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Tel: +(603) 7493 1049 Fax: +(603) 7493 1047
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Website: www.dimensionpublishing.com

Chairman ROBERT MEBRUER

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General Manager SHIRLEY THAM
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Head of Marketing & Business Development JOSEPH HOW
joseph@dimensionpublishing.com

Production Editor TAN BEE HONG
bee@dimensionpublishing.com

Contributing Writers PUTRI ZANINA & LAURA LEE
putri@dimensionpublishing.com
laura@dimensionpublishing.com

Senior Graphic Designer SUMATHI MANOKARAN
sumathi@dimensionpublishing.com

Graphic Designer NABEELA AHMAD
beela@dimensionpublishing.com

Advertising Consultants THAM CHOON KIT
ckit@dimensionpublishing.com

Accounts cum Admin Executive YEN YIN
yenyin@dimensionpublishing.com

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cover note

URBAN PLANNING, ECONOMICS AND HOUSING

by Ir. Tiong Choong Han
Chairman,
Urban Engineering Development Special Interest Group

This month, UEDSIG presents the Cover Story, three feature articles and a forum article, all related to urban engineering development (planning, economics and housing).

The Cover Story by Miss Mun Yee San takes a look at how Greater Kuala Lumpur is doing as a liveable city, in view of peak hour traffic jams and other associated problems.

In the first feature article, Ar. Eric Gan introduces digital tools as the means to greater effectiveness and efficiency in real estate development. In the second article, Ir. Dr Wang Hong Kok explains the roots of challenges facing the common properties management of strata buildings. In the third article, Ar. Alice Leong Pek Lian presents the benefits of green buildings which add value and make buildings more sustainable. Finally, a forum report by Ir. Jagjeet S. Sidhu summarises the salient points from a talk delivered by real estate veteran, Mr. Ngian Siew Siong, on the traits of an accomplished real estate developer. ■

editor's note

by Ir. Razak Yakob
Bulletin Editor

Salam & Hello All IEMers,

By now you would have voted for your representatives to the Council. Congratulations, you have exercised your rights. It is important that we choose people we trust to bring IEM up to the next level. What is the next level?.

For me, I would like to see the number of IEM members matching that of registered BEM engineers. As of 15 February, 2019, there are more than 128,000 registered engineers with BEM: Graduate, Professional and Professional with Practicing Certificate engineers. For the same period, IEM has 48,600 members but 27,000 are student members. Thus the numbers are far too low compared to BEM registered engineers. I believe we engineers should stick together; we are stronger in numbers, sharing our knowledge, networking and more importantly developing the younger engineers. IEM is where engineers come together, physically and virtually to do just that, for the past 60 years. We must grow stronger and adapt to the changing needs of the world. Stay current!

This month, the youngest special interest group, UEDSIG, takes the torch to present "Smart Cities". When Tun Mahathir introduced Vision 2020 in 1991, I envisioned Kuala Lumpur to be sophisticated, with well-lighted futuristic environmentally friendly buildings and "The Jetsons" flying cars. How far are we from this vision?. The articles inside are superb!

Let's continue to engineer our country to a greater height! ■

Is Greater KUALA LUMPUR a Liveable City

How liveable is Kuala Lumpur? Last year, the Malaysian capital city came in at No. 70 in the global ranking of liveable cities[10] released by the Economist Intelligence Unit (EIU) which assesses the most liveable cities in the world[8]. This year, it dropped to No. 78.

by Mun Yee San

Even worse, in just 5 years, it fell from 25th place to a lowly 126th in a list of the most liveable cities for Asian expatriates by ECA International which pointed fingers at high levels of air pollution in KL, coupled with relatively high rates of petty crime. The ranking was based on the latest Location Ratings report published by the global mobility expert.

According to EIU's annual Global Liveability Ranking, the liveability of cities is evaluated based on five broad categories:

1. Stability – crime, terrorism, military conflict, civil conflict.
2. Healthcare – availability and quality of private and public healthcare.
3. Culture & Environment – climate, corruption, social or religious restriction, sporting and cultural availability, food and drink, goods and services.
4. Education – availability and quality.
5. Infrastructure – road, public transport, international links, quality housing, energy, water and telecommunications provision.

11MP VISION OF LIVEABILITY

By visualising city liveability in the near future, including the 11th Malaysia Plan 2016-2020 (11MP), will Greater Kuala Lumpur become a liveable city as according to the Mid-Term Review (2016/2017) of the 11MP?

The 11MP Mid-Term Review

Overall, the 11MP envisions a city with economic opportunities, better public transportation, more affordable and quality housing, improved health facilities, expansion of urban digitalisation and the improvement of waste management.

However, are we truly on track towards "enhanced liveability"?

According to the 11MP Mid-Term Review of its performance from 2016 to 2017, "studies on City Competitiveness Master Plan undertaken for four major cities, namely Kuala Lumpur (KL), Johor Bahru, Kuching and Kota Kinabalu, are at various stages. Concurrently, several initiatives have been implemented to enhance the competitiveness of these major cities, including the provision of better public transportation, construction of more affordable housing, expansion of digitalisation initiatives as well as improvement of waste management".

The 11MP review also reported that, in improving economic density, the built environment of Kuala Lumpur had been optimised through a dynamic planning guideline, i.e. KL Structure Plan 2020[1].

Up to 2017, improvements in KL included the completion of the Mass Rapid Transit 1 (MRT1) and Light Rail Transit 2 (LRT2) in the Klang Valley, the development of MRT2, the enforcement of waste separation at source, the construction of 100,650 units of affordable houses and the establishment of Urban Transformation Centres (UTCs)[1]. All these efforts were undertaken to develop KL as a competitive city from 2016 to 2017.

THE BIG FOUR

Moving on to the New Priorities & Emphasis from 2018-2020 in the Mid-Term Review of the 11MP, a similar adoption of promoting competitive cities as one of the strategies in pursuing balanced regional development can be seen.

It reported that "the Government will continue to leverage on the four major cities identified, namely Kuala Lumpur, Johor Bahru, Kuching and Kota Kinabalu, to accelerate economic growth. These cities will be developed to be more vibrant, productive and liveable to attract and retain talent and firms, while at the same time enhance urban-rural linkages and access".

In the same period (2018-2020), 11MP priorities will be on the implementation of programmes and initiatives identified in the City Competitiveness Master Plan by emphasising on key focus areas[1] which, among others, include urban planning and development, provision of public transport and affordable housing as well as improvement in digital connectivity[1].

In addition, focus will be given to enhancing liveability and inclusiveness amongst city dwellers, particularly the bottom 40% (B40) income group households.

In this regard, city dwellers will be able to have better access to economic opportunities, efficient public transport, affordable housing, improved health facilities and services as well as more green and open spaces[1].

Apart from the four cities, the Government's efforts will, in the next three years, also focus on accelerating development in identified growth areas, which include the National Conurbation (KL, Putrajaya and parts of Selangor including districts of Klang, Petaling, Gombak, Hulu Langat, Kuala Langat and Sepang). These growth areas will be further leveraged to create investment opportunities to spur the urban economy[1].

CITY ON TRACK?

It is great news that, after cost reviews, the Mass Rail Transit Sungai Buloh-Serdang-Putrajaya Line (MRT2) project and LRT3 project which connects suburbs between Bandar Utama and Klang, will proceed ahead, albeit with a significant cost reduction.

However, the MRT3 and KL-Singapore High Speed Rail (HSR) have been postponed to reduce the burden on the country's national debt. The MRT3 line is 40 kms long and a circle line that passes through high-saturation and high-

density urban centres such as Jalan Duta, Setiawangsa, Pandan Indah, Salak South, Bandar Malaysia and Kerinchi[2]. Meanwhile, the HSR Project is expected to bring benefits to both Malaysia and Singapore, including improved connectivity and people-to-people ties as well as catalysing further economic cooperation[3].

Construction of the HSR Project is expected to resume in 2020 while the MRT3 project, according to Transport Minister Anthony Loke Siew Fook's formal answer in the House of Representatives, will only be reviewed when the country's financial status recovers[2].

As the government's main priority right now is to reduce the national debt, it is not expected to launch mega projects in the next three years. How will this affect improved connectivity in the cities? Meanwhile, with the 3rd National Car project to be implemented to boost the local motoring industry, will we expect greater traffic congestion in urban areas?

In February 2017, in a forum on "Urban Development & The Public Realm In Kuala Lumpur" led by Sean Chiao, AECOM Asia-Pacific President, and Mohsen Mostafavi, the Dean of Harvard University Graduate School of Design (GSD), there was an in-depth discussion on the rapid urbanisation of 3 cities in South-East Asia, including Kuala Lumpur[4].

On the question of whether KL was on the right track to becoming one of the world's most liveable cities, Chiao wondered whether the city's urban policy amplified its connectivity and culture.

"Urbanisation problems can be divided into the 3Cs. The first C is Congestion and how to deal with it. The second C is Connectivity, which does not necessarily mean building a monorail and adding new infrastructure does not necessarily mean we'll be better connected. The third C is Culture; Malaysia and KL are unique and strong in terms of natural resources, diversity and cultural heritage. How can we use the building of a city to amplify culture rather than have it fade out?"

THE CONCEPT

Mohsen Mostafavi viewed a liveable city as one that's very diverse concerning interactions with people[4]. "I would say walkability is an important part of the experience of urban life, so that you don't have to buy a car or drive and park in a mall. We need to be able to walk to places and think about the relationship between indoor and outdoor public spaces. For example, through shading and mists, you can create outdoor spaces that feel like temperate zone environments that will be comfortable for the body, so you don't always have to be inside a shopping mall," he explained.

Meanwhile, at the 10th World Class Sustainable Cities (WCSC) Conference held in September 2018, Riccardo Marini, an architect and chartered town planner in Denmark, expressed a similar opinion when he suggested that sustainable cities must be created for human habitat and not vehicles[5]. "A liveable city is where a child can walk on the streets and pavements."

Apart from pavements for walking, affordable housing is always a priority. At the same conference, the Chairman of REHDA Institute & Board of Trustees, Dato' Jeffrey Ng Tiong Lip, expressed hope that the public sector would allocate land for housing development in the future[5]. His recommendation was in line with the findings of a recent MRT report, "The Affordability of Homes Surrounding MRT Stations". This research paper, presented by the Centre for Governance and Political Studies (Cent-GPS), showed that the 1Malaysia People's Housing (PR1MA) built by the Federal Government was not located within 1km from any MRT station[6]. Of 31 MRT stations studied, only 8 had housing nearby deemed affordable for a median household income (see Figure 1) in Selangor of RM7,226. The report recommended that the next MRT line should pair with other government initiatives such as PR1MA and other affordable housing initiatives.

Interestingly, the Group Chairman of Bukit Kiara Properties, Dato' Alan Tong, who has over 50 years of experience in property development, promotes the 8-80 Cities concept as established by placemaking expert Gil Penalosa[7].

Simply put, the concept means that a city should be liveable and safe enough for both an 8-year-old and an 80-year-old. If a city is safe enough for these two age groups to live in, then it is basically liveable and safe for everyone else.

Alan Tong's idea is in line with recommendations from other experts. I agree with his statement that "8-80 Cities is a simple, yet very powerful concept if we follow through the

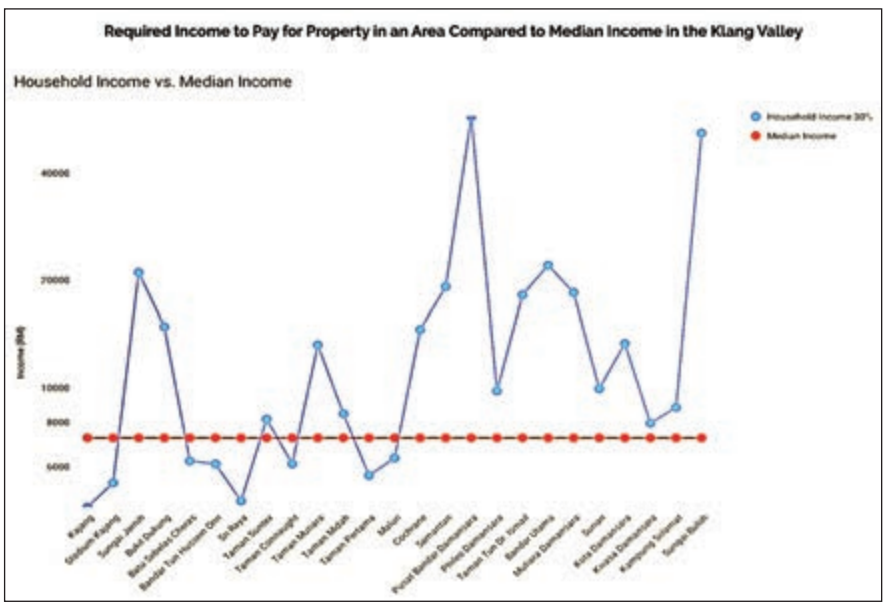

Figure 1: Household Income vs Median Income[6]

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principles of 8-80 Cities in planning the future of our capital city, Kuala Lumpur, and other cities in our country."

CURRENT STATUS OF KL

In 2017, Kuala Lumpur was placed at No. 70 in the Global Liveability Cities Ranking[10] released by the Economist Intelligence Unit (EIU). This year [9,11,12], Hong Kong is ranked 37th, Singapore 35th, Tokyo 7th and Osaka 3rd while Kuala Lumpur, unfortunately, has dropped to 78th.

It also ranked a lowly 126th in the list of most liveable locations for Asian expats, published by ECA International in March 2018[13]. The annual ranking is based on the latest Location Ratings survey issued by the global mobility expert. The ECA Location Rating system measures a number of factors to form an assessment of the overall quality of living in over 480 locations worldwide. Factors assessed include climate, availability of health services, housing and utilities, isolation, access to a social network and leisure facilities, infrastructure, personal safety, political tensions, and air quality.

Lee Quane, Regional Director (Asia), at ECA International, said: "In the last five years, Kuala Lumpur has seen a drop in ranking, falling from 25th to outside the Top 100. While other locations have improved air quality, the high levels of pollution in Kuala Lumpur, coupled with relatively high rates of petty crime, have seen the city slip down the rankings." However, he noted the Malaysian capital scored well in categories such as utilities and the availability of housing.

CONCLUSION

Experts cannot emphasise enough the importance of expanding public transportation infrastructure and increasing its usage if Kuala Lumpur is to become a liveable city.

But despite only expecting Kuala Lumpur to be a city with enhanced liveability instead of high liveability in the next three years, Malaysia is still committed to the 2030 Agenda for Sustainable Development (2030 Agenda).

The strategies and initiatives in the 11MP are mapped to support Sustainable Development Goals (SDGs); we are hopeful that in future, our cities will be "cities for all where no one and no place are left behind[1,14]." ■

Country	City	Rank
Austria	Vienna	1
Australia	Melbourne	2
Japan	Osaka	3
Canada	Calgary	4
Australia	Sydney	5
Canada	Vancouver	6
Canada	Toronto	7
Japan	Tokyo	7
Denmark	Copenhagen	9
Australia	Adelaide	10

The 10 Most Liveable Cities in the Global Liveability Index (2018)[9]

REFERENCES

[1] Ministry of Economic Affairs. (2018). Mid-Term Review of the Eleventh Malaysia Plan 2016-2020. Putrajaya: Economic Planning Unit, Ministry of Economic Affairs, Malaysia.

[2] Sun Media Corporation Sdn. Bhd. (2018, July 31). MRT 3 project postponed, not scrapped: Loke. Retrieved from The Sun Daily: http://www.thesundaily.my/news/2018/07/31/mrt-3-project postponed-not-scrapped-loke

[3] BERNAMA. (2018, September 5). Singapore agrees to defer HSR construction to May 2020. Retrieved from Bernama: http://www.bernama.com/en/news.php?id=1639608

[4] Star Media Group Berhad. (2017, March 22). Making Kuala Lumpur more liveable. Retrieved from Star2.com: https://www.star2.com/living/2017/03/22/making-kuala-lumpur-more-liveable/

[5] Star Media Group Berhad. (2018, October 6). Plan liveable cities for the future now. Retrieved from The Star Online: https://www.thestar.com.my/metro/metro-news/2018/10/06/plan-liveable-cities-for-the-future-now/#KorwRE7OAoVLFIRI.99

[6] Centre for Governance and Political Studies. (2018). The MRT Report: The Affordability of Homes Surrounding MRT Stations. Petaling Jaya: Centre for Governance and Political Studies.

[7] Tong, A. (2018, April 14). Our cities should adopt '8-80' concept. Retrieved from The Star Online: https://www.thestar.com.my/business/business-news/2018/04/14/our-cities-should-adopt-880-concept/#hkDK4bTShcQqCb3b.99

[8] The Economist Intelligence Unit Limited. (2018). The Global Liveability Index. Retrieved from The Economist Intelligence Unit: http://www.eiu.com/topic/liveability

[9] The Economist Intelligence Unit Limited. (2018). The Global Liveability Index 2018: A Free Overview. Retrieved from The Economist Intelligence Unit: http://www.eiu.com/Handlers/WhitepaperHandler.ashx?fi=The_Global_Liveability_index_2018.pdf&mode=wp&campaignid=Liveability2018

[10] Sun Media Corporation Sdn. Bhd. (2017, August 17). KL is second most liveable city in Southeast Asia. Retrieved from The Sun Daily: http://www.thesundaily.my/news/2017/08/17/kl-second-most-liveable-city-southeast-asia

[11] THE NATION. (2018, August 14). Bangkok ranks 98th in EIU Global Liveability Index. Retrieved from The Nation: http://www.nationmultimedia.com/detail/national/30352141

[12] South China Morning Post Publishers Ltd. (2018, August 14). Hong Kong reclaims lead over Singapore in global liveability rankings as 'social unrest drops' four years after Occupy. Retrieved from South China Morning Post: https://www.scmp.com/news/hong-kong/hong-kong-economy/article/2159518/hong-kong-reclaims-lead-over-singapore-global

[13] Employment Conditions Abroad Limited. (2018, March 13). Taiwan outside the top 50 most liveable locations for Asian expats. Retrieved from ECA International: https://www.eca-international.com/news/march-2018/taiwan-outside-the-top-50-most-liveable-locations

[14] UN Habitat. (2018, February 13). Kuala Lumpur Declaration on Cities 2030. Retrieved from WUF9: http://wuf9.org/wp-content/uploads/KL-Declaration-English.pdf

[15] Suruhanjaya Pengangkutan Awam Darat (SPAD). (2015). Klang Valley Mass Rapid Transit (KVMRT) Project. Retrieved from Suruhanjaya Pengangkutan Awam Darat: http://www.spad.gov.my/land-public-transport/rail/klang-valley-mass-rapid-transit-kvmrt-project

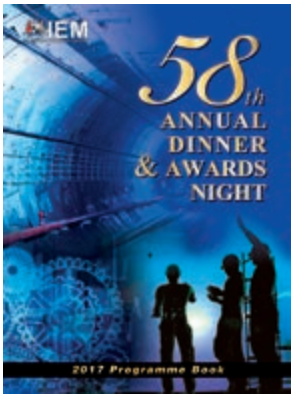
[16] President and Fellows of Harvard College. (2015, December 9). Dean Mohsen Mostafavi named one of Design Intelligence's "25 Most Admired Educators". Retrieved from Harvard University Graduate School of Design: https://www.gsd.harvard.edu/2015/12/dean-mohsen-mostafavi-named-one-of-designintelligence-s-25-most/

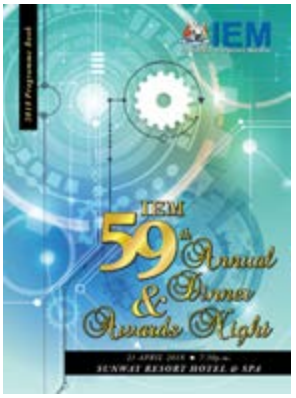
Author's Biodata

Mun Yee San *holds a Chemical Engineering with Environmental Engineering MEng (Hons). Previously a journalist in a local newspaper, she's currently working as a correspondent in the Kuala Lumpur Bureau of a Japanese news agency.*

The Institution of Engineers, Malaysia

IEM 60th Annual Dinner and Awards Night 2019 Programme Book





We are pleased to inform that IEM will be holding the 60th Annual Dinner and Awards Night 2019 on **20 April, 2019**. Dimension Publishing has been appointed to put together the Annual Dinner Programme Book which will be circulated to all **1,200 guests** on that night at **Sunway Resort Hotel & Spa, Petaling Jaya**.

It is an annual event organised by IEM to present awards to winners of projects and to announce the new committee for year 2019/2020. Special guests of honour will be invited to officiate at the event.

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FEATURE

RISE OF THE DIGITAL REAL ESTATE DEVELOPER

Ar. Eric C.L. Gan

Digitalisation is the buzzword in today's business environment as more and more businesses and entrepreneurs adopt e-business models and practices in the digital economy as part of the 4th Industrial Revolution (4IR). The transformation comes as businesses and entrepreneurs adopt digitalisation to drive productivity gains, innovation and success.

In Malaysia and Singapore, digital hubs are being created to cater to businesses such as Malaysia Digital Free Trade Zone (led by China's Alibaba Group) and Singapore Digital Hub in Punggul District, Singapore. Some examples of how business start-ups have become giant enterprises by adopting business digitalisation are online e-commerce retailers such as Alibaba and Amazon as well as digital sharing businesses such as AirBnB, Uber, Grab, YouTube and Spotify Music.

WHAT IS DIGITALISATION?

Digitalisation and its disruption to existing businesses impact all industries including construction and Real Estate Development (RED). Before we discuss further, let us define digitalisation as the integration of digital technologies into everyday life and businesses and the process of converting current manual work processes and information into digital format to improve productivity and deliver results in real time on-demand (i.e. online instant access and delivery).

REAL ESTATE DEVELOPMENT

Though real estate developers recognise the rising trend of digitalisation and its impact on change, how can they embrace and meet the challenges?

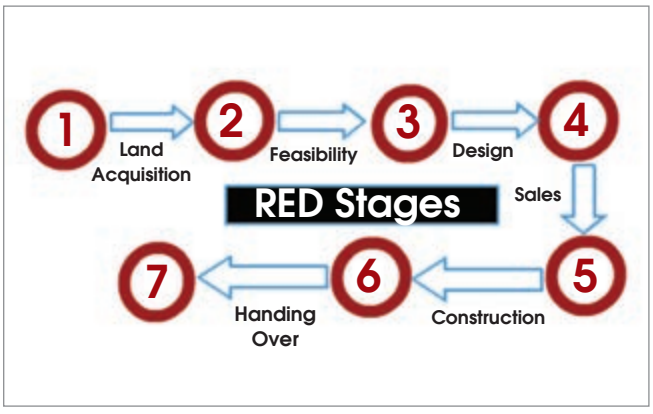
To understand the digitalisation of RED, we must first understand the process of procuring "raw land" and monetising it to make a profit. Essentially RED business boils down to 1 key principle, i.e. turning land into financial profit. This is not a simple process though, as it involves in-depth knowledge, experience and skills to acquire "raw land" and then convert it into "developable land".

Therefore, RED or property development involves the process of buying and converting "raw land" to "developable land" and the constructing of buildings on the land to be sold as whole buildings or units within the buildings (known as strata units). These include houses, apartments, offices and retail shops, etc.

In the process, the real estate or property developer makes a good profit. Over time, by acquiring more land and repeating the process, the developer will become rich.

Basically, the RED process involves the following 7 key stages, as shown in the flow chart:

1. Land acquisition.
2. Feasibility/viability study.
3. Designing the product.
4. Getting the necessary legal/statutory approval.
5. Selling the product.
6. Constructing the building and facilities.
7. Handing over to purchasers.



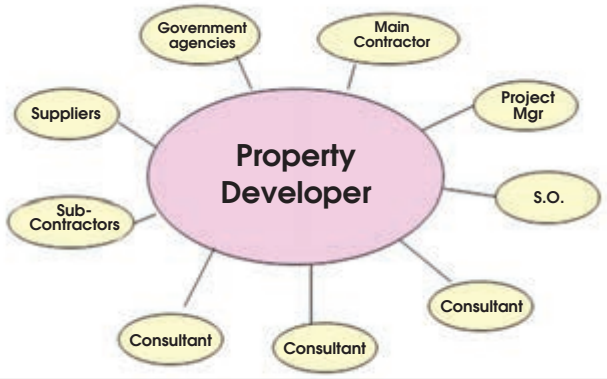
The developer must have the knowledge, experience and expertise to plan, manage, execute and deliver his products (buildings, facilities etc.) successfully within the legally contracted time-frame and cost. He must also be able to raise the initial capital, obtain financing to acquire the land, pay for the construction and assist purchasers to obtain end-financing and property (strata) title.

PROFITS & RISKS

While the RED business is certainly profitable, there are also risks such as:

1. It takes a long time, say 10-15 years, for a new developer to acquire the necessary knowledge and experience in order to have in-depth "know-how" to carry out the business successfully.
2. In the absence of the required "know-how" due to the lack of knowledge and experience, a new developer can employ a team of experts to manage and execute the business on his behalf. However, this will incur substantial initial cost and at a point when the business has yet to receive revenue. In addition, there is the risk of these experts resigning and the difficulty of getting replacements, especially during a property boom period.
3. RED involves many stakeholders such as consultants, local authorities, financial institutions, contractors and building material suppliers which are outsourced parties. It would require considerable knowledge and skills for a new developer to manage these diverse parties and vendors well. See illustration below.

Project Stakeholders in a property development project



Project Stakeholders are individuals & organisations who are actively involved in the project, or whose interests may be *positively or negatively affected* as a result of project execution or successful project completion

Therefore, without the necessary knowledge, experience and know-how, a new developer is at risk of his project being delayed or, worse, abandoned as these will lead to financial loss.

ADDRESSING THE KNOWLEDGE/KNOW-HOW GAP

Apart from spending years to obtain on-the-job experience, how can a new developer to address the knowledge and "know-how" gap? Is there a way to self-learn or accelerate RED knowledge and know-how?

The writer's experience in developing digital knowledge methodology for the RED business shows that it is possible to accelerate the learning curve, via the 4-Step Methodology as outlined below (refer to illustration):

1. Organise the RED knowledge contents within a Digital RED canvas.
2. Execute the RED Project using a Digital RED Master Execution Map.
3. Monitor the project online virtually.
4. Compile the RED knowledge content in Digital Document (templates) Folders.

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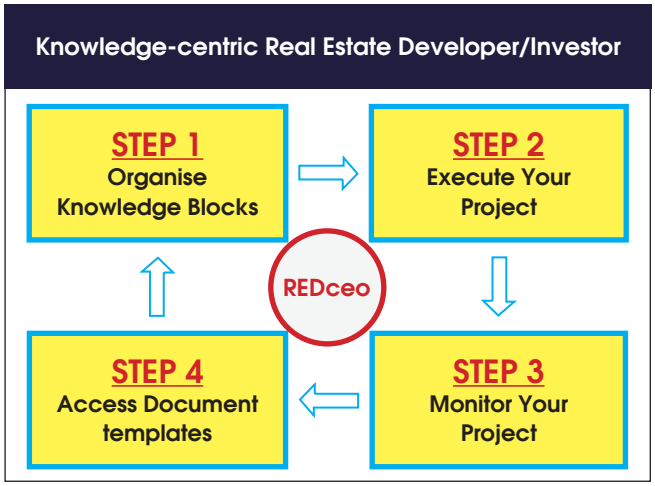
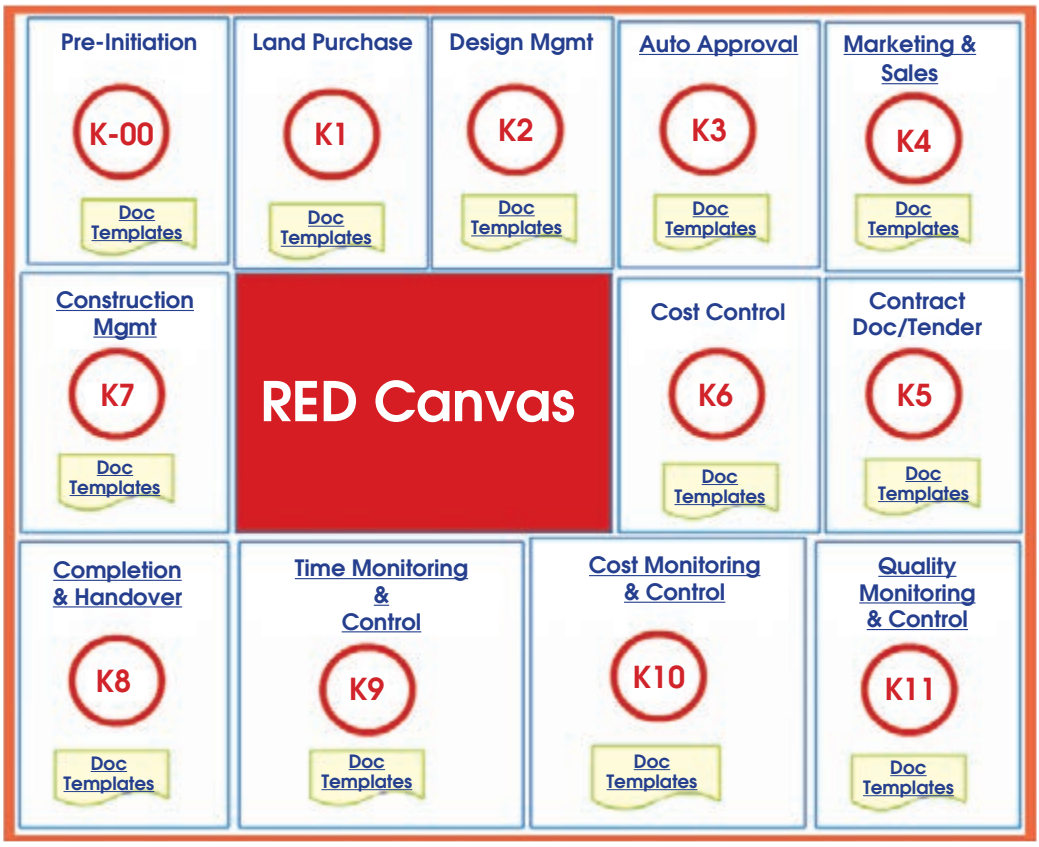


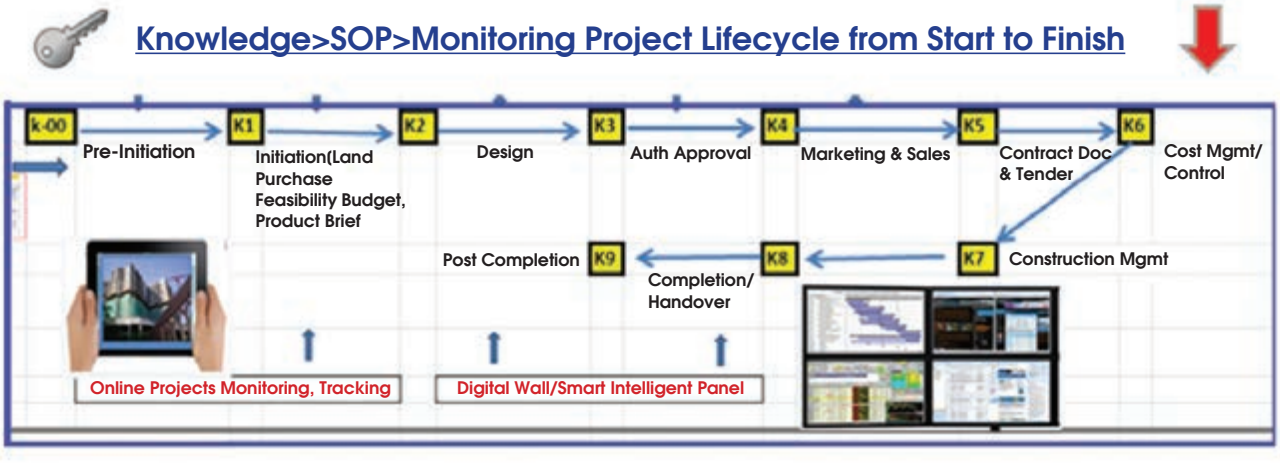
4-STEP METHODOLOGY

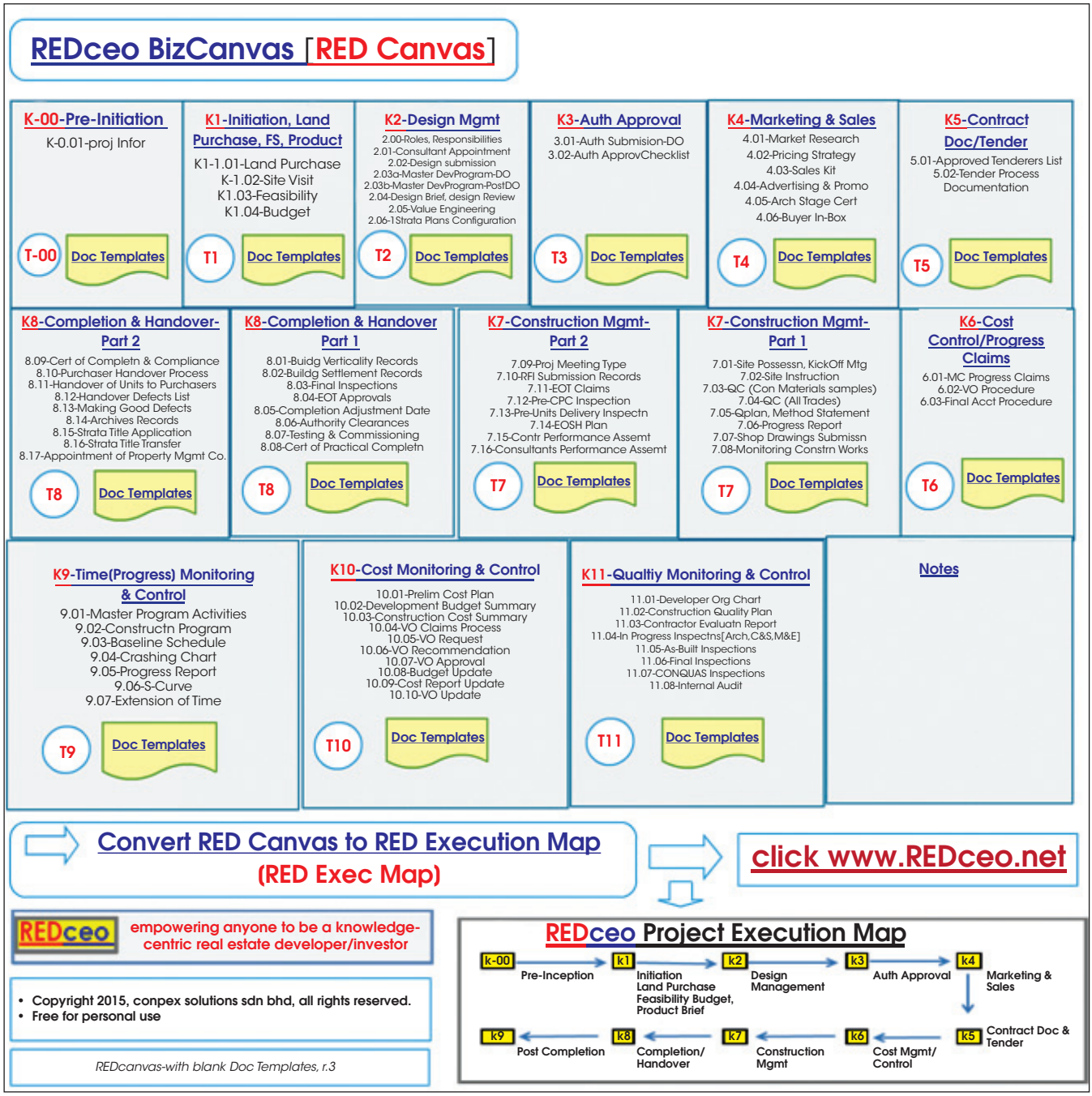
The 4-Step Methodology enables a new developer to organise, compile and manage his RED knowledge on a Do-It-Yourself (DIY) digital platform in order to plan, manage and execute the development project successfully across the project lifecycle with an online centralised project delivery view (see illustration).

STEP 1: CREATING RED CANVAS

The RED Canvas is a one-page business canvas that can be used by all key stakeholders (CEOs, financiers, development/project managers, consultants, contractors, purchasers etc.) to have a helicopter view of all the activities on a single sheet. It is similar to the popular Business Model Canvas and Lean Canvas for business startups.







What is the purpose of the RED Canvas? It enables a new developer to understand how activities such as land sourcing, feasibility studies, design, authority approvals, sales launches, construction management etc. can be organised as knowledge content. Knowledge content that supports or is relevant to the RED activities can be created and deposited in digital folders or file cabinets called K-Blocks (Knowledge Blocks). The K-Blocks can then be organised into a digital map called Digital RED Canvas.

The RED Canvas allows key stakeholders to have an overall view of the entire RED process and development activities. A snapshot illustration of the Digital RED Canvas is shown on page 15.

A full illustration of the Digital RED Canvas is shown above: The RED Canvas can be used by CEOs, project directors or project managers to identify all the key activities and stakeholders responsible for these activities as well as use it as a digital tool to access and evaluate the capability and performances of critical stakeholders such as development consultants, contractors and government approving authorities. By understanding the strengths and weaknesses of the stakeholders, the RED CEO will then be able to select strong performing stakeholders while managing the weak or poor performing ones. This will reduce the risk of business failure due to wrong selection or ineffective management of weak stakeholders.

End of Part 1. Part 2 will cover the creation of Digital RED Master Execution Map using process mapping. ■

Author's Biodata

*Founder of Digital Red Technology **Ar. Eric C.L. Gan** is an architect turned prop-tech speaker for the real estate and construction industry. Contact him at www.ericgan2.com and www.redceo.net.*

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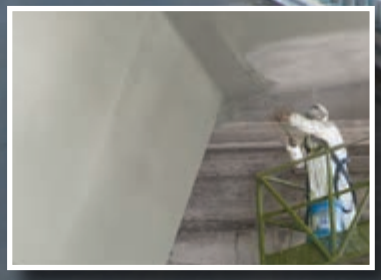

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FEATURE

UPHILL TASKS IN GOVERNING COMMON PROPERTIES: FROM HARDIN TO OSTROM

Ir. Dr Wang Hong Kok

Let us start by clarifying the following terms: Governance, Self-Governance, Institutions and Governing Bodies.

1. Governance refers generally to the management of a resource under certain prescribed rules.
2. Self-Governance is the management of a resource by the participants.
3. Institutions may be described as human-designed organisations or arrangements which promote certain practices such as formal rules (the law of a country) or informal constraints (norms, culture, practices) so that a set of behaviours can be moulded in the participants.
4. Governing Bodies are groups entrusted under the law to manage a resource.

This article may be in the realm of sustainable environment, Common Pool Resources (CPR) management, urban economics or public policy.

The severity and urgency facing the governance of common properties such as high-rise condominiums, can be best illustrated by two events.

1. At the Property Management Time Bomb 2016 seminar, Datuk Pretam Singh commented that cases filed with the Strata Management Tribunal (SMT) against parcel holders for not paying service charge, rose three times from 400 cases in the July-December 2015 period to 1,192 cases in the January-June 2016 period (The Edge Prop, 19 July, 2016).
2. The Ministry of Housing & Local Government (KPKT) announced an increase in the number of appointed presidents from 19 to 29 as a consequence of a surge in cases filed with SMT, which numbered 2,355 for the January-June 2018 period (The Edge Prop, 9 July, 2018).

Due to the lack of appreciation for the need to pay service charges to the governing body, many quarters fear the reality of properties turning into urban slums. Joint Management Body Malaysia pointed out that "community living starts with the responsibility of parcel holders making prompt payment of service charges" (JMB Malaysia, 25 March, 2016).

This situation is set to worsen with no solution in sight yet. "The current ratio of landed residential property to high-rise property is 70:30, and it will be 50:50 by 2025," said Tan Sri Eddy Chen, President of Building Managers Association of Malaysia (BMAM) (*The Edge Prop*, 9 December, 2016).

Noraziah Azmin Abd Latif Azmi (2006) commented that poor payment of service charges was due to parcel holders being dissatisfied with the maintenance work, while Dr Tiun Ling Ta (2009) cautioned that Malaysia's property management practice was in the formative stage and that more time was needed to improve it.

However, both Noraziah and Tiun represent a host of researchers who are viewing this problem of parcel holders refusing to pay service charge, from a rationality perspective. The very nature of common properties is not dealt with. Other researchers explore failures of governing common properties from the residents' satisfaction angle by putting the blame on governing bodies.

Ir. Dr Wang Hong Kok (2013) throws new light on this by equating natural commons (such as seas, rivers, fisheries, forests, air) with man-made commons (such as the common properties of condominiums) where the former has been the target of intense research in the last four decades within CPR management literature. Both commons are self-governed since the government is not involved in the day-to-day management.

This short article focuses on the nature of the commons as observed by University of California, Santa Barbara Professor Garrett James Hardin (1968) and University of Indiana Professor Elinor Ostrom (1990) as well as the experience learnt, which can be applied to the managing of common properties of condominiums. Two questions are raised here.

1. Why are commons hard to manage?
2. What are the uphill tasks in managing the common properties of condominiums?

TRAGEDY OF THE COMMONS

Unregulated grazing on common land can bring disaster to herdsmen who depend on it for a living. This was the key argument of Hardin (1915-2003), in his now popular metaphor, "The Tragedy of the Commons", adapted from William Forster Lloyd's 1883 term, which appeared in Science 1968.

The Concept: Consider pasture that is shared by a few cattle herdsmen. In the beginning, each keeps only a limited number and the pasture appears in good condition. However, one day, one herdsman decides to increase the

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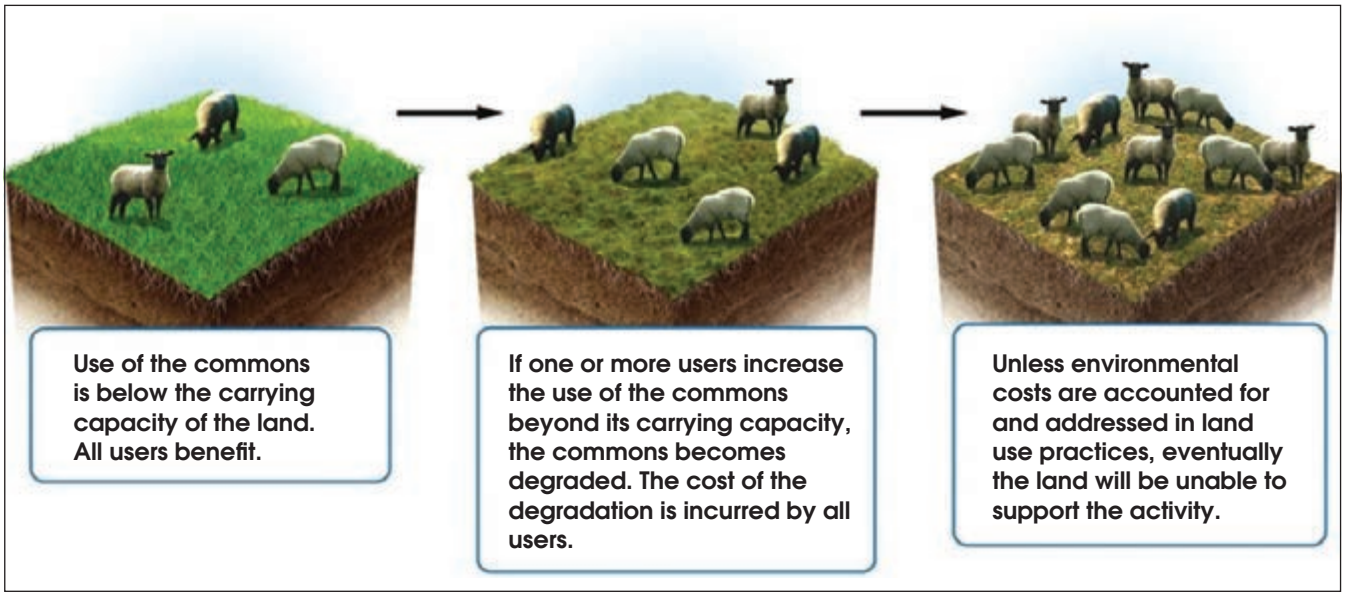

Figure 1: The Tragedy of The Commons (source: https://usu.instructure.com/courses/444419/pages/lecture-4-tragedy-of-the-commons-and-a-land-ethic. Accessed: 11 September 2018)

number of cattle as he will benefit from having more cattle. What if all the other herdsmen have the same thought and similarly increase their number of cattle?

It will come to a point when the pasture reaches maximum capacity and can no longer cater to the increase in number of animals; this is a case of over-exploitation of natural resources and soon the pasture is ruined.

So, freedom to use the commons (pasture) mindlessly without considering the wellbeing of the resource will bring ruin to all involved. In Hardin's words, when a common is unregulated, "inherent logic of the commons remorselessly generates tragedy". Free-riding and shirking behaviours are expectedly rampant in failed commons (Figure 1).

Relevance to Common Properties: Does the above narration also apply to the governance of common

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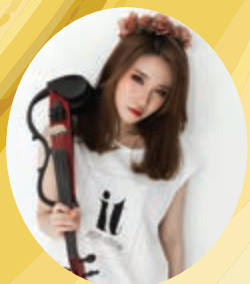

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properties in condominiums? Indeed, one can draw a parallel comparison. Herein, pastoral land takes the form of common properties. The number of tenants allowed to live in a condominium by parcel holders may well go beyond the designed capacity.

Unregulated grazing by cattle takes the form of exploitation of parcel holders/tenants who abuse common properties by disobeying rules, littering, vandalising common properties such as lifts and corridors and not subscribing to the mandatory service charge payments.

Preventing Ruin in Common Properties: Why are commons (or more precisely common goods) exploited and subjected to abuse? Hardin suggested a need for mutual coercion and enforcement among parcel holders as a means to keep the commons under control.

While it appears simple on paper, obstacles can arise from such implementation. The first challenge is the sheer number of parcel holders/tenants which makes socialising difficult. The second is making the norms, practices and rules acceptable to all that facilitate governance.

What can be learnt from these obstacles? Firstly, when parcel holders/tenants come to live together, collaboration and cooperation should be encouraged. Secondly, greater government intervention/taxation should be allowed, for example, a penalty on service charge defaulters can be enforced. Effective enforcement of SMT on defaulters is another example. Finally, informal and formal property rights can be promoted but these can bring about several challenges in implementation in newly completed projects where governing bodies may not be able to build a credible reputation so quickly.

Compared to Hardin's pessimism about the natural commons' conditions and the uphill task of self-governing, Ostrom and her research allies were more positive in their empirical evidence, which would be discussed in the next section.

PRINCIPLES OF GOVERNING COMMONS

Issue of Open Access: Hardin believed only private properties/private goods and public properties/public goods could be maintained. Private properties are protected by individuals while public properties are protected by the government. The commons/common goods are thus left poorly maintained since ownership is uncertain. Samuelson (1954) and Ostrom (1977) came up with a list of different property classes.

Hardin pre-supposes all commons are open access. Many researchers believe by enclosing the commons and by promoting cooperation among participants, sustainability has a chance.

Will self-governance of common properties in condominiums stand a chance since they are normally enclosed by walls? When access is not restricted but given to anybody, and turnover of membership is high, this will fail since it is still "a disguised form of open access" (Wang, 2013).

A noteworthy point, according to Patt (2017), to overcome "The Tragedy of the Commons" is not about economics (well-maintained properties can enhance value), but more about better networking among participants (collaboration & cooperation), instilling a clear understanding about the nature of the commons among participants and institutions that set rules (seen as informal and formal property rights).

Examples of Self-Governed Natural Commons: Ostrom, a co-recipient of the Nobel Prize for Economic Science 2009, provided several cases of successful self-governed natural commons in her 1990 book, *Governing The Commons*, which debunked Hardin's pessimism (Table 1).

Table 1: Long-Enduring, Self-Organised and Self-Governed Common Pool Resources (CPRs) [Source: Ostrom, E. (1990, pp. 61-90)]

	COMMUNAL TENURE IN HIGH MOUNTAIN MEADOWS AND FOREST	HUERTA IRRIGATION INSTITUTIONS	ZANJERA IRRIGATION COMMUNITIES IN THE PHILIPPINES
Examples	Torbel, Switzerland	Valencia	Zanjera
	Hirano, Nagaike, and Yamanoka villages in Japan	Murcia and Orihuela	
		Alicante	

Long-enduring self-governed natural commons located in Switzerland, Japan, Spain and Philippines were assessed. The youngest was 100 years old and the oldest, 1,000 years. What was the secret recipe? What were the common denominators? According to Ostrom (1990, pp. 88-91), there were six.

First, the environment in each common was complex, ranging from forests in Switzerland to irrigation schemes in the Philippines. Second, the population size in each common had remained relatively stable over a long period.

Third, established norms were accepted by all participants due to the homogeneity of participants (in terms of skills, knowledge, ethnicity and race). Fourth, rules were set but could change to suit the needs. Fifth, operational rules were devised according to local circumstances. Sixth, attributes of physical system and cultural consideration influenced the choice of rules.

In essence, self-governed commons may be studied along four dimensions: Context, physical attributes, rules-in-place and the nature of participants.

Principles of Self-Governance in Natural Commons: The role of the institution was a subject of close study by Commons (1932). A successful institution set rules, infused order and resolved conflict (Commons). See Figure 2 (central column). Ostrom's eight governing principles are depicted in the left column, while the conditions for

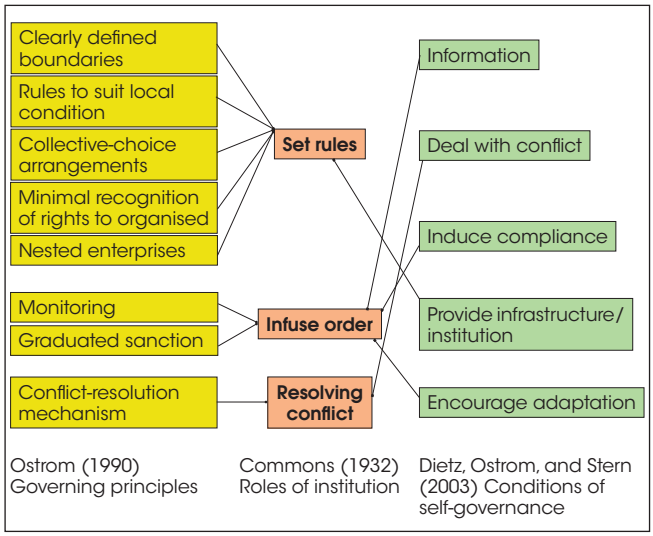

Figure 2: Governing Principles, Roles of Institution, and Governing Conditions

successful self-governed commons are shown in the right column).

In self-governed commons, the governing bodies "are deemed successful if institutions enable individuals to achieve productive outcomes in situations where temptations to free-ride and shirk are ever present," Ostrom explained (1990, p. 15).

Ostrom, Stern & Dietz (2003) also grouped five governing principles as associated with setting the right rules, such as amount of service charge for prompt payment, no littering, no vandalism, no keeping of pets and keeping noise level down, etc.

As shown in Figure 2, infusing order within the commons requires every participant to be alert in order that a rule breaker will be reported and reprimanded; resolving conflict requires the governing body to have certain skills-experience and this takes time and effort.

Uphill Tasks in Governing Common Properties: From the above findings, self-governed common properties are likely to face three different challenges. Firstly, how can rules be set for compliance by parcel holders/tenants if most governing bodies have a short history (new institutions), unlike natural commons that have hundreds of years of existence and experienced trials and tribulations? Some governing bodies have been accused of not keeping their accounts properly. So, the first task is to install a credible institution (Dietz, Ostrom & Stern, 2003).

Secondly, adaptation of parcel holders/tenants to the local environment is key to infusing order by governing bodies (Dietz, Ostrom & Stern, 2003). On the other hand, the diversity of those living in condominiums makes consensus-building difficult. The high turnover of tenants can also exacerbate the situation. Interestingly, successfully-run natural commons have homogeneity in terms of ethnicity and race.

Thirdly, expecting the governing body to resolve conflicts among parcel holders/tenants can be difficult, due to lack of knowledge and training (Tiun, 2009; Wang, 2013).

CONCLUSION

This article has addressed the two questions raised. Firstly, commons are hard to manage due mainly to their very nature as a form of common goods, a point missed by many local researchers on condominium management. No doubt there are instances of success as described in "Governing Commons" but these are the exception rather than the rule.

Secondly, the article equates natural commons to man-made commons given their nature as common resources where ownership (property rights) is uncertain. The main uphill challenges to set rules, to infuse order and to resolve conflict by governing bodies, have been discussed. The role of institution in self-governance of common properties should also be further encouraged. ■

REFERENCES

[1] The Edge Prop (2016), https://www.edgeprop.my/content/803480/strata-management-tribunal-receives-1192-cases-date-year. The Edge Prop, 19 July 2016.

[2] The Edge Prop (2018), https://www.edgeprop.my/content/1403748/kpkt-appoints-more-presidents-tackle-rising-tribunal-cases. The Edge Prop, 9 July 2018.

[3] JMB Malaysia (2016), http://jmbmalaysia.org/service-charges-under-strata-title-property-in-malaysia, JMB Malaysia, 25 March 2016.

[4] The Edge Prop (2016), https://www.edgeprop.my/content/999693/property-management-crucial-ensuring-quality-urban-living, The Edge Prop, 9 December 2016.

[5] Noraziah Azmin Abd Latif Azmi (2006), The study of problems faced by property management in managing the high rise condominium in Malaysia, http://eprints.utm.my/id/eprint/4071/, accessed on 11 September 2018.

[6] Tiun, L. T. (2009), Managing high-rise residential building in Malaysia: Where are we? http://www.inspen.gov.my/inspen/v2/naprec/naprec6.pdf, accessed on 11 September 2018.

[7] Wang, H. K. (2013), Governing common properties of low-cost flats in Selangor: Issues and challenges, http://studentsrepo.um.edu.my/4136/1/Publication_thessis_complete%2C_23.10.2013.pdf, accessed on 11 September 2018.

[8] Hardin, G. (1968), The Tragedy of the commons, http://www.garretthardinsociety.org/articles/art_tragedy_of_the_commons.html, accessed on 11 September 2018.

[9] Ostrom, E. (1990), Governing the commons: The evolution of institutions for collective action, Cambridge University Press, https://wtf.tw/ref/ostrom_1990.pdf, accessed on 11 September 2018.

[10] Samuelson, P. A. (1954), The pure theory of public expenditure, The Review of Economics and Statistics (36) (4), 387-389, https://courses.cit.cornell.edu/econ335/out/samuelson_pure.pdf, accessed on 11 September 2018.

[11] Ostrom, V., and Ostrom, E. (1977), Public goods and public choices, http://johannes.lecture.ub.ac.id/files/2012/02/Public-Goods-and-Public-Choices.pdf, Indiana University, Workshop in Political Theory and Policy, accessed on 11 September 2018.

[12] Patt, A. (2017), Beyond the tragedy of the commons: Reframing effective climate change governance, https://www.sciencedirect.com/science/article/pii/S2214629617301433, accessed on 11 September 2018.

[13] Commons, J. R. (1932), The problem of correlating law, economics, and ethics, Wisconsin Law Review (8), 3-26, http://repository.law.wisc.edu/items/show/129711, accessed on 11 September 2018.

[14] Dietz, T., Ostrom, E., and Stern, P. C. (2003), The struggle to govern the commons, Science (302), 1907-1912, https://pdfs.semanticscholar.org/d2e2/97f50d7df67f1757c0cdf4572a2693a1fa88.pdf, accessed on 11 September 2018.

CONGRATULATIONS

Congratulations to

Tuan Ir. Haji Ismail bin Abdul Rahman

on being promoted as **Pengarah Kerja Raya Melaka** effective on **11 February 2019**.

FEATURE

GOING GREEN CERTIFICATION: VALUE CREATION & MARKETING

Ar. Alice Leong Pek Lian

Today, everyone is talking about green buildings. The green movement has grown globally, spawning with new catchwords and phrases such as sustainability, 4-Rs, Sustainable Development Goals (SDG).

Most countries have one green building tool and Malaysia has several but the most established is still Green Building Index (GBI) Tool.

As a professional architect with 14 years of experience and a qualified GBI facilitator, I must say many people are still confused when it comes to green buildings. Many professionals and stakeholders in the construction industry feel and assume that it's too expensive to go for green certification, without realising that this will add value to their property, wellbeing, etc.

A green certification is a smart way to open the door to the international platform for sustainable building design and construction, which GBI already does. Attaining GBI certification demonstrates environmentally responsible building practices. This gives a big boost to the image of both building owners and project teams, which consist of consultants and contractors involved in the design and construction of the GBI certified building. A track record of GBI certified projects creates impact and helps professionals, stakeholders and builders become recognised as leaders in the construction industry.

A green certification carries significant tangible incentives in daily lifestyles. Generally, green buildings are more popular, retain higher property values and attract more commercial construction companies to the industry field. They also definitely qualify for incentives such as these listed below:

1. **Capital Expenditures - Tax incentives**
   - Federal government grant ITA
   - Local government grant extra or increasing in GFA
2. **Operating Expenditures – Non-tax incentives**
   - Reduction in council rates
   - Reduction in maintenance
   - Rental…etc

A green certification is not about squeezing all the latest green building technologies into a development. When it comes to operating a green building, the savings generated involves more than an integrated design system. It also covers energy usage, water usage, site context, maintenance, operations, healthcare etc. which can either offer short-term or long-term investment returns.

The economic/environmental performance of a project can be maximised with proper advice and guidelines for the monitoring of reduced wastes and redundancy wherever possible during and after construction, and by observing the Triple Bottom Line (TBL) and Life Cycle Costing (LCC) through an accounting framework which consists of three main parts: Social, environmental/ecology and economics.

The green cost can be categorised into 2 main streams:

1. **Cost of going for green certification**
   - Registration fees with GBI (a one-time cost).
   - Consultancy fees (appointing GBI facilitator and/or Commissioning & Testing Specialist, but not compulsory).
2. **Capital expenditure costs**
   - Saving in M&E systems (more efficient and flexible equipment).
   - Reducing maintenance.
   - Result in less space required for plantrooms.

While green buildings do cost more initially, the real savings are in lower operating costs (20%-50%) for the life cycle of the buildings, through the following physical improvements:

a) Environmentally integrated planning
b) Site Orientation
c) Energy saving technologies
d) On-site renewable energy technologies
e) Natural daylight and ventilation
f) Improved building envelope design
g) Downsized HVAC and other equipment

The most straightforward value proposition of owning a green building is the reduction of utility bills; this can be observed through the steadily improving energy codes, green certification requirements like GBI and well-executed retrofits. The energy savings realised reduces operating

expenses and increases Net Operating Income (NOI), with high chances for positive effects on values to be obtained. However, value attributed to these savings is dependent on the lease structure; owners can only directly recoup these savings if they are responsible for utility payments. Every single small amount of energy savings is magnified for these owners, especially in building valuation operational savings on maintenance and reserves which may convey value as well. Building owners tend to lower maintenance costs by installing long-life or more durable components such as LED lights, harvesting rainwater for re-use etc. Other technologies and maintenance needs may require to be accounted for explicitly in owners' documentation to justify positive value adjustments.

Years of track record studies show that, according to advocates of green buildings, efficient green buildings have not only lowered the overall energy usage bills but the design and features also improve the occupants' experience and workers' productivity. Indirectly, these increase the value of a building, especially in the real estate market industry. Some recent empirical studies show that energy efficient commercial buildings with green attributes do create these values:

- Increased resale value
- Increased rental rates
- Higher occupancy rates
- Lower operating expenses
- Higher net operating income
- Lower capitalisation rates
- Productivity gains.

Rental premiums are emerging in green buildings and today's best tenants are increasingly willing to pay a premium rate for green spaces and properties. From their point of view, leasing green space is an opportunity to demonstrate their commitment to sustainability, attracts the best employees and improves productivity through good indoor air quality. A commitment to health and wellness in the built environment supports a simple yet impactful equation: *A better environment + healthy and productive environments for tenants and their employees = growing sound & sustainable value for investors.*

Moving beyond the value accrued from rent, operational savings and market recognition at sale will help building owners and developers understand the appraisal process and how green, high performance characteristics and data can be used by appraisers to help fully maximise valuation. Each of these elements can have an impact on value; more information readily obtained and available will ease the appraiser's job and smoothen the process for all parties involved. Do not leave the appraisal of property to chance in the old conventional way. A pro-active step is a must to monitor and report the operations in a more meaningful way and to highlight the impact of the green features which add value to buildings and properties.

Another way to justify value for green certification is to compare buildings. Owners have to change not only the way they approach the design, the way they build and construct as well as market the properties, but also their approach in financing the development and the efficiency of the entire construction processes. Otherwise, the owner may end up paying for green certifications, capital improvements and marketing without fully realising the expected market benefits in return.

All of the above prove that going green will definitely benefit the building and construction industry and its stakeholders in both the short and long run. ■

Author's Biodata

A manager at Arkitek MAA Sdn. Bhd. and a GBI Facilitator, ***Ar. Alice Leong Pek Lian*** *is a registered architect.*

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SAFE TEA TIME

NOW YOU SEE ME

by Ir. Shum Keng Yan

***Ir. Shum Keng Yan** is a chemical engineer and a certified accident prevention and safety practitioner.*

When we first inculcate the right attitudes towards safety, we focus on observing and measuring behaviours. At the most basic stage, you may want to share insights from "Setting the Stage for Safe Behaviour (June 2017) and introduce the ABC of Safety (August 2017). This offers an understanding of how Behavioural Observation can be useful. A strong buy-in is necessary as it is not comfortable to be observed but the aim is to identify at-risk behaviours.

Explain the process and the objective to capture learnings which can be shared with those doing a similar job. Learnings can be captured in cards with details of the observation session. There are boxes to remind the observer to check the condition of the workplace, tools and equipment, body position, procedures, how the job is performed and so on.

Often, we bucket the conclusion on "safe" and "unsafe" learnings. Both parties will confirm the observation session, the subsequent actions and follow-ups. The session then wraps up with a positive recognition for good practices and the coaching received.

Some name the record as Behavioural Observation Checklist. I must stress that coaching on the learnings and improvements to the work process is of higher value than the recording.

Next, coach observers on the process. You can use observation by the supervisory level or by themselves (peer). The process can be done using a fixed schedule, ad-hoc or a mix of both. Ideally, observation should be integrated with existing shopfloor inspections or walks. However, many prefer a standalone Behavioural Observation walk in the early stages in order to give it a stronger emphasis. The ultimate aim is to have an integrated safety system with the business processes.

During the walks, capture the learnings on unsafe conditions (sub-standard conditions) and unsafe behaviours (sub-standard behaviours). In the case of "sub-standard", clearly define "standard". Where this is not clearly defined, now is the opportunity to do so.

There are pros and cons in splitting conditions and behaviours. In almost all cases, observation is a recording of unsafe conditions as most feel uncomfortable about "telling" on colleagues. Even with management support, employees feel that recordings of unsafe behaviours will be used against them during performance appraisals.

The records are then tabulated and the trend identified. Let me predict the trend in your company: "Did not wear proper PPE" and "Did not follow Standard Operation Instructions" came up in the top five.

So will Behavioural Observation add value to drive change? If you see the point, send your observation card to me at: **pub@iem.org.my**. ■

"The more you look, the less you see" J. Daniel Atlas (fictional character from "Now You See Me")


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ENGINEER'S LENS

JAMBATAN MERDEKA

Ir. Dr Oh Seong Por

Jambatan Merdeka or Merdeka Bridge

3-span tied arch bridge design

Abandoned hexagonal bunker

Twin tied arch bridge

Jambatan Merdeka or Merdeka Bridge spans Sungai Muda at Federal Route 1 from Jalan Butterworth to Sungai Petani and marks the border between Penang and Kedah. The original bridge, built by the British before World War 2, linked Penang to the other northern states. They built a hexagonal concrete bunker near the river to protect the bridge. It still exists today but is abandoned and covered by overgrowth.

In 1942, when the Japanese Imperial Army marched on to Penang, the British blew up the midsection of the bridge, hoping to stop their advance. But the Japanese repaired the bridge and invaded Penang. In 1955, after the war, the Public Services Department of Jabatan Kerja Raya reconstructed the 100m-long bridge. The 3-span tied arch bridge, built of concrete and steel, could carry motor vehicles and pedestrians. The arches allowed weight to be spread evenly and prevented excessive concentration of stress on fixed supporting structures.

Since the arch was a curved shape, it created compression and, over time, the materials became more compact and strengthened the bridge. Completed in 1957, it was officially opened by our First Prime Minister, Tunku Abdul Rahman, and named Jambatan Merdeka.

In 2008, a second bridge was erected alongside the first one. The twin white coloured tied arch bridges over the calm Sungai Muda make a wonderful sight. ■

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FORUM

PRE-AGM TALK: ENTREPRENEURSHIP & LEADERSHIP

URBAN ENGINEERING DEVELOPMENT SPECIAL INTEREST GROUP

reported by

Ir. Jagjeet S. Sidhu

The Urban Engineering Development Special Interest Group (UEDSIG) of IEM held its 2nd AGM on 8 December, 2018 at 11.00 a.m. Prior to this, 50 participants attended a pre-AGM talk on "Entrepreneurship & Leadership", presented by Mr. Ngian Siew Siong at 9.00 a.m..

Mr. Ngian

Mr. Ngian initially worked as a engineer at JPS and later moved to the property development arena with the Sunway Group in 1985; he was the only employee at that time. He retired in 2012 as its Managing Director. Now a board director for a few large property developers as well as the COO of Glomac Bhd, he is recognised for developing Talent, Product & Procession Innovation, and Sustainable Development.

Mr. Ngian began by relating his early days at Sunway – from the exceptional aptitudes of his boss, Tan Sri Jeffery Cheah, to his own experiences in entrepreneurship and leadership, which he defined as both an art and a science.

He pointed out that in order to shape a successful enterprise, there were 3-interlinked qualities to be addressed: Entrepreneur, Leadership and Management (see Figure 1 and Table 1).

Mr. Ngian gave risk-taking examples such as how Sunway sent employees to Disney World in Orlando, Florida, to learn and gain ideas for the Sunway Group. In addition, Sunway had a good reputation with local banks

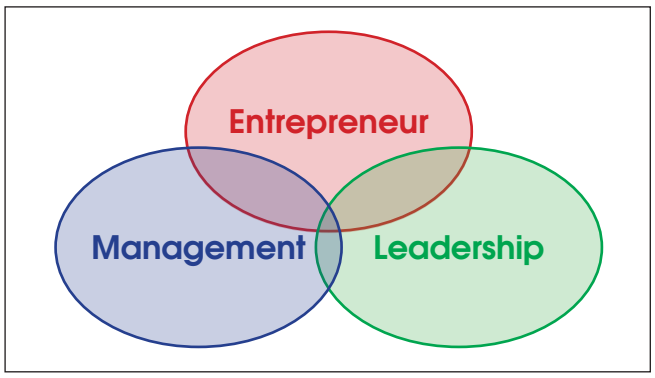

Figure 1: Successful Enterprise (3-interlinked qualities)

Table 1: Three Interlinked Qualities

Entrepreneur	Leadership	Management
Innovative	Visionary	Resources
Seek Opportunity	Creative & Innovation	Strategy of Organisation
Recognise Potential	Passion	Planning/ Organising
Risk Taking	Inspiration	Staffing & Coordination
Hope for Profit	Team Building	Leading/ Directing
Perseverance	Empowering	Assets
Vision & Courage	Accountability	Skills
	Change Agent	

Table 2: A.J.I.D. (Talent Skills Assessment Qualities)

Agility	Judgement	Influence	Drive
Flexible	Rational thinking	Other skills	Positive mindset
Fast to think & grasp	Objective	Ability to influence	Positive energy
Receptive to ideas	Not personal	Motivate/ inspire	Energetic
Accept change	Think of other's feelings	Ability to sell ideas	Determination
Change agent	Do not over-react	Rally staff support	Result driven
Innovative	Think before speaking	Convince management	Alternative options
Think out of the box	Analytical thinking	Response skills	
See positive side	Think out of the box	Positive perspective	
Resistance to change		How to say	

Table 3: Quotations of Tan Sri Jeffrey Cheah

Topics	Quotations
Lesson 1	Recruit staff smarter than you. Boss to pull up & staff to push you up. Customer first. No complaints from purchaser. Be bold.
Long term	View long term. Win a war but lose a battle.
Value creation	Cost vs value creation. Supply chain management (e.g. Dell). Value engineering.
People the biggest asset	Develop people. Training budget. Good company but bad boss.
Culture	Visionary. Trust. Forgiving. Lets you talk at a meeting. Leadership by example. Pick talent. Strong career development programme. Management trainee programme. Competency vs KPIs. Work with people and not against them,

and raised capital; it never defaulted on loan repayments. To overcome adversity during the 1986-89 economic downturn, it decided to sell Quarry, 48% of Sunway Pyramid Mall and only retained the best talent.

Highlighting leadership, people and management skills, Mr. Ngian briefly described A.J.I.D. (A=Agility, J=Judgement, I=Influence, D=Drive) as qualities for talent assessment as a form of Sunway's staff asset (Table 2).

As practised at Sunway, Mr. Ngian continued, the 3 main assets of an organisation are Staff (talent), Brand (product) and Knowledge. For staff talent, the main goal is attraction, development and retention. This may include coaching, mentoring, succession planning and knowledge learning at institutions. Other factors include respect for staff, fair treatment, equal opportunities, growth, performance rewards and good managers (see Table 3).

As for creating a brand, the factors are creation of a quality product which is elegant, which does not require renovations, which delivered ahead of schedule with zero defects, the use of durable materials and prompt communication, response and service. Thirdly, knowledge belongs to the company; however, it stays with the staff which poses a risk. Knowledge includes SOP, various reports, work references, checklist templates and case studies.

Lastly, he stressed on the importance of a good supply chain management which includes design & engineering, new product introduction, purchasing & planning, factory & test automation, production, dedicated logistics and after sales service.

After the question-and-answer session, Mr. Ngian ended with the advice that in order to be ahead in property development business and to stay competitive, entrepreneurs need to adopt the latest BIM tools and technology available. A certificate and a token of appreciation were then presented to Mr. Ngian. ■

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Upcoming Activities
MARCH-APRIL 2019

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Date	:	16 March 2019 (Saturday)
Time	:	11.00 a.m. to 1.00 p.m.
Venue	:	Wisma IEM
Approved CPD	:	3.5
Speaker	:	Ir. Abdul Razak bin Yakob, Ir. Syed Neguib bin Syed Mohamed, Ir. Juares Rizal bin Abdul Hamid

1-Day Course on "LiDAR Technology With A Case Study in Flood Risk Assessments & Mitigation and Its Application In Engineering"

Date	:	19 March 2019 (Tuesday)
Time	:	9.00 a.m. to 5.00 p.m.
Venue	:	Wisma IEM
Approved CPD	:	7.0
Speaker	:	Ms. Trudy R. Ganendra & Dr. GS Ebrahim Taherzadeh Mobarakeh

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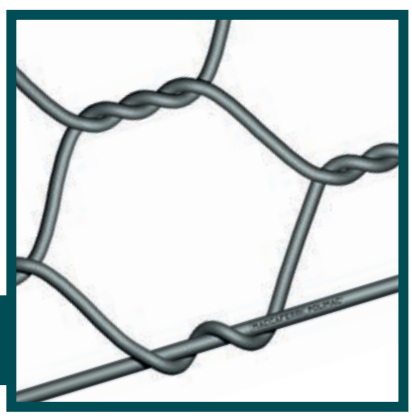

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TECHNICAL VISIT TO KIBING GROUP (M) SDN. BHD., NEGERI SEMBILAN

NEGERI SEMBILAN BRANCH

Ir. Dr Oh Seong Por

On 29 November, 2018, the Institution of Engineers Malaysia, Negeri Sembilan Branch (IEMNS) organised a technical visit to Kualiti Alam Sdn. Bhd., in Ladang Tanah Merah A3 Division, Bukit Pelandok, Negeri Sembilan. There were 45 participants from engineering consultant firms, industry sectors, universities and IEMNS office.

Kualiti Alam belongs to a group of companies called Cenviro which stands for "clean environment" and is a subsidiary of Khazanah National Berhad. Since 1998, it has been operating the nation's pioneer waste management centre in Negeri Sembilan. Over the years, the company has been relentlessly innovating and this has resulted in the establishment of the best integrated environmental solutions for scheduled waste. It has been granted to handle 76 types of 77 scheduled waste listed under Environment Quality Regulations 2005 for collection, treatment, recycling, recovery and final disposal. To this date, it has the capacity to dispose 100,000 tons of scheduled waste annually.

The IEMNS delegates, led by its chairman, Ir. Dr Oh Seong Por, arrived at 9.30 a.m. and was welcomed by Kualiti Alam's acting Head of Operation, Encik Mohd Rizal bin Zambros and its Engineering Manager, Ir. Hazlin bin Harun. The delegates were ushered into the meeting hall where Encik Mohd Rizal, supported by process engineer Encik Shakirin Abdul Aziz, briefed them about the company profile, operation and services. There are 3 core scheduled waste processing plants, namely Scheduled Waste to Energy Plant (SWTE), Vertical Secured Landfill (VSLF) and clinical waste treatment centre.

The SWTE is the nation's first plant where scheduled waste is incinerated and heat energy released is recovered to generate electricity. It was fully commissioned in 2018, three years after the idea was conceived. Figures 1 and 2 illustrate the major components of the SWTE plant and the process flow respectively. Scheduled waste with acceptable calorific value is fed into the rotary kiln-stoker combustion chambers. The incineration process generates heat, raising temperatures up to 700-900 degrees Celsius. The combusted waste leaves the stoker and enters secondary combustion chamber where temperature is raised again and maintained at 1100-1200 degrees Celsius. This is to ensure complete combustion as required by the regulation for the total destruction of organic matters. The hot flue gas is recovered to reheat steam to superheated level of 20 tons/day with pressure and temperature sustain at 32 bar and 350 degrees Celsius respectively. The superheated steam is capable of turning the steam turbine to generate electric power of 3.4 MW/day or 102 MW/month, sufficient to power 9,500 houses. Flue gas leaving the reheater is properly filtered and purified in the air pollution control system which comprises of series of lime-activated carbon purifiers, air bags and scrubber.

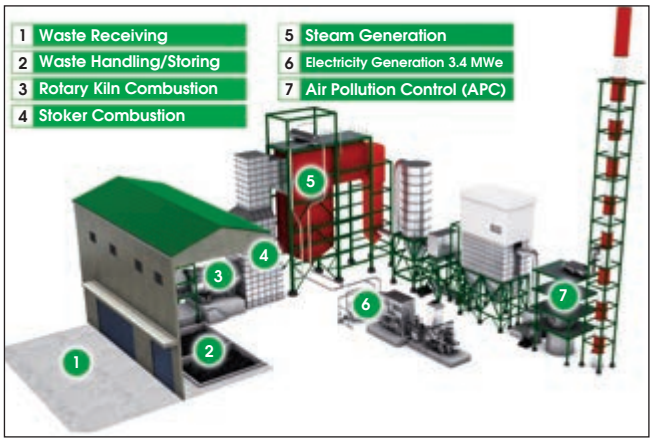

Figure 1: Major Components of SWTE Plant

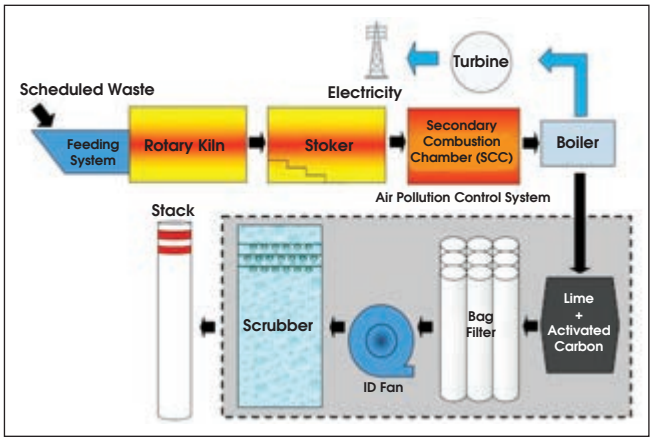

Figure 2: Process Flow of SWTE

Emergency Response Command Centre

VSLF is an innovative technique to increase the space to the existing landfill. It is a green geogrid wall reinforced with soil and built along the 1.7km perimeter of the existing secured landfill. Properly compacted waste masses are stacked vertically within the geogrid wall. Once the layer is filled, the wall is raised higher, creating additional empty space for the next layer of landfill. According to Encik Rizal, the vertical wall can be raised to 24m high.This increases the landfill lifespan to 30 years from an initial 15 years, allowing more scheduled waste to be collected, processed and put to final disposal. To prevent moisture that may percolate from the waste mass and to protect the environment at the landfill, new technology using double liner system has been applied to capture leachate. Figure 3 shows the green geogrid wall of vertical secured landfill.

Besides the processing plant, the delegates also visited the Environmental Preservation & Innovation Centre (EPIC), a human development capacity building where innovative and reliable solutions are being developed to manage waste and renewable energy. The building is erected based upon green design concepts such as proper orientation and shape to tap on natural wind ventilation, thus minimising dependency on air conditioners and a solar panel to generate electricity for the internal lighting system.

Delegates were also allowed to visit the Emergency Response Command Centre. This is actually an in-house fire station, manned by trained ex-firemen and is equipped with complete firefighting assets such as a fire engine and rescue vehicle.The unit was formed following a fire incident in the premises in 2015.The aim is to provide fast response to combat fire outbreak and to prevent fire hazard, not only within the Kualiti Alam facility but also the neighbouring community.

The visit ended with an exchange of souvenirs between Ir. Dr Oh Seong Por and Encik Rizal, followed by group photography session in front of the EPIC building. ■

Solar Panel Unit at EPIC

Exchange of souvenirs between Ir. Dr Oh Seong Por and Encik Rizal

Geogrid Wall of VSLF

EPIC Building

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Updated May 2018

IN SEARCH OF WILDLIFE IN SULAWESI

Ir. Chin Mee Poon

***Ir. Chin Mee Poon** is a retired civil engineer who derives a great deal of joy and satisfaction from travelling to different parts of the globe, capturing fascinating insights of the places and people he encounters and sharing his experiences with others through his photographs and writing.*

Sulawesi is one of the largest among the 13,000 plus islands that make up the archipelago of Indonesia. It not only has some very intriguing indigenous cultures for visitors to experience, there is also very unique wildlife in its waters and forests.

When my wife and I were backpacking in Sulawesi in September last year, we spent much time looking for the island's flora and fauna.

After spending some time in Tana Toraja in the northern part of Sulawesi Selatan to experience a taste of the extremely fascinating culture of the people there, we went further north into Sulawesi Tengah and eventually settled in the idyllic Togean Islands within the large Tomini Bay. During our short stay on one of the islands, we met some interesting people from several European countries and visited some beautiful beaches, but the most rewarding part must be the time I spent snorkelling in a serene and charming lake, Danau Mariona. There are thousands of stingless jellyfish in the small lake and I had so much fun swimming with them. Ecologists believe the jellyfish lost their stinging cells through evolution because they live in a confined ecosystem without predators. There are 2 other stingless jellyfish lakes in Indonesia: On Kakaban Island, one of the Derawan islands off the east coast of Kalimantan, and Lenmakana Lake in Misool Island in Raja Ampat, West Papua. Worldwide, there are 10 other such jellyfish lakes and they are found in Palau, the Philippines and Vietnam.

A 12-hour overnight ferry ride took us from Togean Islands to Gorontalo in the northern arm of Sulawesi Island. From there we got to the Visitors Centre of Bogani Nani Wartabone National Park near Doloduo, and we put up a night in a very spacious but mosquito infested guest room in the Centre. We engaged a ranger to be our guide for wildlife viewing in the park the following morning. In 4 hours of walking, we only saw half a dozen black macaques and a few knobbed hornbills high up in the forest canopy as well as several small lizards and other insects. Many beautiful fan palms made the forest quite attractive though.

The highlight in our search for Sulawesi's wildlife came towards the end of our trip when we were exploring the Minahasan Highlands in the north-eastern tip of the island. After visiting the other attractions there, we finally came to the tiny hamlet of Batu Putih and spent 2 nights in a homestay. Led by a woman guide introduced to us by the homestay owner, we did 2 walking safaris in the Tangkoko Reserve adjacent to the hamlet; the first lasted for a little more than 6 hours from 6.30 a.m. and the second from 4.00 p.m. to 7.00 p.m. We saw black macaques, a few unidentified birds foraging among the thick foliage, tiny flying lizards on tree trunks, a family of 3 owls resting on low branches, a pretty kingfisher, several Sulawesi bear cuscus (a species of arboreal marsupial endemic to Sulawesi and nearby islands) on high branches and a beautiful knobbed hornbill feeding its month-old chick safely shielded in a hole high up a large tree trunk.

We also saw liana flowers and fruit for the first time in our years of exploring tropical rainforests. At dusk, we saw half a dozen tarsiers emerging from their dens in a tree trunk of strangling fig, to hop from tree trunk to tree trunk, hunting for insects. We also saw 2 large tarantulas and a sunbird sleeping between 2 leaves.

I was absolutely satisfied with our wildlife viewing endeavours in Sulawesi. ■

TEMUDUGA PROFESSIONAL

Tarikh: 18 Februari 2019

Kepada Semua Ahli,

SENARAI CALON-CALON YANG LAYAK MENDUDUKI TEMUDUGA PROFESIONAL TAHUN 2018

Berikut adalah senarai calon yang layak untuk menduduki Temuduga Profesional bagi tahun 2018.

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 2018.

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. Mohd Khir bin Muhammad FIEM, PEng
Setiausaha Kehormat, IEM
(Sessi 2018/2019)

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SAIFUL AZLAN BIN MAT RADHI	BE HONS (UTHM) (ELECTRICAL, 2004)
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MOHD FAUZI BIN AB RAHMAN	BE (TOKAI) (CONTROL, 2001) ME (UTeM) (ELECTRONIC SYSTEM, 2011)
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75472	ASSRUL REEDZA BIN ZULKIFLI	BE HONS (UTM) (CIVIL, 2008)
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48908	LEONA NG SOOK HAN	BE HONS (UMS) (ELECTRICAL & ELECTRONIC, 2001)
72721	MOHAMAD SABHI BIN HISSAM	BE HONS (UTM) (ELECTRICAL, 2012)
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86301	KHAIRAYU BINTI BADRON	BE HONS (IIUM) (COMMUNICATION, 2006) MSc (IIUM) (COMMUNICATION, 2011)
87500	LAU CHEE YONG	BE HONS (UTM) (ELECTRICAL - ELECTRONICS, 2011) PhD (UTM) (BIOMEDICAL, 2015)
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33412	MARINA BINTI MASERI	BE HONS (UiTM) (CIVIL, 2010)
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DATE	TECHNICAL DIVISION	CPD
09 March 2019	Information and Communication Technology	2

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Upcoming Activities
MARCH-APRIL 2019

2-Day Course on "Healthcare Ventilation"

Date	:	20 – 21 March 2019 (Wednesday – Thursday)
Time	:	9.00 a.m. to 5.00 p.m.
Venue	:	Wisma IEM
Approved CPD	:	13.0
Speaker	:	Ir. Al-Khairi Mohd Daud

Course on "Vertical Transportation Systems"
Part I: Design and Installation of VTS
Part 2: Maintenance Management of VTS

Date	:	26 – 27 March 2019 (Tuesday – Wednesday)
Time	:	9.00 a.m. to 5.30 p.m.
Venue	:	Wisma IEM
Approved CPD	:	13.0
Speaker	:	Mr. Raghib Fasih Azmi

1-Day Seminar on "Assessment of In-Situ Compresive Strength of Concrete in Existing Structures"

Date	:	28 March 2019 (Thursday)
Time	:	8.30 a.m. to 5.00 p.m.
Venue	:	Armada Hotel, PJ
Approved CPD	:	6.5
Speaker	:	Prof. Dr Tham Chat Tim

1-Day Course on "3rd Generation Performance Based Contract"

Date	:	28 March 2019 (Thursday)
Time	:	9.00 a.m. to 5.00 p.m.
Venue	:	Wisma IEM
Approved CPD	:	6.0
Speaker	:	Y.Bhg. Datuk Ir. Kamarulzaman Zainal

1-Day Short Course on "Cone Penetration Test"

Date	:	09 April 2019 (Tuesday)
Time	:	8.30 a.m. to 6.30 p.m.
Venue	:	Four Points by Sheraton Puchong
Approved CPD	:	7.5
Speaker	:	Mr. Tom Lunne, Dr. John Powell, Ir. Liew Shaw Shong

2-Day Course on "Contract Management Hiccups"

Date	:	11 – 12 April 2019 (Thursday – Fiday)
Time	:	9.00 a.m. to 5.30 p.m.
Venue	:	Wisma IEM
Approved CPD	:	14.0
Speaker	:	Ir. Lai Sze Ching

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100786	JOEYRIDE ROWENN JOM	B.E.HONS.(UTM)(ELECTRICAL, 2016)
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100814	ASLAM BIN A. GHANI	B.E.HONS.(UTP)(ELECTRICAL & ELECTRONICS, 2017)
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99522	DR. DAYANG SALYANI BINTI ABANG MAHMOD	B.E.HONS.(UTM) (CHEMICAL-GAS, 2006) M.E.(UTM)(GAS, 2011) PhD.(UNIMAS)(MECHANICAL, 2018)
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99529	MOHD FAIZ BIN ADAM	B.E.HONS.(MONASH UNI.) (MECHANICAL, 2009)
100824	OW SIEW WAI	B.E.HONS.(NUS)(MECHANICAL, 1990)
100793	TING GOA LOONG	B.E.HONS.(SWINBURNE UNI. OF TECH.)(MECHANICAL, 2016)
101015	CH'NG JIA HUI	B.E.HONS.(TAR UC) (MECHANICAL, 2016)
100690	MOHD SYAFIQ HAFIFI BIN KAMISAN	B.E.HONS.(UiTM) (MECHANICAL, 2011)
100664	MOHD AZWAN AZAHARI	B.E.HONS.(UiTM) (MECHANICAL, 2012)
100722	LAU CHUN KIT	B.E.HONS.(UNI. OF WOLLONGONG)(MECHANICAL, 2014)

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Pengumuman yang ke-125

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 Disember 2018 adalah seperti jadual di bawah:

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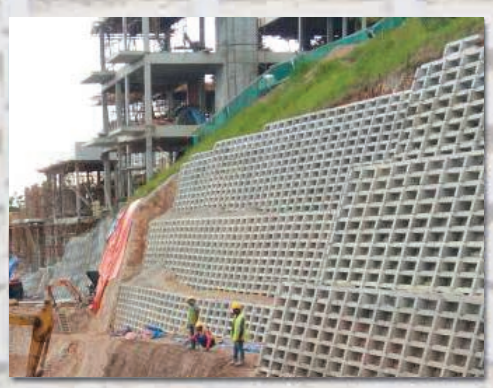

For enquiry please contact:

CRIB TECHNOLOGIES SDN BHD (564096-A), **ARE WALL (M) SDN BHD** (542608-W)

No. 28-2, Jalan Setia Utama AS U13/AS, Setia Alam, Sek U13, 40170 Shah Alam, Selangor

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E-mail: enquiry@nehemiahwalls.com

PENANG
27C, Medan Angsana, Bandar Baru Air Itam,
11500 Pulau Pinang.
Tel: (604) 826 5071 Fax: (604) 826 5860
H/P: 012 373 1705