



■ GREEN SERIES

BY ALYSSA J. OON

# Sustainability works

## > People-centric benefits of 'going green' at work

**W**HEN we talk about green living, what often comes to mind is bringing "nature and sustainable practices" into the home. While this is important, many forget that for most of us in the workforce, a large bulk of our waking hours are spent at the office. Therefore, are we really fully benefiting from the advantages of an eco-friendly home environment?

With that, let's see how sustainable practices at the work place can benefit the people, indirectly, the business.

### CONCERNING GREEN

At the recent International Urban Sustainability & Green Building Conference (IUSGBC) 2017, which was organised by Malaysia Green Building Confederation (MGBC) in conjunction with the International Greentech & Eco Products Exhibition & Conference Malaysia (IGEM) 2017, there were talks which highlighted a dire need for green initiatives in the workplace.

One such was on "Better Places for People and the Wellbeing Labs", delivered by UK Green Building Council (UK-GBC) sustainability advisor Elinor Huggett. The basis of Huggett's talk was gleaned from the results of a project called the Wellbeing Lab conducted by UK-GBC and WorldGBC. She shared with the audience how green initiatives, no matter how small, can be incorporated into an everyday office environment and elaborated how it can benefit the occupants/business.

"If you want sustainability to become mainstream then you absolutely must appeal to bottom-line (costs and expenses) as well," she said. "Being able to make a financial case for green buildings is really important. It may not be a main driver in a business set-up, but if considered and worked into the DNA of a business, in the long run the benefits can be huge and far-reaching."

The Wellbeing Lab report revealed that "there are synergies between design for human health and design for positive environmental impact". These are identified across several areas:

### INDOOR AIR QUALITY AND VENTILATION

"Studies we looked up showed that improving indoor air quality and ventilation can result in an 8% to 11% improvement in the productivity of the people working in those areas," Huggett explained.

When incorporating natural materials into the office building design, take note of its volatile organic compound (VOC) levels. Adding plants into the office helps reduce the presence of internal pollutants such as carbon dioxide and VOCs.

Huggett suggests using the Nasa Clean Air Study as a reference guide

when choosing plants to incorporate in an area. (The study also appeared in our October interior design article.)

By implementing measures to keep the air clean and healthy, the need for mechanical ventilation is reduced, which in turn, reduces the energy needed to power the ventilation. The outcome: lower costs.

### VIEWS AND VISTAS

Studies suggest that being able to look out the window and take a rest from the computer screen (or whatever "gadget screen" you are working on) gives your eyes a moment to reset. This results in a 7% to 12% increase in productivity.

A study by environmental psychologist Roger Ulrich is one of the most heavily cited studies to support this fact. Findings revealed that looking at nature garnered a more positive impact on the recovery process of hospital patients compared to those who lived in sterile environs (who took a lot longer to recover from their illness).

Scientific American writer Deborah Franklin also noted in her article "How Hospital Gardens Help Patients Heal" — that multiple studies have proven that spending just three to five minutes looking at views dominated by trees, flowers or water, can reduce anger, anxiety and pain, while also inducing relaxation.

If one has access to nature views from your work space, there is huge chance that one also receives sufficient amounts of daylight filtering into the work space.

Why is it important to invite

nature the once-over, try to invite some sunlight into your office space and gaze at nature every now and then. Bosses, don't penalise employees for "looking out the window" or "sun gazing", stealing time away from the device they're working on — you'll reap the benefits in higher productivity and fewer MCs among other ways.

### AMENITIES AND LOCATION

Having amenities such as shops, restaurants and gyms is much more than just being able to enjoy a lovely setting to your surrounding office environment; it encourages people/employees to spend time outside — think fresh air, greenery, sunlight, and keeping active.

In terms of location, having really good public transport connections or even cycling facilities, will have an impact on both the employee's health and the environment. Having amenities situated "near enough" will encourage people/employees to take time off and leave their work spaces, encouraging one to get mobile/active, yet without requiring the use of a motorised/carbon-emitting vehicle.

The end goal is to encourage "active transport", which in turn reduces building associated transport emissions Huggett informed. Side benefits include better health as being active is good for the heart and overall wellbeing.

### COMFORTABLE AND PERSONAL WORK SPACES

According to Huggett, giving people some personal freedom over their work space can increase productivity by about 3%. She suggests allowing staff the freedom to open windows (if at all they have access to a window) for appropriate lighting and temperature control of their working environment. She also says flexible seating arrangements, as in having the free-hand to decide where to sit, has an impact, on the company, the individual and the environment.

From "hoteling" (unassigned/reservable office spaces) to "hot desking" (minus the reserve function, which turns out like a first-come, first-served concept) and "alternative workplace strategy" (covering a broader idea of work spaces that define work zones beyond the usual cubicles and offices, as in outdoors or even indoors as in huddles in conference rooms, office pantries, etc.) — as in all circumstances, there are pros and cons.

However, Huggett shared that office designs which include more social spaces and visible staircases are one of her favourite health and wellbeing elements. "These are

brilliant thinking; they get people to move around more and interact with their colleagues more," she explained.

The freedom to choose one's preferred work area and being able to select comfortable surroundings and control temperatures have positive effects; based on the idea of creating stronger social groups that can produce better business results and cultivating better chi/positive energy, etc.

This "conscious design" also uses less energy without the need for lifts. However, Huggett added, "It doesn't work as well in high rise situations though. But even if within the floors of your spaces, people could take the lift up to your portion of the high rise at the beginning of the day, then the rest of the day, move between the different floors via the staircase."

In open-plan office layouts, the resulting background noise may pose a problem for concentration. Huggett recommends designing a variety of spaces so people can choose quiet or noisy areas to suit their preference. "Having a wide variety of space and the option to choose actually really helps people to move around and maximise their productivity at any one point."

Towards the end of her talk, Huggett shared that there is no point having healthy buildings which are good for the environment but not the people.

In her role at the UK-GBC, Huggett says: "People respond to the 'health in productivity' argument in a way that they don't with sustainability. Campaigning and working towards a more sustainable-built environment is always good for people in the long-run." She summons governments and those in the building industry to create buildings that are not just good for the environment, but supports healthier, happier and more productive lives.

### THE BENEFITS OF GREEN BUILDINGS

There are many benefits to gain the environment, the economy and the people, across various levels. Plus points go beyond economics and the environment, and have been shown to bring positive social impact. Health and wellbeing of people who work in green offices or live in green homes are notably better.

- ▶ Workers in green, well-ventilated offices record a 101% increase in cognitive scores (brain function) — Harvard T.H. Chan School of Public Health / Syracuse University Center of Excellence / SUNY Upstate Medical School, 2015.
- ▶ Employees in offices with windows slept an average of 46 minutes more per night — American Academy of Sleep Medicine, 2013.
- ▶ Research suggests that better indoor air quality (low concentrations of CO<sub>2</sub> and pollutants, and high ventilation rates) can lead to improvements in performance of up to 8% — Park and Yoon, 2011.

Retrieved from [www.worldgbc.org](http://www.worldgbc.org)

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GREEN SERIES



Panel homes by Joy Design Studio.



Modular homes by modularhomesva.



Steel framing by smart housing.

BY BRIAN CHUNG

# The abstract on prefabricated houses

> Busting myths about the 'Lego method' of building living quarters

THESE are a number of factors that go under the microscope by any potential house buyer or property investor. The two most common many pore over are cost and value. While property developers are aware of these, only some meet the demands and concerns given inflation, competition, better quality, more luxurious features; reasons aplenty. However, for those concerned about cost and value, who are also contemplating "greener" options, perhaps they could consider prefabricated (pre-fab) houses.

PRE-FAB HOUSES

In a nutshell, a prefabricated house is one constructed using "prefabricated parts" - manufactured in one location (often a factory) and brought to a location (usually the construction site) to be assembled. This system called prefabrication, is a subset of a building system known as "Industrialised Building System" or IBS in short.

Like any system under the IBS banner, prefabricated houses share these characteristics:

- ▶ Components and parts like walls and frames are produced in a factory.
- ▶ The component/s will be brought to the construction site to be assembled.
- ▶ The system reduces labour and time in completing a construction project.

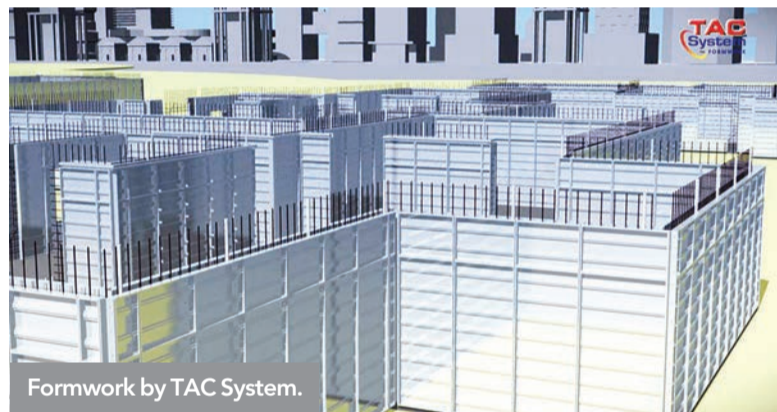
Nonetheless, even with the mentioned strong points and advantages, the prefabricated system of building hasn't won favour, especially among Asians, Malaysians in particular. That said, let's explore the many mindsets, perceptions we locals have on this amazing and "greener" system of build and bust the myths many believe in.

NOTIONS AND FABRICATIONS

▶ Myth #1: Prefabricated houses are not strong and secure.

No fact, instead false impression. Although there are not as much bricks and cement used in the construction of a prefabricated house, it does not mean that it is flimsy, weak or unsafe, neither can it be easily destroyed by wind or a storm.

In fact, prefabricated houses comprise fabricated "parts" made in a factory, which are manufactured to higher building standards than most site-built homes. Each module or part also has to withstand being lifted on to the back of a flatbed truck and being transported to the "building site". This requires the modules/parts to be solid and durable, if not more, than the same in strength as a traditional house.



Formwork by TAC System.

To back this claim, look at countries like Japan and America which have adopted prefabricated housing systems. These are countries subjected to natural disasters and stringent housing administrations and policies. Moreover, some materials used in the construction of prefabricated houses, like plasterboards (drywall) for instance, have been integrated into traditional places of dwelling and work, and have proved hardy and durable. For those who did not know, the St Regis Hotel in Kuala Lumpur integrates both traditional construction and IBS methods in its configuration; USG Boral Fire-Resistant Drywall and Ceiling System to be exact.

▶ Myth #2: Prefabricated houses are not flexible in design nor stylish.

As in how the previous myth was formed, this is based on a similar concept. The idea of prefabricated houses being pre-manufactured from moulds; components "put together" after being transported to the construction site for assembly - some say a "Lego house" comes to mind.

Critics are quick to point out the perceived rigidity of this system considering that "everything" is "pre-made", what more with the analogy of a Lego house.

Modular Today, a prefabricated house review website, states that prefabricated buildings can be customised according to the preference of the buyer/developer. This is mainly because prefabricated house parts, like dry walls and frames, are built in factories, and changes to the design template is not impossible.

The pre-fab houses of today have in fact come a long way since it was first introduced in the market.

Today, there are many different moulds that can create different parts of a house.

Flexibility of prefabrication is also further validated by another system under the IBS banner, known as the "Hybrid/ Innovative System". According to Aathaworld, a Malaysian contracting firm dealing in building materials, this innovative system combines the use of various IBS methods, including using both IBS methods with normal brickwork, to build houses. With this system, contractors have alternatives, thus reduces their dependence on traditional wall-and-serve. It also provides a gateway to use prefabrication and other forms of IBS systems of construction.

On style, doesn't each have his or her own, as in the saying: "Beauty lies in the eye of the beholder"? (Visit the St Regis in KL and take in the sights, then get back to us.)

▶ Myth #3: Prefabricated houses do not benefit developers.

This notion deals with the potential problems of executing prefabrication. Some like to call it "an excuse". As in all circumstances that require "change", new methods and ways of doing things often come with some hesitation, we'd like to

believe, only because of lack of knowledge. However, some reason it to "lack of funds".

In reality, prefabricated house building methods can benefit both big and small developers. If done right and cleverly, it can also save a lot - money, time, and the environment.

According to USG Boral (a provider of lightweight materials to builders, like plasterboard) managing director Daron Cheah, some prefabricated materials are not only strong but also lighter than bricks. "This benefits prefabrication builders as weight of the units are an important factor in determining transport and hoisting costs," Cheah adds.

Cheah also says there is huge benefits in using the hybrid system combining pre-fab with traditional brickwork.

"In a traditional concrete building, when you combine using lightweight material like drywall (plasterboards) in its construction, it helps to reduce the weight of the building on the whole and therefore reduces super structure and sub-structure costs. The speed of construction is also faster and pre-fab is less dependent on labour. To cut it short, developers can save a lot of money, of which the savings can be passed down to the home buyers, which makes the pre-fab system actually advantageous in many ways and to many parties," Cheah says.

▶ Myth #4: Prefabricated houses are hardly any "greener" than regular houses.

Unless one works with a certification body like the Green Building Index (GBI) or the Malaysia Green Building Confederation, one really can't gauge how much greener or not building a house using pre-fab

systems is from the norm. However, countries and governments which are working on lessening their carbon footprint and impact on climate change are championing these newer and "cleaner" methods of construction and building.

According to Cheah, as in every subset system under IBS, prefabrication addresses waste management and environment issues. Components in pre-fab systems like steel and earth-friendly board are sustainable and recyclable, enabling developers to manage their budgets and build their projects responsibly. In turn of recycling and better budgeting, contractors and builders can reduce the amount of materials left unused or wasted.

As every component is produced in the factory, prefabrication also helps reduce the noise levels and possible pollution at building sites. As usually found in conventional building sites where sand and debris waste are common after construction, this is not the case in pre-fab building systems. With less waste, fewer hands need to be employed and shorter time-frames are required in building. All these boil down to loads of savings - time, pollution, waste, employees, money and most significantly, our "bigger home", our planet.

GETTING SERIOUS ON GREEN

In line with the global aspiration to combat climate change and reduce GHG emissions, the Malaysian government and like-minded operators of businesses have been taking steps to make changes for the better, including implementing IBS into construction schemes included. Companies like Ajiya Berhad, Aathaworld and Gamuda are among others who have introduced alternative forms of construction and building. Works Minister Datuk Fadillah Yusof also shares that the Malaysian government has intention to promote and encourage IBS construction projects, even making it compulsory in 2018.

Just months ago, Syarikat Perumahan Negara Berhad (SPNB) officiated a centre focused on training individuals on the Ajiya Green Integrated Building Solutions (AGIBS) system. A memorandum was signed between SPNB and Ajiya adopting the AGIBS system into their construction projects, beginning with Rumah Generasi Baharu Felda as its maiden project. Once completed, it will offer 20,000 homes. Steel will be used to form the structure of the house. With AGIBS, construction industry players are expected to save on manpower, minimise construction time and reduce operating costs using eco-friendly materials and methods.



Sample wall by AGIBS.

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GREEN SERIES

# Taking 'green' by the horns

> GreenTech's role in promoting sustainable developments and succeeding the big green plan



**H**AVING examined the sustainable industrialised building system and green integrated building solutions last week, today we feature GreenTech Malaysia (GreenTech) CEO Dr Mohd Azman Zainul Abidin's replies to queries on the Green Technology Master Plan (GTMP), the Low Carbon Cities Framework (LCCF) and the role and responsibility of GreenTech where these are concerned.

**Q: What is GreenTech's role in the establishment of the GTMP; who initiated it; when was it first broached; and why was it introduced when Malaysia already had "green" goals which have yet to be achieved?**

**A:** GreenTech Malaysia was appointed by the Energy, Green Technology and Water Ministry (KeTTHA) to develop the Green Technology Master Plan (GTMP) which defines Malaysia's strategic plans to develop green technology and create a low-carbon, resource-efficient and sustainable economy. Malaysia recognised the significance and importance of striving for low-carbon economy, which can enhance its global competitiveness, at the same time, attain environmentally sustainable socio-economic growth. The GTMP is an evolving, long-term action plan to actualise the vision, objectives, goals and strategic thrusts of the National Green Technology Policy. It provides the framework and key elements for implementation by defining a realistic action plan from 2017 to 2030 in propelling green technology as a driver to accelerate the national economy and promote sustainable development.

We believe the formulation of the GTMP can support and strengthen Malaysia's efforts in becoming a high-income and developed nation by 2020.

**Q: How does the LCCF fit into the master plan and what is GreenTech's responsibility in succeeding the goals under the LCCF vision?**

**A:** The LCCF was established to promote sustainable developments that will subsequently reduce carbon emissions in line with the government's commitment to reduce its greenhouse gases emissions per GDP per capita by 45% by the year 2030. The commitment was made during the 21st Conference of Parties to the United Nation's Framework Convention on Climate Change in Paris called COP21. The LCCF is part of the ministry's initiative aimed to set in motion further initiatives and action plans at various levels, towards overall reduction across the whole nine yards of the carbon footprint

platform, nationwide. GreenTech Malaysia was appointed by the ministry as an "implementer agency" to put into action, actualise and materialise the LCCF.

LCCF helps stakeholders in cities and townships to define their priorities and develop further action plans to reduce their carbon emissions as it focuses specifically on carbon reduction strategies and measures. As an implementer agency for LCCF, GreenTech Malaysia is responsible in conducting training and awareness programmes for all the cities' stakeholders, especially local authorities and developers, provide consultancy and one-on-one coaching sessions in setting up the baseline for respective cities; and provide technical advisory for the LCCF application and recognition.

**Q: In the implementation of the LCCF, there are 154 municipalities selected, what was the criteria for the selection?**

**A:** There are 154 municipalities in Malaysia. Due to limited resources, 52 local authorities with City and Municipal Council (Bandaraya and Perbandaran) status were identified for LCCF implementation. These are the areas where there is a higher concentration of population, where sources of carbon emission and pollution problems exist and mitigation is needed, hence they were 'selected'. Other factors include the municipality's readiness and commitment to move towards low-carbon development. However, general awareness and training is given to all local authorities in the country.

**Q: Can you elaborate a little more on GreenTech's role as an "implementer agency" in regards to the LCCF?**

**A:** Our LCCF work concerns more with the local authorities. However, upon request we extend our consulting and advisory services to private developers to assist them in implementing the green agenda through green technology and

low-carbon solutions in their development projects according to the LCCF, besides conducting performance-based assessment on carbon reduction blueprint at the end of the assessment period (minimum assessment period is two years).

**Q: Are there any incentives to encourage business and industry owners, including those in the building and property development industry to go green?**

**A:** There are a few incentives for the development of GT projects, services and purchase of assets such as:

**1. Tax Incentive for Green Technology Project**

Investment Tax Allowance (ITA) of 100% of qualifying capital expenditure incurred on a green technology project from the year of assessment 2013 (date on which the first qualifying capital expenditure incurred is not earlier than Oct 25, 2013) until the year of assessment 2020. The allowance can be offset against 70% of statutory income in the year of assessment. Unutilised allowances can be carried forward until they are fully absorbed.

Green technology projects related to renewable energy, energy efficiency, green buildings, green data centres and waste management schemes can qualify for this tax incentive. Refer to the Guideline for Application for Incentives and/or Expatriate Posts for Green Technology (GT) at [www.mida.gov.my](http://www.mida.gov.my) for more details. Applications received by Malaysian Investment Development Authority (Mida) by Dec 31, 2020 are eligible for this incentive.

**2. Tax Incentive for Green Technology Services**

Income tax exemption of 100% of statutory income from the year of assessment 2013 until the year of assessment 2020.

Green technology services related to renewable energy, energy efficiency, electric vehicles (EV), green buildings, green data centres,

green certification and verification, and green townships can qualify for this tax incentive.

Applications received by Mida by Dec 31, 2020 are eligible for this incentive.

**3. Tax Incentive for Purchase of Green Technology Assets**

Investment Tax Allowance (ITA) of 100% of qualifying capital expenditure incurred on green technology assets from the year of assessment 2013 (date on which the first qualifying capital expenditure incurred is not earlier than Oct 25, 2013) until the year of assessment 2020. The allowance can be offset against 70% of statutory income in the year of assessment. Unutilised allowances can be carried forward until they are fully absorbed.

The purchase of green technology assets (as listed in MyHijau Directory) will be eligible for this tax incentive. Refer to [www.greendirectory.my](http://www.greendirectory.my) for the list of assets certified by the Malaysia Green Technology Corporation (MGTC) as MyHijau and approved by the Finance Ministry.

Applications received by MGTC by Dec 31, 2020 are eligible for this incentive.

**Q: There is common belief that "buying green" (as in property) costs more than "buying regular" - can you share your thoughts on this ideology?**

**A:** It is another irony of our modern times that green is seen by some as a luxury only the wealthy can afford. Many, many years ago, green living was a norm "enjoyed" by practically everyone; except there was no "label" for such a lifestyle as that was how people were naturally brought up. These days, green is seen as a luxury, due to the additional cost charged to customers for:

- ▶ R&D activities for new or innovation technology
- ▶ Green certification including testing facilities and audit verification
- ▶ Expertise in green technology including training and skill development
- ▶ Intellectual property including design and pattern development

Cost is not such a simple issue, because we cannot compare item A and B next to each other. It wouldn't be an apple-to-apple comparison. When you consider the environmental costs of building or operating a house, things become complicated quickly. Before we can argue intelligently about whether the benefits of green products are a fair exchange for the price, we have to understand the true cost of it any other way. When buying green, we take into account that the product

will reduce the operational, maintenance and disposal cost. When people dismiss green buildings as too expensive, they usually mean that adding green features ie. renewable energy, extra insulation, recycled materials to the house they were already planning to build or remodel requires too much money. But such an evaluation hardly means that green buildings are too expensive. It simply means that some people value other things more highly.

**Q: At the recent IGEM 2017, the significance and importance of "going green" was communicated and reinforced; where are we in terms of being "responsibly green" compared to other countries?**

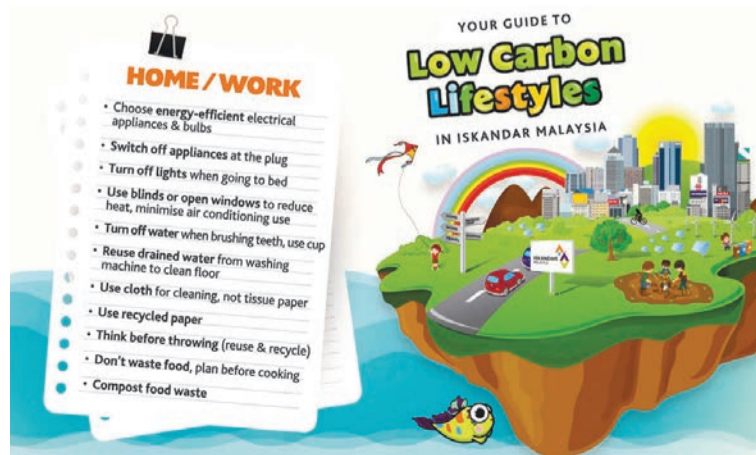
**A:** We are still at the "promotion" stage where the government, NGOs and private sector need to work hand in hand to encourage sustainable lifestyles to all Malaysians. We have not reached the stage where sustainable lifestyle is the "default" choice or "preferred" choice. At this stage, we need campaigns and roadshows, and many, many efforts to promote green, especially from the grassroots level. We believe that many people in this country want to live sustainably but don't necessarily know how to do so.

The main benefits of taking up a green lifestyle can easily be seen from cost savings and health benefits. It's a lifestyle that one chooses to embrace not only for him/herself, but for the family, the community and the planet. A sustainable or green lifestyle is about the environment, the economy and the people. These three are inseparable.

**Q: If there is one thing you'd like our readers to "take home" from this Q&A, what would it be?**

**A:** With all the hype on going green, I would ask our readers to please be very careful about "greenwashing". Green has become a thing that many people make claims without knowing what it really means to be green. End users/customers must be one step ahead to ensure the products they purchase have the necessary and proper certifications, with third party verification, which is why we have the MyHIJAU label. We want customers to demand for green like how they demand for halal and we wish for Malaysians to reach that level of awareness soon.

Follow our column next week on how you can cut capital costs with green developments.



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## GREEN SERIES

BY BRIAN CHUNG

# Wiser choice of green

> Green construction and buildings reduce capital costs, benefit widely

**S**USTAINABILITY has become a concern across all sectors – including technology and construction. From renewable energy to a cashless society, the current climate issues that have caused turmoil and unrest, even taken lives, have spurred innovations and stimulated initiatives to preserve the planet by adopting responsible practices.

While many conscientious minds have moved on to greener methods of working within their work environments and lifestyles, there are always those hesitant or slow in adopting change.

One sector going through this “shift” and moving into “green gear” is the construction industry. Malaysia Green Building Confederation (MGBC) board member CK Tang shares his professional views and industry insights.

### INITIATIVES AND ISSUES AT POINT

“The construction industry has been going through a struggle in the area of green development. When it comes to buildings and property, price and location is always the focus. “Tang made this statement during a presentation delivered at the International Urban Sustainability and Green Building Conference (IUSGBC). He puts the resistance and reluctance to consider (for the man on the street) or take on (for the property developer) sustainable and more green methods of construction, to the lack of awareness and understanding. He underlines the little emphasis put on sustainability in these three common circumstances:

- 1) When people talk about choosing a property, the usual points in question are on location, price and aesthetics. The emphasis on these three factors often relegates the sustainability of a building (its impact on the environment). Matters pertaining to energy efficiency and green building features are thought of as just a bonus feature.
- 2) Those who are interested in green development when it comes to commercial buildings are usually conglomerates and multinational firms. This scenario often gives people the perception that “going green” is only affordable to major-league establishments. Small companies often neglect or may not have the budget and time to think about the “DNA of the building” other than the aforementioned factors.
- 3) There are too many green tools and certification bodies in the market confusing both professionals and developers. Professionals view the amount of green tools in the market as an additional burden, as they are unsure which standards to follow and what are the essential or necessary green methods to take on.

According to Tang, “The irony is that there is awareness among Malaysian developers and architects on sustainable development; local authorities have

also showed their interest in the idea of developing green buildings in their neighbourhoods (as compared to the general attitude some 15 years ago). Yet, the enthusiasm has not translated into action and initiatives have not been taken up as the property market is still dominated by location, price and aesthetics.”

### MISCONCEPTIONS, CAPABILITIES AND GETTING TO THE CORE

On the issue that green buildings are thought to be expensive, Tang opines: “Green is expensive when the standard design is slapped on with green features; with each feature as an additional cost. It is expensive because we dare not take the risk, especially engineers and specialists. Most would prefer to stay within tried and successful formulas rather than improve or improvise.”

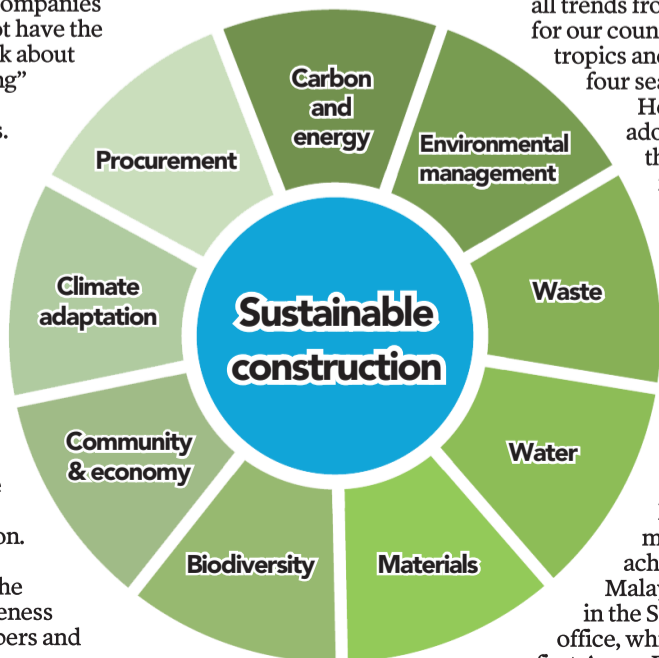
He adds that many developers tend to just add on green features to the standard design of their buildings instead of implementing sustainable methods and elements of construction into the blueprint from the beginning.

Tang declares that this risk-averse attitude towards sustainable development, coupled with the reliance on pre-existing designs are the culprits that give the perception that green buildings are expensive.

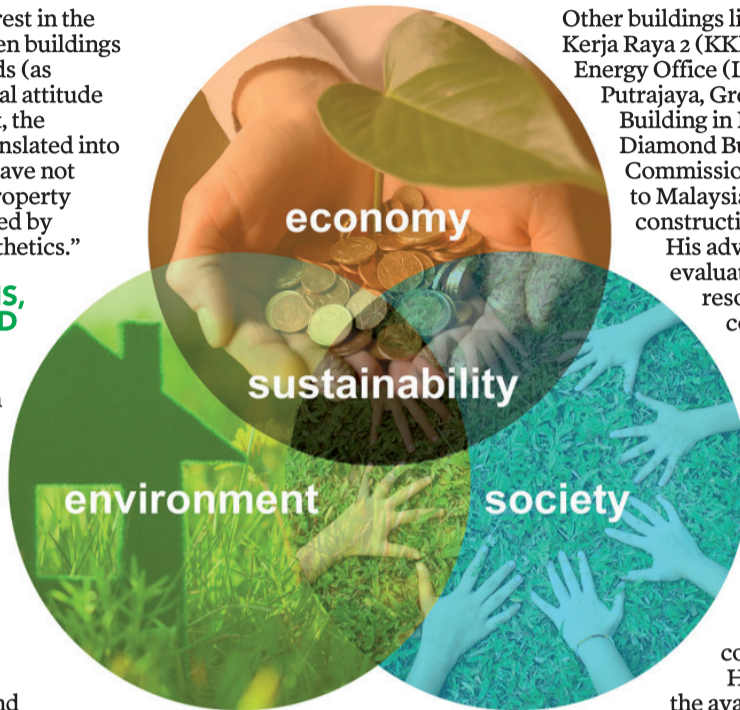
Besides this, the idea of adopting trends and technology from other countries bring us to another perception, of the country’s incapacity to innovate and come up with new and sustainable building methods.

Tang feels Malaysians have the tendency to doubt their capabilities and achievements in setting trends that lead in innovation. This meek attitude (some call Asian culture) has often “led some companies to blindly adopting Western trends and technology without weighing in their local context”.

Tang circumscribes the dilemma with the following thought.



PHOTOS/SURVEYMONKEY-ASSETS



PHOTOS/WWW.DFAB.CH

“The question is this: Is green expensive because professionals are not being paid to be hard working? Or is green expensive because professionals are not taking the risks to up-selling themselves?”

“Before we blame the developers for anything, we may need to blame ourselves for not up-selling ourselves. This is a problem because the green issue is about power play in the industry, as organisations are fighting one another and reinventing the same wheel of blaming each other. Some of these man hours in placing the blame on each other could have been used to innovate and implement new ideas. We not only need to make green more affordable but also more exciting,” Tang shares.

### SUGGESTIONS AND SOLUTIONS

At the presentation, Tang offered some solutions and advice to developers and architects.

He says the first thing that people need to be aware of is of their surrounding. “Bear in mind the local area, the DNA and characteristics of the land intended for development before adopting foreign trends. Not all trends from the West are suitable for our country as Malaysia is in the tropics and not a country with four seasons.”

He urges developers to adopt trends and solutions that are appropriate and feasible to our climate, our environs, our building and development rules and regulations, as well as our culture.

The next issue he addressed is the perception that Malaysia is lagging behind in terms of taking sustainable steps. As it turns out, Malaysia does have the means, expertise and achievements. He cites Malaysia’s green exploits as in the Securities Commission office, which won Malaysia its first Asean Energy Award for Energy Efficient Building in 2001.

Other buildings like Kompleks Kerja Raya 2 (KKR2), the Low Energy Office (LEO) building in Putrajaya, Green Energy Building in Bangi and the Diamond Building (Energy Commission) are testaments to Malaysia’s capabilities in constructing green buildings.

His advice: “Start evaluating the available resources within the country before adopting any technology and trends from abroad.”

Tang also urges developers and those in the construction industry to be innovative and move out of their comfort zones.

He talks of some of the available resources industry players could refer to.

Innovative software Cost@Work enables developers and architects to determine the right design and materials for their construction work. The programme analyses factors like the type of walls, glazing tiles, direction of the buildings, etc. with information on sustainability benefits and net savings. This software addresses a common practice in the industry that causes problems, which Tang believes is the issuing of separate budgets by the quantity surveyor and the mechanical and engineering departments on the installation of lighting and air-conditioners.

Guidelines for energy efficient building construction for tropical climate locales are available in books like *Building Energy Efficiency Guidelines for Active Design* and *Building Energy Efficiency Guidelines for Passive Design*. These books are written by Malaysians and published in Malaysia and have been used by professionals in other countries, in practice and training/teaching architects. Tang feels these books prove that Malaysia does not have to look to the west for every sustainable trend.

### POOLING TOGETHER FOR CHANGE

However, Tang reckons that there is a need for industry players in the construction line to collaborate, discuss and find new ways to benefit from green development.

As sustainability is defined as “meeting the needs of the present without compromising the ability of future generations to meet theirs”, it has been established and acknowledged across the globe that sustainability affects and involves people, the planet and profits – hence, the vox populi that it is founded on three pillars – economic, environmental and social, “which means sustainable development will not be sustainable if it does not benefit all the respective parties in the construction industry,” Tang adds.

“However, we cannot just solely rely on tax incentives and levies to encourage all parties to go green. Rather, we need to come together to make green development a must and desirable proposition – having

our own solution to suit our country and climate, while simultaneously adopting the necessary trends. We cannot always rely on the government to come up with solutions and directives; we need to take the initiative to make sustainable development a trend,” he prompts.

### GREEN COSTS, GREENER PROFITS

- Upfront investment in green building makes properties more valuable, with an average expected increase in value of 4%. By virtue of lowered maintenance and energy costs the return on investment from green building is rapid: green retrofit projects are generally expected to pay for itself in just seven years.

- Green buildings reduce day-to-day costs year over year. LEED (Leadership in Energy and Environmental Design) buildings report almost 20% lower maintenance costs than typical commercial buildings, and green building retrofit projects typically decrease operation costs by almost 10% in just one year.

- Between 2015 and 2018, LEED-certified buildings in the United States are estimated to have US\$1.2 billion in energy savings, US\$149.5 million in water savings, US\$715.2 million in maintenance savings and US\$54.2 million in waste savings.

### Green buildings use natural resources efficiently, lowering both utility bills and impact on the environment.

- Buildings are positioned to have an enormous impact on the environment and climate change. At 41% of total US energy consumption, buildings out-consume the industrial (30%) and transport (29%) sectors.

- Buildings use about 14 % of all potable water (15 trillion gallons per year), but water-efficiency efforts in green buildings are expected to reduce water use by 15% and save more than 10% in operating costs. Retrofitting one out of every 100 American homes with water-efficient fixtures could avoid about 80,000 tonnes of greenhouse gas emissions, which is the equivalent of removing 15,000 cars from the road for one year.

- Standard building practices use and waste millions of tonnes of materials each year; green building uses fewer resources and minimises waste. LEED projects are responsible for diverting more than 80 million tonnes of waste from landfills, and by 2030 that number is expected to grow to 540 million tonnes.

\*\* Box info retrieved from US Green Building Council website. More interesting information on World Green Building Council website.

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