	15380	CHEE HOCK CHUANG
25	23412	CHEE KWEE POEY
26	01109	CHENG WAH
27	17589	CHERN BOON HONG
28	05111	CHIA NYAN FATT
29	14115	CHIN CHEE KHEONG
30	13857	CHIN CHOON SENG
31	01657	CHIN KOK KONG
32	25804	CHING CHEE KENG
33	12979	CHNG CHEE CHIN
34	06762	CHOO BE BE @ CHOO KOO KIANG
35	01583	CHOO SENG KIT
36	25525	CHOW CHIN SEANG
37	17679	CHOY WENG WAH
38	44154	CHUE SZE LYN
39	15463	DAUD BIN ABAS
40	00586	DAVID NALLIAH WELCH
41	25634	DAVID ROBERT PARKS
42	02400	DEVARAJA MURUGAPPA
43	57524	FADZLI BIN MOHD PAUZI
44	19592	FATHULLAH RAZZAQ BIN GHAZALI
45	25392	GAN SHIAU HUI
46	06869	GAN WEE PENG
47	04866	GEORGE STEWART LABROOY
48	05703	GNANADHAS S/O MANUEL
49	01045	GRAEME FRANCIS CONNORS
50	07390	HARUN BIN ISMAIL
51	43692	HASBUDDIN BIN ZAINUDIN
52	75371	HASRIN BIN HASHIM
53	04871	HEW WAI THO
54	06480	H'NG AH LEP
55	12677	HO KONG SOON
56	18364	IBRAHIM BIN HUSSEIN
57	09973	IBTISHAM BIN L. SALEH
58	07691	IDRIS BIN MOHAMED @ MAMAT
59	27465	ISMAIL BIN HASSAN
60	04972	JAMALUDIN BIN OSMAN
61	04972	JAMALUDIN BIN OSMAN
62	19278	JAUHAR BIN MOHAMED
63	06381	JOSEPH GERARD GOMEZ
64	17242	KAM KIEN CHONG
65	11013	KHAIRIL ANUAR BIN BAHARIN
66	45828	KHAIRUL SHAHRIL BIN SHAFFEE
67	67082	KISNAN A/L RAMAYA
68	15181	KOH BEE SENG
69	18307	KOH YONG HUAT
70	01950	KUAK YONG CHEW
71	06519	KUAN KAIN
72	15881	KUMARI NALINI A/P P. SUBRAMANIAM
73	07480	LAI TA LEE
74	07205	LAU KOK LOONG
75	26936	LAU YING LEE
76	01338	LEE KIM SENG
77	08741	LEE KOK AN
78	01422	LEE SIAN KIAT
79	12608	LENG BOON HOCK
80	03922	LEONG CHIEW SENG
81	09010	LEONG SANG KHIM
82	13409	LEONG SOW KHEAN
83	04727	LIM CHENG LIONG
84	03651	LIM KEE SIN
85	10675	LIM THUAN SWEE
86	06440	LINGANATHAN S/O V THILLAINATHAN
87	05394	LO SOO MIN @ LUCAS LO
88	00983	LOH JOHN KEE
89	59958	LOH KEIN YIP
90	20141	LONG CHAY SUAN
91	12375	MAHMOOD AZMY BIN MUHAMMAD SHUKRI
92	15677	MASHITAH BT. HAJI MD. JAIS
93	30592	MASWADY BIN MASKIN
94	10383	MD. NASIR BIN BAHAROM

95	01793	MOHAMAD AFIFI BIN ABDUL MUKTI
96	11511	MOHAMAD AZMI BIN ABDULLAH @ MAMAT
97	09686	MOHAMAD BIN ABD. SAMAD
98	13475	MOHAMAD SHARIF BIN MOK SOM
99	06233	MOHAMAD SOFIAN BIN AHMAD
100	31733	MOHD AZMI BIN JUSOH
101	06016	MOHD ELIAS BIN BURAN
102	13780	MOHD REDZUAN BIN MOHD RAMLI
103	19730	MOHD REHAT BIN AHMAD @ SALIMAN
104	18916	MOHD RUSLI BIN SAKTI
105	08692	MOHD SABRI BIN ZAKARIA
106	01745	MOHD. MUSTAFA BIN ZAHARIMAN
107	54541	MOKHZANI KHAIR BIN ISHAK
108	23964	MU MUNG SIUNG
109	05387	MUHAMMAD RAZIF BIN HAJI IBRAHIM
110	24076	MUHAMMAD RIDHWAN BIN ALI
111	11301	MUSA BIN HAJI MUSTAKIM
112	15436	MUSTAFFA KAMAL BIN KAMALUDDIN
113	16339	NAZRI BIN HARUN
114	16264	NG HOCK SENG
115	21575	NGIM CHIN KIM
116	17883	NOOR SAMSUDIN BIN KANDAR
117	42611	NOR ZELAN BIN JALIL
118	13245	NORHAMIDI BIN MD. DIN
119	28476	OH SEONG POR
120	13796	ONG CHOOI HUAT
121	03593	ONG KOK HOO
122	04396	OOI SAN KOOI
123	11930	PANG SU SIONG
124	06290	PAZANON BIN AZIZ
125	09429	POOBALAN S/O MAHALINGAM
126	11588	POOK FONG FEE
127	16288	PUAN NOR'IN BT MAN
128	37630	PUDZIL BIN MUHAMMAD DAUD
129	12788	PUNITHA RAJAN A/L K. DORAISAMY
130	18999	RAHMAT BIN YUSOF
131	09654	RAJASEGARAN S/O PALANISAMY
132	15346	RAMAYA A/L RAMAN
133	08221	RAZALI BIN HUSSIN
134	37966	ROSHAM KADIMAN BIN SAMSUDIN
135	15416	ROSLI BIN MOHD TAIB
136	07231	SAM MAN KEONG
137	03895	SANDRASEGARAN S/O KARUPAIAH
138	14537	SEE CHENG SENG
139	12910	SHAHARUDDIN BIN HARIS LIM
140	15814	SIA PIE KING
141	07030	SIM KET HUI, PATRICK
142	13872	SOH ENG LU
143	03031	SU AH KAU
144	09817	SULAIMAN BIN MOHAMAD TAIB
145	15006	SUPPAYAH A/L SINAKALAI
146	80577	SURENDRAN KANDASAMY
147	11103	SYED AMIR BIN SYED ALWI SHAHABUDIN
148	08710	SYED IDRUS BIN ABD. RAHMAN
149	03273	SYED ZAIN AL-KUDCY BIN SYED MAHMOOD
150	08048	TAN CHEE KUN
151	01251	TAN ENG CHONG
152	05018	TAN GIM FOO
153	00536	TAN HOCK AUN
154	01798	TAN HOON KAI
155	21296	TAN HUA CHUN
156	13021	TAN KHOON KIAN
157	02609	TAN KOK YEE
158	02820	TAN LEK LEK
159	02212	TAN PIT YONG
160	09122	TAN SENG THIAN
161	12364	TAN WENG JOO
162	38843	TAN YONG WOI
163	06759	TANG KHAI HING
164	09291	TAY CHOON JIN
165	02104	TAY YEE WET
166	14527	TE KIM BOON
167	07618	TEE SEE KIM
168	15071	TEH POOI KUANG, ALLEN
169	14955	TENGKU HAZIAN BIN TENGKU AB. HAMID
170	09624	TIU JON HUI
171	01473	TORKIL GANENDRA
172	21314	TSAO KEE JANG
173	51293	TUAN SANUSI ASMADI BIN TUAN HAMAT
174	30582	TUEN WAI KEONG
175	09726	WAN AB. GHAFFAR BIN WAN AHMAD
176	19291	WAN ALWI BIN WAN MUSTAPHA
177	53091	WAN HASSAN BIN WAN MAMAT
178	36835	WAN MOHD FAUZI BIN WAN SULAIMAN
179	09368	WEE BOON KIONG
180	02659	WEE KIM SIANG
181	06544	WONG HAN PIU
182	25093	WONG KIE HIEN
183	10112	WONG KOON YUIN
184	02208	WONG NAM YUN
185	05408	YAHYA BIN AHMAD
186	02893	YAHYA BIN MOHAMED YATIM
187	16342	YAP KIM HONG
188	08426	YAP YAN NAM
189	27607	YEN KEN MIN
190	21275	YONG KOK HOONG
191	00684	YU WEN CHIEH
192	49934	ZAINAL BIN MATHAN
193	13639	ZAINAL BIN MOHD
194	40025	ZAINALABIDIN BIN ABDUL HAMID
195	50174	ZULHAIRI BIN JAAFFAR
196	07719	ZULKEPLY BIN ABD. WAHID
197	05132	ZULKIFLY BIN MADON

CONTRIBUTIONS TO WISMA IEM BUILDING FUND

RM 2,829,993.66 contributed by IEM Members and Committees

RM 744,332.19 contributed by Private Organisations

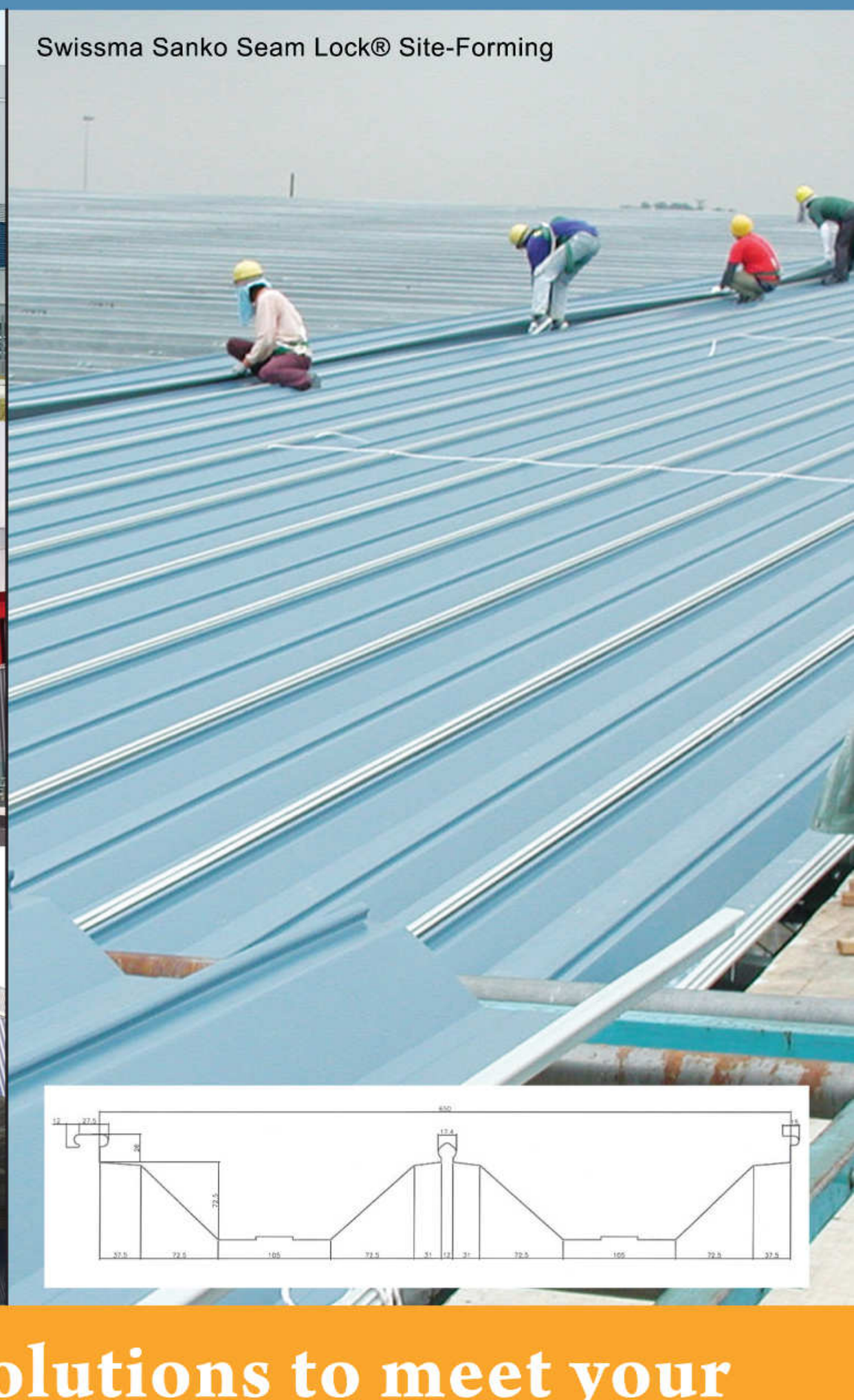
TOTAL RM 3,574,325.85

(ANOTHER RM 3,209,312.87 IS NEEDED)

The Institution would like to thank all contributors for donating generously towards the IEM Building Fund

HELP US TO PROVIDE BETTER SERVICES TO YOU AND TO THE FUTURE GENERATION

www.swissma.com



We customize roofing solutions to meet your acoustic, thermal & other requirements.

- Swissma Sanko has over 41 years of reputable track records in Malaysia.
- Over 18 profiles available.
- All materials are supplied by BlueScope Steel Malaysia & backed by BlueScope Steel Malaysia warranty.
- Up to 30 years warranty using Zincalume® and clean Colorbond®

Contact us for obligation free roof and wall cladding solutions & quotations

SWISSMA BUILDING TECHNOLOGIES SDN. BHD. (444319-T)
Tel: 603-55191360 **Fax:** 603-55101362
E-mail: enquiry@swissma.com

A member of, green building index

ANCHOR-REINFORCED EARTH

Our Strength is Your Confidence

APPLICATION • Bridge Abutment • Land Reclaimation • Housing Development & Temporary Embankment • Other Civil Engineering Application

CTSB

CT CRIB™

The Most Reliable & Cost Effective Retaining Wall System

APPLICATION • Slope Protection • Embankment Stabilization • Housing & Road Project • Other Civil Engineering Application

For enquiry please contact:
CRIB TECHNOLOGIES SDN BHD (564096-A), **ARE WALL (M) SDN BHD** (542608-W)
46-A, SS 22/25, Damansara Jaya, 47400 Petaling Jaya, Malaysia
Tel: +603-7731 7391 Fax: +603-7725 7868 Email: groadesb@yahoo.com Website: http://www.ctsbare.com