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SUMMIT

PROPTECH AND THE RESPONSIBLE INNOVATOR

How to cultivate the spirit of sustainability in the Asia Pacific region's real estate sector

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PropertyGuru Asia Real Estate Summit: Digital White Paper (Vol. 1), "Proptech and the Responsible Innovator," was released in September 2021.

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"There has been a lot of attention and discussion about sustainability, but what is really happening? If, as an indicator, we focus on the CO^2 increases over the past three decades, clearly, not enough is being achieved."

– Stephen Oehme
Chairperson, PropertyGuru Asia Real Estate Summit

Stephen Oehme at the PropertyGuru Asia Real Estate Summit: Virtual Edition 2020

Climate champions gather to assess and encourage improved sustainability efforts

We asked the question: "What are you doing?" and so many answered. In unison, everyone said they wanted to do more, they shared their activities, achievements, and lessons learned. There is so much that can and must be done.

By Stephen Oehme

When I spoke at the PropertyGuru Asia Real Estate Summit 2020, the themes focused on the four pillars of sustainability: environment, human, social, and economic. It brought together thousands of delegates from Mainland China, Hong Kong, Macau, Japan, India, Sri Lanka, Myanmar, Thailand, Cambodia, Malaysia, Vietnam, Indonesia, Singapore, the Philippines, and Australia to examine our region's sustainability status – where we are succeeding and where we are not.

Speakers came from all over the world, including the International Finance Corporation/World Bank Group, The Economist, major corporations such as IKEA and Microsoft, leading real estate developers, and other property leaders and professionals.

Together, these prominent figures agree that sustainability is a cause of global concern, but it is also being recognised as a platform for core business focus, progress, and profitability.

CO^2 levels, a direct and indirect measure of environmental sustainability

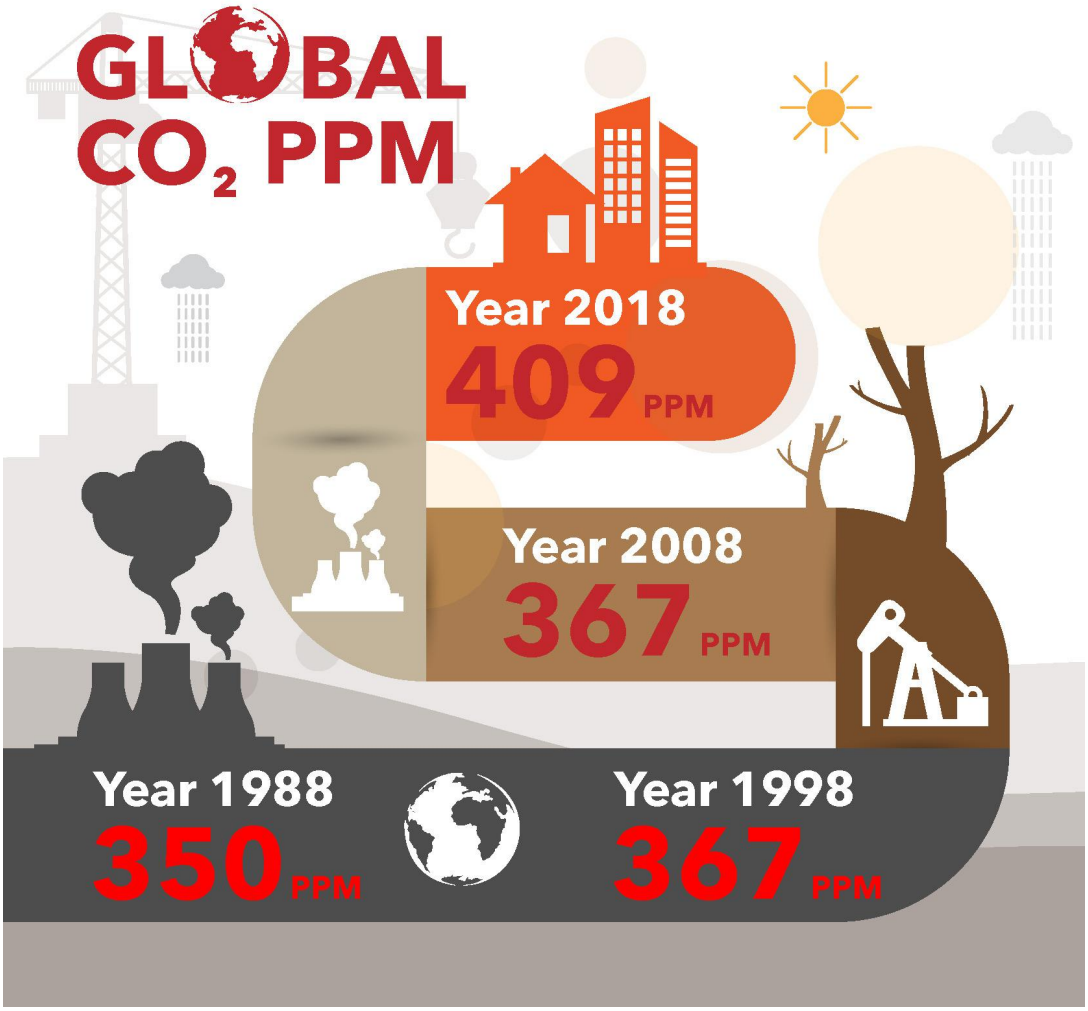
There has been a lot of attention and discussion about sustainability, but what is really happening?

If, as an indicator, we focus on the CO^2 increases over the past three decades, clearly not enough is being achieved.

The Intergovernmental Panel on Climate Change (IPCC) was formed over 32 years ago in 1988. Governments, communities, organisations, and individuals have discussed, debated, and strived to make a difference.

In all that time, what has really been the outcome?

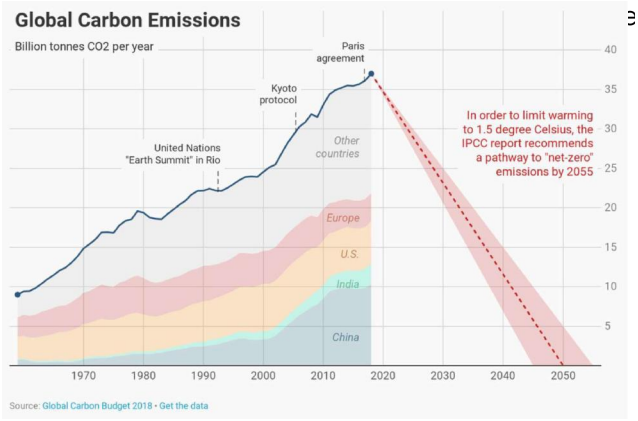
Certainly, the rate of CO^2 level increase since then has been much lower than they would have been, and that is positive.

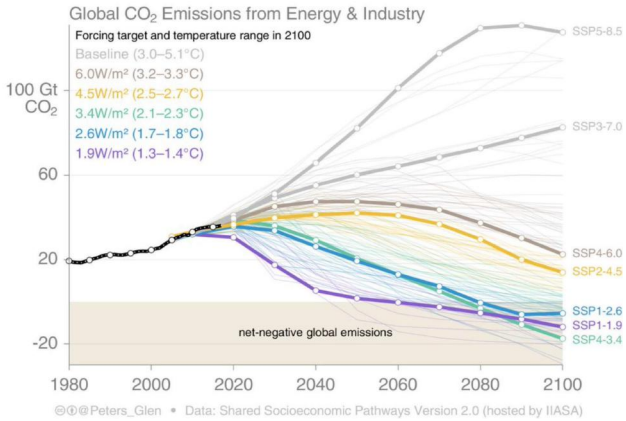


Data source: Intergovernmental Panel on Climate Change (IPCC)

However, there has been no reduction to overall CO^2 levels. The baseline levels have kept increasing.

In 1988 when the IPCC was formed, the CO^2-baseline-level was 350 parts per million (ppm).
10 years later in 1998, the CO^2-baseline-level increased by 5 percent to 367 ppm.
10 years further in 2008, the CO^2-baseline-level increased another 5 percent to 386 ppm.
Another 10 years more, in 2018, the CO^2-baseline-level increased by 6 percent to 409 ppm.





All historical data shows a continual increase in carbon emission and CO^2 ppm. All projections looking forward are potential scenarios and they are all a call for urgent action.

The answer to *what is happening?* is clearly not enough. The threshold we have finally crossed is that the extent and veracity of so much environmental sustainability data and analysis has been accepted as a clear call-to-action globally.

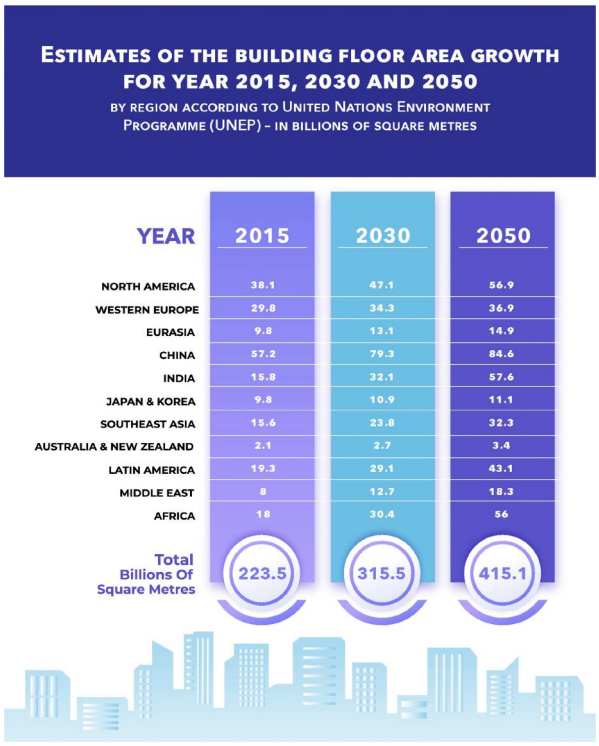
Contribution of the real estate sector

The contribution of the built environment to the world's lack of sustainability is highly significant. Carbon emissions and CO^2 levels are a direct measure to climate change concerns. They are also an indirect measure of the levels of pollution, inefficiency, waste, and so much more that needs to be addressed to achieve a sustainable future.

Anthropogenic carbon emissions – the emissions caused by human activity – significantly come from our real estate sector. It is estimated that nearly 40 percent of all carbon emissions result from the built environment.

With more and more urban migration occurring, a reduction in people earning below a living wage, and an increase in middle income populations, the rate of real estate development is set to keep increasing exponentially. It is estimated that the number of buildings in the entire world will double in the next 40 years.

These staggering levels of additional building area are an enormous challenge in terms of carbon emissions and achieving environmental sustainability. It is a challenge we must accept in-balance across all four pillars of sustainability.



Human and social sustainability

There are calls to reduce the amount of new building – this is an incorrect view.

Over the coming decades, the significant increases in real estate development reflect a rise in the quality of life for billions of people and this is something to celebrate.

This is further compounded by the concentration of people in cities.

Urban migration is occurring globally. It may reduce, but it will not stop. The pursuit of a better life in all countries is a right and environmentally, we must accept these challenges.

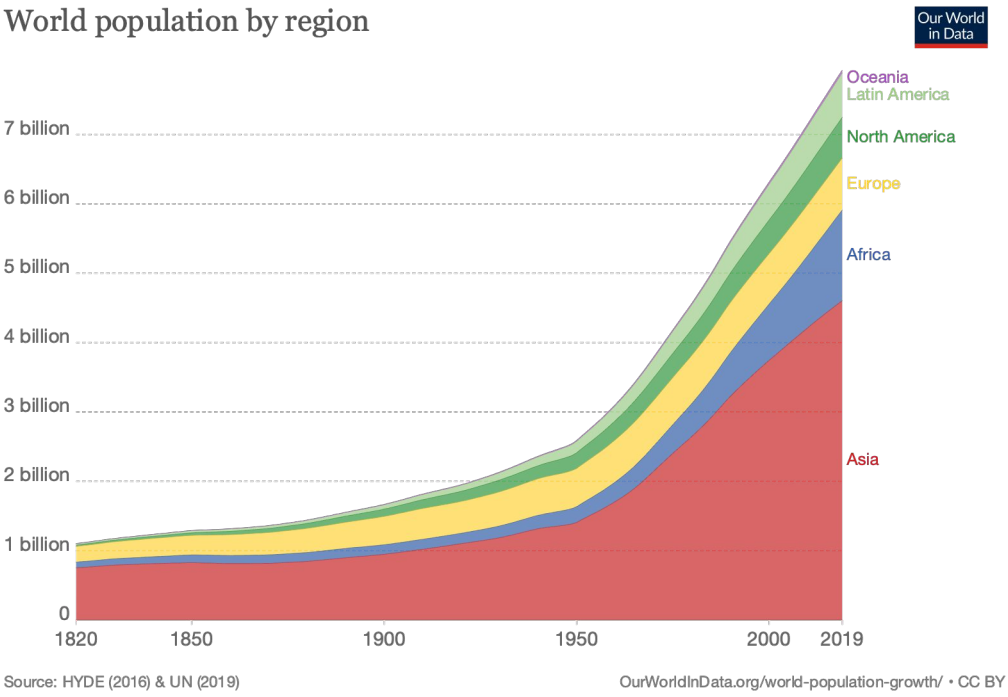
A satellite image of Shanghai. Data source: nasa.gov

The world's population rapidly approaches eight billion people, yet the population growth rate over recent decades has been reducing. Population growth is now approximately one percent per year.

Clearly, the rates of CO^2 increases globally in recent decades, at five percent or greater per year, reflects so much more than the baseline population growth rates.

The Summit covered a vast array of the sustainability pillars in detail; however, this article only enables briefest of mentions.

At the highest macro level, from the human and social sustainability perspectives, the increases in global population, the intensive migration to cities (with access to facilities, better healthcare, etc.), and the rates of real estate development reflect societies that live longer, happier, and heathier lives.



Financial sustainability

The approaches for improved environmental sustainability and the recognition of the underlying macro perspectives for human and social sustainability are parameters that need to be considered holistically and financially.

Sustainability is often perceived as an environmental imperative that comes with significant economic costs, but this is often the cost of the approach and not of sustainability itself.

Sustainability must make economic sense. Otherwise, it will not be comprehensively achieved.

Some sustainability initiatives can increase capital costs and over time be returned through operational savings. However, very often, sustainability does not increase upfront capital costs at all. What is required are holistic reviews. Escaping Business as Usual (BaU) is not only the pathway to improved sustainability, but also the highway for achieving financial efficiencies.

Progress is in our hands

Very often, developers, designers, financiers, and contractors are very surprised at the economic benefits that occur through holistic reviews. The attainment of sustainability also results in highly significant economic benefits – both upfront capital savings and reduced operational expenditures.

The PropertyGuru Asia Real Estate Summit in 2020 explored our industry and the four pillars of sustainability to establish where we are succeeding and where we are failing. We know enough facts and we know enough science. The last three decades of sustainability focus have resulted in extensive expertise. We urgently need comprehensive and holistic actions.

We are proud to be joined by so many championing sustainability – its progress is in our hands. ■

Growing proptech investments in the Asia Pacific region

Proptech companies are maturing beyond startup years, scaling up and seeking larger amounts of investment

By James Dearsley

When we look at the total amount of investment into the global proptech industry, the numbers have been steadily going up since 2010.

Between 2010 to 2016, the number of individual funding events was seen to have risen in parallel to total investment amounts. This was due to more and more proptech companies entering the market, and successfully raising early-stage investment of relatively humble amounts.

Since 2016, however, we have seen the number of funding events drop off while investment totals continue to climb.

This shows an important trend happening in the industry at the moment – it is maturing and consolidating.

More money raised over fewer events means a higher average amount being invested each time. This, in turn, indicates that proptech companies are maturing beyond early, startup years, scaling up and thus seeking larger amounts of investment.

At the same time, fewer new startups are entering the market, and more of those already in existence are starting to engage in M&A activity.

This is all very positive for the proptech and real estate industries because fewer companies on the marketplace allows for greater transparency and a better understanding of who is offering what.

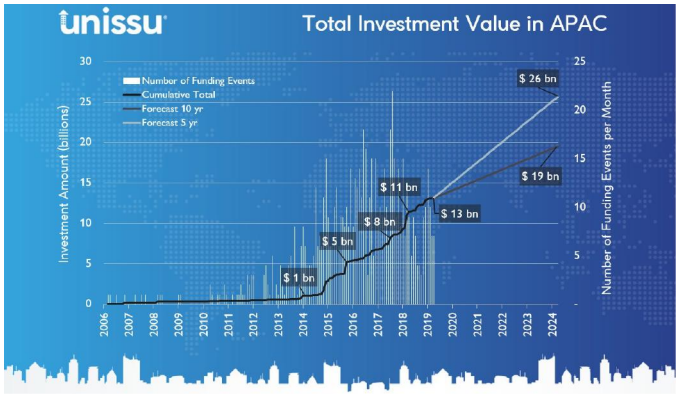
At Unissu, we have shown how many proptech businesses are offering very similar services to the real estate industry. We have reached a maturation point now where only the best of these companies are surviving.

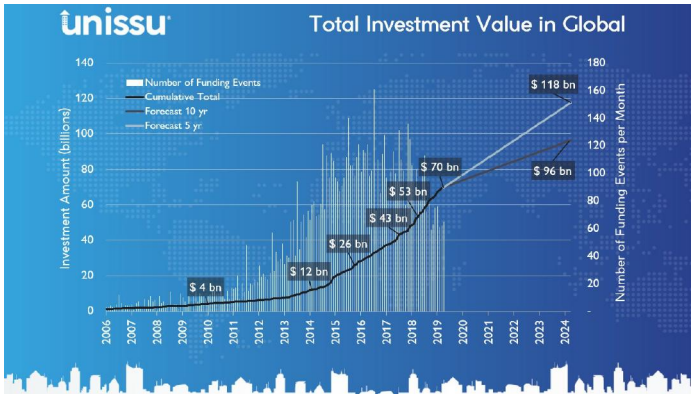
Investors are becoming more and more knowledgeable about the market, and so weaker, less profitable companies are struggling and, without sounding harsh, rightly falling by the wayside.

This trend is again mirrored in the year-on-year growth of global industry investment.

Global investment has been, more or less, increasing steadily since 2010. With the odd small exception, each year has enjoyed growth compared to the last.

However, while growth was rapid from 2011 to 2016, it has slowed somewhat up to present day.





Again, this is the result of a maturing market. There is less hype and more knowledge, thus resulting in a less frenzied rush to invest quickly and without scrutiny.

Part of what we're doing at Unissu is creating transparency for the traditional market to better understand and navigate proptech. This added clarity has enabled investors, both VCs and incumbent businesses, to be wiser and more selective with the money they give out.

Future of global investment totals and year-on-year growth

It is fully expected for the total global proptech investment to continue growing for the foreseeable future. The market is still very young and has barely scraped the surface in terms of fulfilling real estate's needs and potential.

We also expect the number of individual funding events to continue falling as fewer companies start generating higher amounts of interest. Investors will also continue to grow in confidence, secure that larger amounts of investment will continue to generate rapid returns.

Our projection for year-on-year growth, based on the past ten years, is that it will level off in the coming years, not altogether plateauing, but growing at a profoundly slower rate than what we have seen to date.

If we based projections on the past five years, however, it is suggested that year-on-year growth will actually become negative in the coming years.

More broadly speaking, the future will see a greater integration of property and technology as the wider industry becomes more educated on the matter, much of which will be driven by the evolving demands of the consumer.

Total APAC investment

Since 2011, APAC investment trends have been less predictable than global investment trends.

We can see from the data that the APAC proptech market began emerging in earnest much later on than the world as a whole. APAC activity only really started to pick up in 2014, by which point the global industry was already showing rapid growth having received over USD12 billion in investment.

From 2014 onwards, APAC investment has, as stated, been less predictable than the overall global trend, but shows an overall pattern of gradually rising.

It is important to note that there has been a lack of visibility and therefore a lack of available data around APAC proptech businesses. This means that analysis of the region may not be as accurate as the global picture.

Future of APAC investment

As visibility of the APAC market increases, especially in China, we expect investment totals to increase significantly, partly due to increased interest from overseas investors, mostly from Europe and North America. This means upcoming growth will likely exceed anything we've seen to date.

This doesn't, however, mean that APAC growth will stay constant on a year-on-year basis. Total investment will certainly keep rising, but, just as we have seen in the global market, increased visibility will result in more selective funding, less new companies on the market, and an altogether more astute approach to industry investment.

It is possible that year-on-year growth will happen in APAC, especially if projections are based on the past 10 years, but if China's market does not open up more to the globe, and much of the region continues to remain unknown, the region may suffer.

The same applies if APAC proptech companies continue to show a relative disinterest in global expansion. While companies from the US and Europe are increasingly looking to expand their global territory, APAC companies, on the whole, remain confined to their domestic market. ■

"Green buildings are no longer just a trend. If we are to meet our Paris commitments, green buildings are an imperative."

– Angelo Tan,
Country Lead for the Philippines, Climate Business,
International Finance Corporation,
World Bank Group

IFC's Angelo Tan at the PropertyGuru Asia Real Estate Summit: Virtual Edition 2020

Proptech paves the way for green building adoption in developing countries

Through technology, emerging countries will be able to democratise green buildings and advance the adoption of green certifications

By Angelo Tan

In my country, we have this popular Filipino slang word promdi, derived from the phrase "from the" which is short for someone who came "from the provinces". I am what you would call a promdi and it used to be that being called one was a bit condescending, because it made you feel stereotyped as an unsophisticated person from the countryside. But over the years, its meaning has changed, probably because many people from the provinces have made their name in Philippine society.

I was born and raised in a charming town in the province of La Union, a four-hour drive north of the capital. La Union is popular for its beach towns and for a surfing town called San Juan. On the weekends, we would catch a ride on colourful jeepneys, which are like small buses, on the way to the beach for a swim. I grew up near a farm where sunshine and the smell of growing crops, animal dung, and cultivated soil were constant.

I'd say I had a very simple but happy childhood — one that some city folk would call unsophisticated. But you grow up hearing of a better life in Manila so like many promdis, I eventually made the decision to leave the small town to go to the big city in search of a better life. It seemed like a great idea at the time.

Finding sophistication in a traditional dwelling

Fast forward 10 years later, I am now a full-fledged urban professional, firmly rooted in the big city. I also just came back from Sydney last September, having completed my Master of Sustainable Built Environment degree from the University of New South Wales.

Upon arrival in Metro Manila, I was required to do a two-week home quarantine. My apartment is a 60 square metre, one-bedroom unit with two small windows on the 40th floor of a dense condominium development. Gazing out of the tiny openings, I was reminded of life back in the province where my family had once lived in a bahay kubo (nipa hut).

This type of house is common in farming villages in the provinces, and to people from the city, the nipa hut may look a bit backward. But I remember it was never hot inside the hut because it had sufficient openings for cross ventilation, and it allowed abundant natural daylight. The roof also had a steep pitch, which separated us from the rising hot air and provided for a cooler interior. The house was elevated through stilts, which prevented floodwater from entering during typhoon season.

The materials used were sustainably sourced from locally available materials.

CLIMATE CHANGE

- 7 M premature deaths
- $2-4 B direct costs to health
- 100 M people to extreme poverty

BUILDING SECTOR

- 39% of total energy-related CO_2
- 36% of final energy use
- High-carbon urban infra: locked-in for 40-70 years

These included bamboo, sawali (bamboo mats), and anahaw (palm) — all climate-appropriate, breathable materials that need minimal processing, from raw material extraction all the way to construction.

My 14 days of isolation and reflection made me realise that we, promdis, may have figured out sustainable design through vernacular architecture long before the concept even became a fashionable one in big cities. But even in the provinces, we are seeing so much change.

A cause for concern

My post-graduate thesis dealt with green building certification in the context of developing countries. During my research trip to my home country, I got the opportunity to go out of the metro, where I witnessed uncontrolled urban sprawl, conversion of precious agricultural land to concrete and asphalt, and unsustainable architecture, totally devoid of place and context.

The pressure to decongest urban areas through decentralisation — a trend not only seen in the Philippines, but across Asia — has resulted in the creation of new growth corridors or next wave cities. However, decentralisation is much more nuanced than just identifying strategic growth areas where population is projected to spike.

And what's worrying is that we're still designing and constructing our buildings like business as usual. This locks in inefficiencies in the real estate landscape, leading to vicious cycles that are hard to break out of, especially for a country like the Philippines, experiencing double exposure through rapid urbanisation and climate change.

The climate crisis

The International Finance Corporation (IFC) and the World Bank Group recognise climate change as an acute threat to global development that increases instability and contributes to poverty, fragility, and migration.

Co-pollutants associated with carbon emissions are already responsible for more than seven million premature deaths each year, while direct costs to health are estimated to be between USD2.4 billion per year by 2030. Climate change could force as many as 100 million people into extreme poverty by 2030.

The building sector accounts for 39 percent of total energy related carbon dioxide emissions and 36 percent of final energy us. Without the right choices today, high carbon urban infrastructure will be locked in for the next 40 to 70 years.

The message from leading scientists at the Inter-governmental Panel on Climate Change (IPCC) is that there is no time to waste. The world has just under a decade to avert climate catastrophe, with the IPCC recommending a 45 percent reduction in emissions below 2010 levels by 2030. The amount of coal in the global electricity mix would need to be reduced to close to zero percent by 2050. Green buildings have a major role to play.

Call to action: Global green building adoption

Since the Paris Agreement was signed in December 2015, there has been a strong demand from IFC clients in low- and middle-income countries for rapid, concerted action on climate change.

Green buildings are no longer just a trend. If we are to meet our Paris commitments, green buildings are an imperative. Towards this end, the IPCC has identified green building certification as an important pathway. And indeed, in the last decade, we've seen the rapid expansion of green building footprint.

According to data presented by the World Green Building Council, many developed countries already have a mature green building market. However, for countries in the Global South, the uptake of green buildings has been much slower. In the Philippines, for example, the current footprint of all green buildings combined is a mere 10 percent of what's constructed annually. My country has almost 200 green buildings, but around 90 percent of these are commercial buildings dominated by office towers in the metro.

Green building opportunity in emerging countries

By 2060, the green building sector will double, occurring mostly in emerging markets, where a USD24.7 trillion investment opportunity in green buildings now exists.

According to IFC's Green Buildings report, two thirds of this is in East Asia Pacific and South Asia, where more than four billion people are projected to live by 2030. In developed countries, the urban environment is mostly fully built up and retrofitting is a strategy towards increasing the footprint of green buildings. But in developing countries, building it right the first time seems to make more sense than building back better, as these countries are not fully built up yet.

Overcoming challenges through proptech in green buildings

Democratising green buildings is not as easy as it sounds. Developing countries face challenges that are very different from those encountered by developed countries. In Southeast Asia, some of the key issues are the higher real or perceived costs for building green, lack of trained or educated green building professionals, and the perception that green buildings are for high end projects only.

Through IFC's Green Building Market Transformation Program, we are able to provide investment and advisory for banks and developers, as well as advise governments about green building codes and incentives.

In my role, I forge partnerships with real estate developers, investors, building professionals, certification providers, academia, and public policy makers across the country towards advancing the adoption of Excellence in Design for Greater Efficiencies (EDGE).

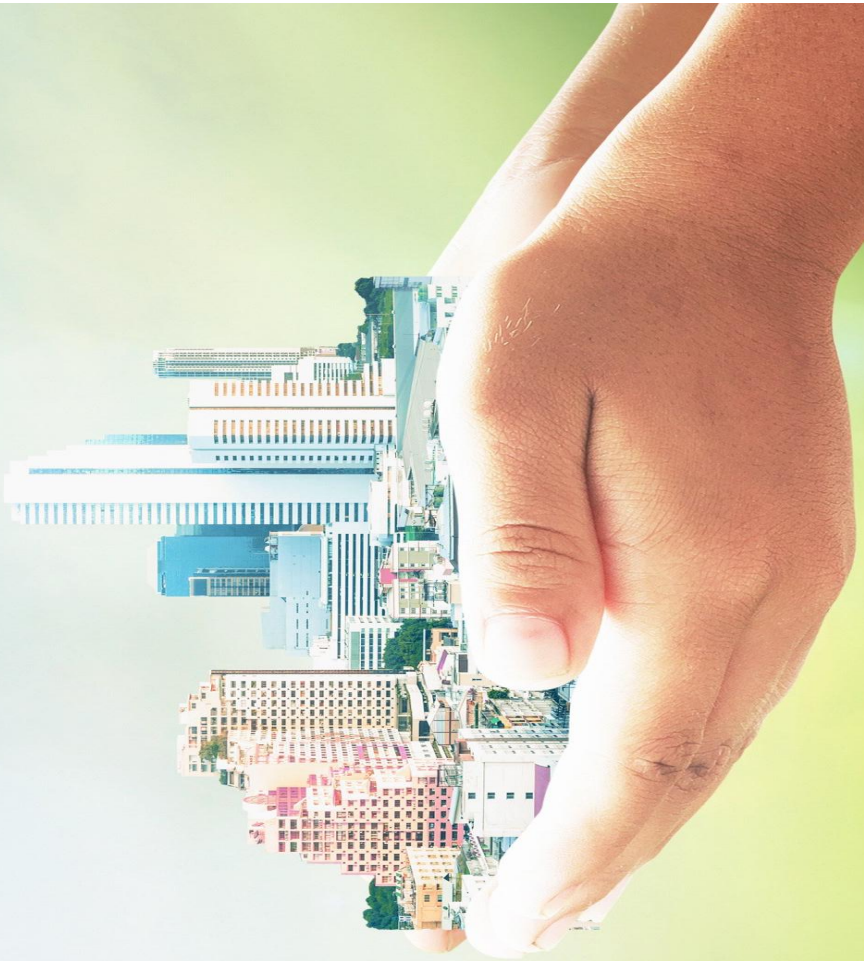
EDGE is an integrated online platform, green building standard, and certification system, designed to make green buildings much more accessible, affordable, and inclusive for emerging markets and developing economies. Proptech, and the digitalisation of green building certification, have an equalising power.

Eventually, we're able to redefine what is considered the baseline for every country, allowing everyone to elevate the standards of building design and construction.

Our work at the International Finance Corporation will continue to play a leadership role in the global transition to a low carbon path by democratising building sustainability. Central to our mandate is to encourage the greater participation of emerging markets, which are expanding at a very fast pace to keep up with high population growth and rapid urbanisation.

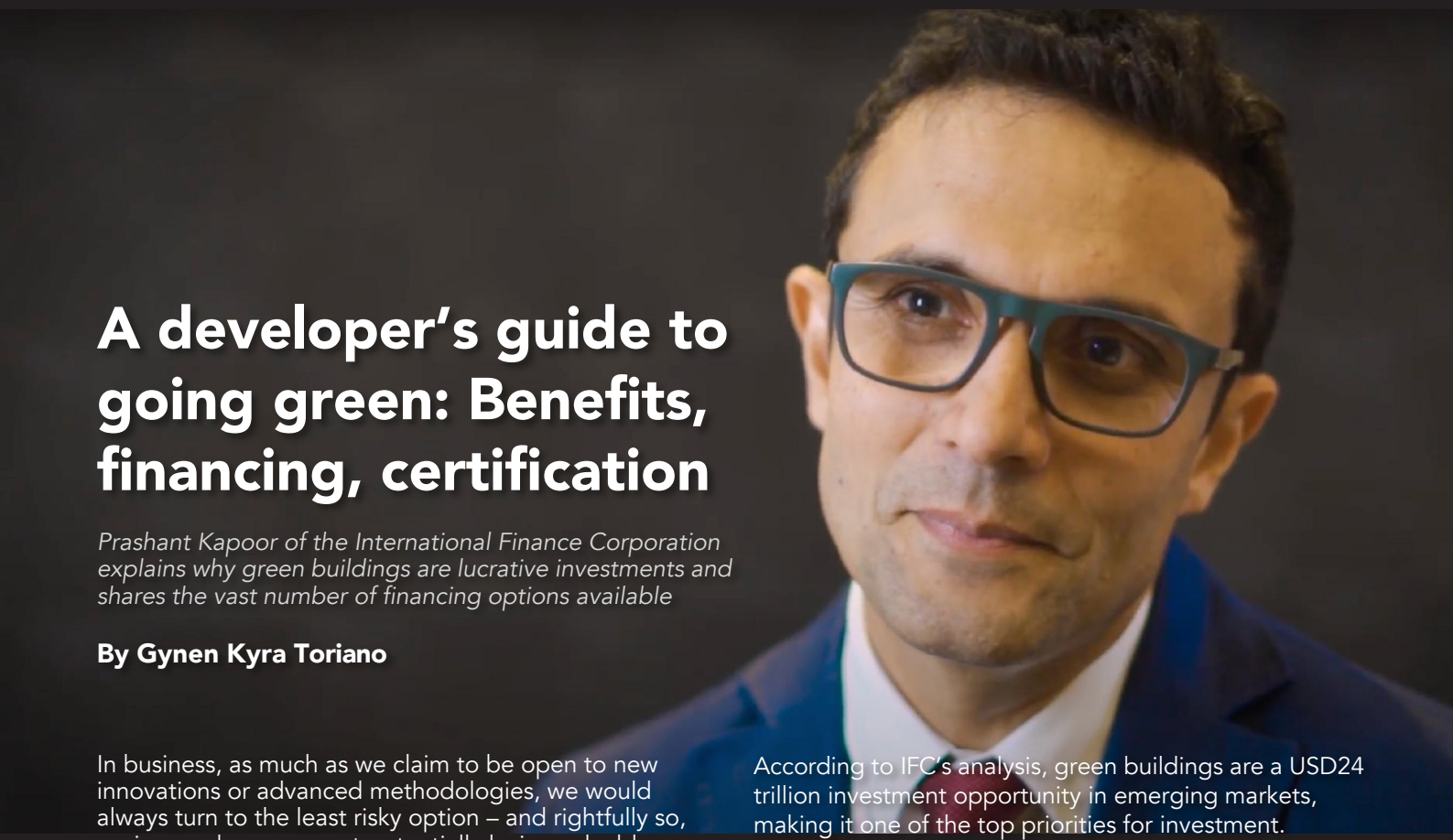
The real estate sector can be shaped by progressive developers that demonstrate a proof of concept and pave the way for others to follow. Along with policies and financial products that create an enabling environment for green buildings, voluntary commitments and actions by these players have been highly critical.

Join us and take the challenge as we integrate proptech in green buildings, through EDGE, towards making sustainable, resilient, and affordable buildings much more accessible and inclusive for everyone. ■



"Since the launch of EDGE, the IFC has been able to invest in green building projects. So far, IFC has deployed USD6 billion in green building investments."

– Prashant Kapoor
Chief Industry Specialist, Green Buildings and Climate-Smart Cities,
International Finance Corporation, World Bank Group



IFC's Prashant Kapoor at the PropertyGuru Asia Real Estate Summit: Virtual Edition 2020

A developer's guide to going green: Benefits, financing, certification

Prashant Kapoor of the International Finance Corporation explains why green buildings are lucrative investments and shares the vast number of financing options available

By Gynen Kyra Toriano

In business, as much as we claim to be open to new innovations or advanced methodologies, we would always turn to the least risky option – and rightfully so, seeing as change meant potentially losing valuable work hours, manpower, and capital.

Be that as it may, new tools or processes often lead to improved productivity and greater savings if implemented correctly.

This is the case with green buildings in real estate. The industry alone is complex and tricky as it is, consistently demanding developers to maneuver a wide array of financing problems, commercial feasibility issues, regulations, and the like.

With the dire impact of climate change manifesting all around us, the real estate industry has a major role to play to mitigate the adverse effects. But who are we to compel them to make a change when they are the ones staking all their resources?

At the first virtual edition of the annual PropertyGuru Asia Real Estate Summit, Prashant Kapoor, chief industry specialist for green buildings and climate-smart cities at the International Finance Corporation (IFC), a member of the World Bank, answers the *Whys* and *Hows* of green building and green financing.

A lucrative investment opportunity

From designing and planning to construction and maintenance, building green will involve more resources than what is normally asked for. "But what if I say to you that there is simply too big an opportunity to miss," pressed Prashant. "There is a huge opportunity in terms of investments, but also to reduce climate change impacts."

According to IFC's analysis, green buildings are a USD24 trillion investment opportunity in emerging markets, making it one of the top priorities for investment.

South Africa takes the leap

During a business development trip in South Africa, Prashant noticed that most developers' portfolio consisted of affordable housing. Once he introduced the idea of affordable green housing, he shared that he was mostly met with doubt and cynicism.

Nonetheless, they were able to persuade the creation of an affordable housing fund called the International Housing Solutions, which aims to build 2,000 resource-efficient homes through the use of EDGE, an app developed by IFC that is both a universal standard and a certification system.

He revealed that the fund managers were concerned as they did not only have to prove to themselves that the projects were worth it, but they also had to persuade their project development partners. Eventually, all parties took a chance and seized the opportunity.

A worthy endeavor

Baldwin Properties, one of the biggest residential developers in South Africa, works with the housing fund. The success of their green developments inspired the CEO to certify 16,000 units throughout 10 of their projects across the country.

Seeing a window of opportunity, large local bank Absa decided to offer green mortgage products to homebuyers.

"As you can tell, all of these situations have nicely snowballed into a market transformation and we have since been able to replicate this kind of outcome in other places in Asia, Latin America, and other parts of Africa," continued Prashant.

Going green did not only benefit developers and banks, but also homeowners of green residences who reported 40 percent savings in utility bills.

	Incremental Cost	Utility Savings/ Month	Payback Period in Years
Homes	$270/Unit	$15/Unit	1.5
Hotel	$153,000	$8,500	1.5
Shopping Center	$132,700	$8,230	1.4
Light Industry	$117,490	$6,170	1.6

Source: IFC's EDGE Green Buildings ROI; costs are reflected in US dollars

Easier process for developers

Aside from proving that green buildings are a worthy investment, Prashant shared that IFC has been trying to breakdown all the barriers that have prevented the industry from taking a plunge by coming up with solutions that would make the process easier and more affordable to everyone.

They also had to find a way for developers to showcase their green credentials, which is why they established the existing green building certification programmes like LEED. However, they found that the existing ones are too daunting, expensive, complicated, and time-consuming for their client's mainstream projects.

"Emerging markets, where most of our buildings happen to be, require a simple, quick, and affordable rating system to make it accessible," he explained.

And that is how EDGE came to be. This tool allows developers to input the building type and location; calculate the energy, embodied energy, and water usage of the building; apply for the EDGE standard; and optimise for the lowest cost – in just a few clicks.

Prashant added: "Since the launch of EDGE, IFC's been able to invest in green building projects, such as schools, housing, hotels, offices from our old account, as well as through investments in banks. So far, IFC has deployed USD6 billion in green building investments."

THE **FREE SOFTWARE** SHOWS RETURN ON INVESTMENT AND IMPACTS FOR RESOURCE EFFICIENCY MEASURES, CALIBRATED FOR LOCAL CONDITIONS

WWW.EDGEBUILDINGS.COM

Underlying worry: The cost

With green buildings, cost outcome and monetary gains have always been a concern. Fortunately, growing evidence across several markets reveal that the incremental cost of building green is much lower than what most assume, particularly when green measures are adopted early on in the design and planning stage.

According to IFC, only around one to two percent of the construction cost is devoted to the greening of affordable housing projects. This seemingly small percentage can actually yield high returns to building owners across major sectors in real estate, whether residential, commercial, or industrial.

But what better way to illustrate the point than to share some green financing success stories of their clients:

A winning strategy

Asia Green Real Estate, a company that invests in building projects across Asia, has discovered a winning strategy to appeal to institutional investors. This asset manager provides opportunities to private and institutional investors who are looking for both financing and sustainability returns.

To attract capital from investors and establish a strong portfolio, they managed to become an EDGE Champion, which meant that all their projects that qualify for financing must commit to the EDGE standard before any transaction proceeds.

Leading the commercial sector

ArthaLand is a pioneering developer in the Philippines that built the Century Pacific Towers, the first green-certified zero carbon building in the world. To finance this construction, they used a green bond that received such a high demand, enabling them to raise USD59 million.

In 2019, the developer took home the Best Commercial Green Development (Asia) title at the PropertyGuru Asia Property Awards Grand Final, further proving their reign in terms of sustainable developments across the region.

Going green: The process

To get started on the journey toward fighting climate change, Prashant shared the following guidelines:

1. Meet green building definitions compatible with the financing industry. The project or development must be at least 20 percent resource-efficient and must be certified as green by a reputed body.

2. Start planning a vision for the future. Instead of choosing a few flagship green projects, he suggests taking a portfolio approach. One must keep in mind that investors are already asking, "We like that you have a few green projects, but what are you going to do in order to get us to the Paris Agreement in 2030/2050?"

3. Reach out to banks and investors. Find someone who will be able to support you financially or provide free technical assistance. You can even urge your real estate association to convince the banks to create green building products, which will benefit you, your bank, and your customers.

A huge number of green developments have been popping up throughout the Asia Pacific region in the past years. And as these numbers grow, the processes and resources of going green will be even more accessible and affordable for everybody. ■

"We need an intervention — an intervention on how we plan our cities and our communities."

– Hari V. Krishnan,
CEO & Managing Director,
PropertyGuru Group

PropertyGuru Group CEO Hari V. Krishnan at the PropertyGuru Asia Real Estate Summit: Virtual Edition 2020

Living sustainably and responsibly for our future and our children's future

'Many of us will live to see the cities of tomorrow, but all of our children will'

By Gynen Kyra Toriano

Imagine losing hundreds of hours of your life stuck in horrendous traffic as you commute to and from work. Imagine living in a small apartment in a highly congested neighbourhood, with the aggravating noise of the city – from planes flying overhead to drivers honking and revving their engines to workers in construction sites drilling – all but lulling you to sleep. Imagine witnessing your hometown and other cities across the world submerged under water. Imagine living in a country with unpredictable weather conditions.

And if that doesn't pull at your heartstrings, imagine your children wearing masks for most of their lives, not just because of a highly infectious disease but also because of the permanent toxic air. Imagine not giving your children and the future generations the quality of life that they truly deserve.

You must admit that some or most of these situations already sound uncomfortably familiar, which is why we must accept the fact that we are already living in very concerning times.

Need for change

For most individuals, moving to cities mean access to improved social services, higher quality education, better career opportunities, and even basic amenities that are unavailable in their hometowns.

And with this mindset, in Vietnam alone, around 200,000 people move to Ho Chi Minh City from towns and villages each year. As of the latest tally from Macrotrends, the largest city in the country is home to 8.8 million people, boasting a 2.74 percent increase from the previous year.

Yet, Vietnam is just one of the many mega cities in Asia that are continuously growing in population.

Data published by the United Nations reveal that 25 percent of the population of the top six countries in Southeast Asia will be relocating to mega cities between 2015 and 2025, amounting to an estimated 350 million people residing in cities by 2025.

In December 2019, we posed this question: *Is Asia prepared for the challenges that come with rapid urbanisation?* Over a year later, here we are still confounded as to how we can completely overcome said challenges.

Think about it. Parts of Malaysia, Indonesia, Singapore, and Thailand are still blanketed by toxic air caused by manmade fires. Penang, Jakarta, Bangkok, and Manila are still submerged under flood waters every few months. Bangkok, Jakarta, Manila, Hanoi, and Kuala Lumpur are still among the most congested cities in Asia.

Lessons for mega cities

"We need an intervention - an intervention on how we plan our cities and our communities," said Hari Krishnan, CEO and Managing Director of PropertyGuru Group, as he shared his vision for the "homes of the future" at the first virtual edition of the annual PropertyGuru Asia Real Estate Summit in December 2020.

To minimise the impact of rapid urbanisation, he shared innovative solutions established by our developed neighbours, to whom we can take as a precaution and as an inspiration.

In Los Angeles, California, for instance, Mayor Eric Garcetti has been monitoring impoverished communities with less developed urban infrastructure across the city. His findings proved that there is a causal relationship between the lack of bus shelters in the area and the inability of the children living in such a poor state to finish their homework.

"Stretch this out over time and you're able to see that there are poorer life outcomes for these children growing up in poorer communities," he shared. "This is a lesson that our Asian mega cities can ill afford to ignore with our large populations of poorer people."

In Tel Aviv, Israel, a joint effort by the government and private corporations have led to the construction of electric roads that will charge and power the city's public transportation, with plans to expand to other areas of the city. With the use of electric vehicles, the country is set to reduce its carbon footprint drastically for years to come.

Helsinki, Finland has also found a way to deal with their congestion problems by implementing the Whim MaaS (Mobility as a Service) app that gives citizens access to e-scooters, bicycles, self-driven cars, buses, taxis, and ferries by signing up to the single subscription service. This app has proven to be quite a success, having expanded to Antwerp (Belgium), Birmingham (England), Tokyo (Japan), and even Singapore.

Taking a stand

Since we now live in an era where information is easily accessible because of technology, most of us are painfully aware of the climate crisis and the dire impact of urbanisation. Though easy access to information may have its obvious pitfalls such as the spread of fake news and cyber scams, the citizens of Hanoi and Jakarta have used their awareness for good.

Hanoi citizens organised a seminar where they all gathered and shared the best solutions from across the world and specifically from the Asia Pacific region. The people of Jakarta, on the other hand, sued the government for the poor quality of breathable air.

Hope for the future

In the semi-annual consumer sentiment survey conducted by PropertyGuru in Singapore, respondents foresee living in a sustainable home, even if it would cost them more than a regular abode. They even shared their eagerness to have a more efficient cooling system and to use solar panels to power their homes.

Across Southeast Asia, Hari shared that most people have decided to live in self-contained townships, which are designed to uphold communal living by providing an abundance of lifestyle amenities and infrastructure within the vicinity.

"These townships are built by private developers, and this partnership between the private developers and the public infrastructure gives us a great opportunity to improve the homes of the future," he added.

Making a change

Most developers now realise their crucial role in helping combat the climate crisis by producing sustainable developments. We are now seeing allotment gardens in construction projects that will allow future residents to grow their own vegetables, herbs, and fruits, promoting self-sustainability through food supply.

The use of technology in real estate has also advanced, with digital apps now enabling residents to control their water and energy supplies, and to send notifications about appliances that are working inefficiently.

Property developers have even embraced prefabricated skyscrapers, which will help ease noise and air pollution during the construction stage – and among the countries is Singapore, home to the world's tallest at 200 metres high once completed in 2026.

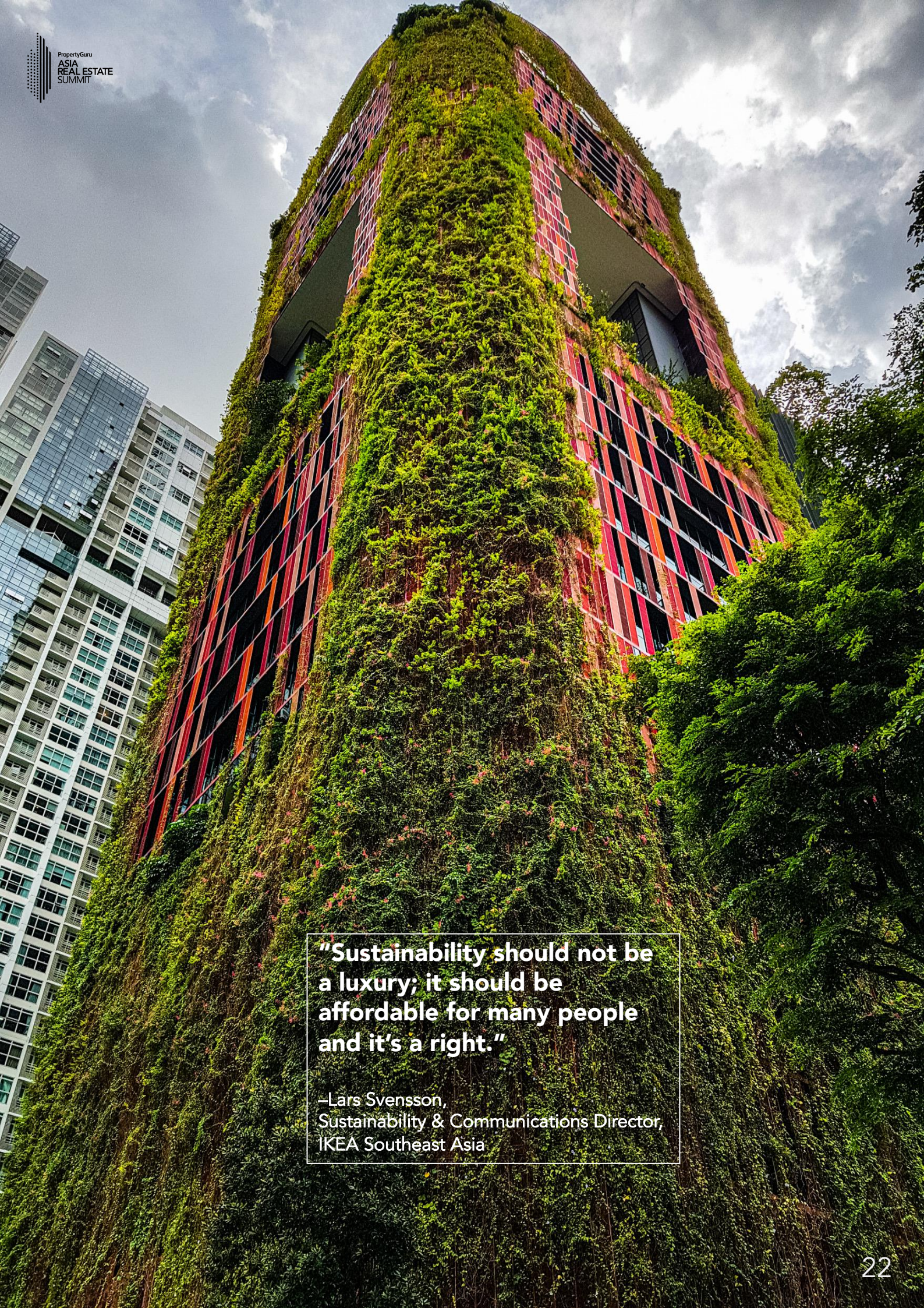
But the citizens and private developers can't do it alone. The government will also have to introduce more policies in place to reduce the impact of rapid urbanisation. Since more developments are planning to provide electric vehicle chargers, Hari suggested introducing subsidies to encourage citizens to switch to electric vehicles.

He added: "You hear about green loans for developers so that they can build in a more sustainable manner, how about green loans for property seekers who are actually willing to invest in these sustainably-built homes?"

As for modular construction and buildings, he expressed the need for a policy change so we will see more of these prefabricated buildings that help improve the quality of air and noise in our cities. And those are just some of the solutions that can encourage the construction of green buildings.

We are already feeling the impact of urbanisation and climate change as we speak. Fortunately, it is not yet too late to do something. We have the power, technology, resources, and even awareness to make a change – even as individuals. All that is left is to act for our future and for our children's future.

Thus, Hari leaves us with this food for thought: "Many of us will live to see the cities of tomorrow, but all of our children will. We owe it to them to build the cities of tomorrow and not just replicate the cities of yesterday. Providing sustainable urban living solutions might well be the defining call to action of our lives." ■



"Sustainability should not be a luxury; it should be affordable for many people and it's a right."

–Lars Svensson,
Sustainability & Communications Director,
IKEA Southeast Asia

IKEA's sustainability and communications director Lars Svensson at the PropertyGuru Asia Real Estate Summit: Virtual Edition 2020

Is sustainability a luxury not everyone can afford?

Global brand IKEA believes that, as a business, they possess huge responsibilities that impact the world's most topical, critical needs

By Ruechupa Jiratanasophin

We now live in a digital era where we have the technology and knowledge to create more environmentally friendly product as we start to realise the world that is crumbling around us. However, are we, as individuals, institutions, and especially businesses, doing enough to protect the world that provides us with the air we breathe and the water we drink? Are we doing enough to protect these finite resources, while ensuring that everyone has access to the same necessities in life?

Academics, business executives, and environmental activists all have different answers to what it means to be a sustainable business, according to Harvard University business history professor Geoffrey Jones, who said in a recent PBS NewsHour report that "there is a crippling vagueness about what sustainability means."

Multiple organisations are harvesting electricity from renewable energy, which emits fewer carbon emissions and saves the company money. However, environmentalists have hauled up concerns that materials used in solar panels have been extracted unsustainably and solar energy firms do not track their carbon emissions.

While there's no single firm definition for sustainability, there's lack of accountability. More businesses declare to be sustainable, but only a few can authenticate such business practices.

The Sustainability and Communication Director at IKEA Southeast Asia Lars Svensson unveiled IKEA's integrated sustainable initiatives and zero carbon efforts that help fight global waste pollution and climate change at the PropertyGuru Asia Real Estate Summit 2020.

He shared that as a business, IKEA believes that the company possesses huge responsibilities that impact the world's most topical, critical needs.

In his session, Lars revealed three main areas IKEA has chosen to address:

- **Unsustainable consumption**. The world wouldn't harbour enough resources if everyone were to consume as much as those in the middle- and higher-income groups and developed countries.
- **Current climate situation.** Both individuals and businesses immensely impact climate change, highlighting the vitality of addressing this present situation.
- **Growing social inequalities.** As a consequence from COVID-19, for the first time in 20 to 30 years, over a hundred million people in the world will move down the poverty line.

To address these areas, he shared IKEA's initiatives, which are to:

- Enable people to live healthier and more sustainable lifestyles at home;
- Be climate positive and circular by 2030; and
- Impose social and equal agenda on reducing inequalities.

It is incredibly important that such initiatives are anchored in the business' value chain, as sustainability is an engine for driving growth, profitability, efficiency, and morality, according to Lars.

Taking initiative

IKEA as a company recognises that its total value chain contributes to 0.1 percent of the world's greenhouse gases. Manufacturing and the sourcing of raw materials may be the largest factors, but 70 percent of the contribution comes from customers' journeys to and from store locations.

In response, IKEA Thailand has collaborated with Thai authorities in building a U-Turn to condense visitor's travel time by up to 30 minutes.

Additional car parks have also increased accessibility and reduced waiting times of cars entering and exiting out of the centre.

IKEA's commercial solar technology system in Singapore and Thailand is among IKEA's other sustainable projects. Such solar panels generate renewable energy that helps power the store, while also doubling up as a sun cover for the carpark.

In Singapore, this first commercial solar cooling system harnesses the sun to heat up water in pressured pipes, which, in the long run, saves money for the store.

"We are always having the ambition to ensure that they [sustainable initiatives] are also at the same time improving our bottom line and saving money, increasing efficiencies.

"Sustainability actually helps you save resources, cuts costs, and enables you to become more profitable – and that's the principle we apply also when it comes to pricing our products and solutions to offer customers. Sustainability should not be a luxury, it should be affordable for many people and it's a right," said Lars.

There are various solutions that other companies and organisations in the region could emulate. Lars mentions that IKEA is considerably also a real estate business. Hence, the way buildings are constructed sets an agenda on how sustainable the company can become. Building in accordance with green certification standards can aid the construction of stores and real estate that lessen climate footprint, while procuring more efficiency.

IKEA, as a consumer company, provides home and furniture products that promote sustainable living not only to its consumers, but also to its employees, suppliers, and the community at large.

"We do that partially by securing what we need to create sustainability as one of the five design elements of all the products that we have. So, one aspect could be, you could be safe and ensured that sourcing of products have been done at a responsible manner without severe environmental impact, or without taking advantage of children or labour, breaking any of the laws when it comes to environmental protection, etc." Lars said.

Save the earth, save your money

As consumers, we can't help but recognise that eco-friendly products almost always cost more than traditional items do. This is because eco-friendly products are usually more expensive for reasons such as its demand isn't high yet, ethical practices and fair labour are more expensive, and third-party certifications are costly.

According to Lars, IKEA focuses on improving everyday life for people by offering affordable solutions to better life at home. Improving everyday life not only covers individuals, but rather includes the environment, biodiversity, and different aspects of social inequalities in society.

IKEA realises that people should be able to save money in the process of doing the right thing, especially as COVID-19 has detrimentally impacted pocket money. Sustainable products shouldn't be priced as a luxury, allowing people to save more money, electricity, water, and even simple commodities like food.

The company also recently announced their sustainable solution to help combat waste pollution and climate change by buying back furniture. This empowers circularity, in which customers are provided a secondhand platform to sell their products to other customers. This global ambition is linked with the United Nations' sustainable development goals that IKEA's whole product range would be fully circular by 2030.

Lars concluded by encouraging property developers and other companies to make the world greener by establishing sustainability as the core of business competence and utilising it as a driver for growth, profitability, and efficiency.

He remarked: "Sustainability should be affordable; it should be accessible. Sustainability is nothing you achieve on your own, you do it together with others so we need to partner up here, work towards common goals. Sustainability can be an engine of growth and profitability. Compatibility is also something that's going to matter going forth for the long-term survival of your business." ■

"Our internal goal is to draw down 10 gigatons of carbon or 10 billion tons of CO^2 by 2050, which means planting more than a million hectares of bamboo."

– Troy Carter
Co-founder, Rizome
Winner, PropertyGuru
Tech Innovation Award 2020

Rizome co-founder Troy Carter at the PropertyGuru Asia Real Estate Summit: Virtual Edition 2020

Bamboo, a viable construction material for a sustainable future

Troy Carter of Rizome, winner of the 2020 Tech Innovation Award at the PropertyGuru Asia Real Estate Summit, shares his team's climate-positive alternative to steel and concrete, both environmentally harmful materials

By Ruechupa Jiratanasophin

We currently live in a digital era with cities growing at rapid speeds, particularly in low-income countries like Asia and Africa. According to the Overseas Development Institute, two-thirds of the predicted world population or about 6.5 billion people will reside in urban centres by 2050.

It is widely accepted, without doubt, that urbanisation has changed and lifted living standards of many residents by producing more jobs, higher per capita incomes, innovation opportunities, and more.

However, urban living, especially growing at a high-speed, comes with consequences to the environment and the world that we inhabit.

As much as we love urbanisation and the comfort that comes with it, our world is suffering from that same process that is making our lives easier and more convenient.

The reality of urban living

As reported by World Wildlife Fund, forests cover 31 percent of our planet's land, purifying air and water, providing people with jobs, and most importantly, a home to most of the world's biodiversity.

But forest degradation and deforestation from agriculture, illegal logging, and construction are jeopardising these benefits.

Consequently, we are living in a world with reduced biodiversity, increased greenhouse gas emissions, disrupted water cycles, increased soil erosions, and more.

The rate of construction across the globe would eventually lead to an ecological disaster, with concrete and steel producing 17 percent of global CO^2 emissions and wood harvested unsustainably all around the world causing further deforestation.

Data from ResearchGate indicate that countries with the highest deforestation rates in the world include Brazil, Indonesia, the Philippines, and those in Sub-Saharan Africa. All these nations have fast growing populations and cities, meaning that more buildings will be constructed out of concrete and steel unless there is a viable construction material alternative.

It's not too late

What if there was a viable alternative that could be the answer we were looking for?

To many people, the first thing that pops into their mind when they hear bamboo is pandas. This plant is well-known to be eaten by one of the world's cutest, fuzziest animals. But little did we know that bamboo is hypothesised to be one of the only viable construction materials that can grow in a climate-positive, built-in environment.

Troy Carter, the co-founder and chief strategy officer at Rizome, shared his company's ambition in pioneering the use of engineered bamboo lumber as a climate-positive alternative to wood, steel, and concrete at the PropertyGuru Asia Real Estate Summit 2020.

Bamboo is not only the fastest growing plant on land, it is also the fastest carbon sequestration technology on earth. "It sequesters carbon dioxide from the atmosphere, puts it into biomass, into soil, and we harvest it and put it into the built-in environment," explained Troy.

Bamboo is incredibly regenerative and consumes 12 times less land than wood, which means that the same amount of building material can be harvested on less than 10 percent of the land, reducing the level of trade-off between building more and reserving native forest.

The plant is also 2.5 times the strength and weight compared to steel, making it an incredible alternative. On top of that, bamboo is fire resistant. In the past, large skyscrapers have never been built with wood for this very reason. Bamboo is the only Class-A fire rating of any biological product out there, so with this material, developers would be able to design huge, exposed beams that won't burn.

Engineering our future

Rizome is currently most active in the Philippines and the lumber is nearly all exported to the US and production has been growing significantly. In a couple of years, the company expects to be shipping globally, while also planting forests all around equatorial regions.

In producing engineered bamboo lumber, Rizome will first source these from local farmers who supply large poles of bamboo. Following is the "process" (split, plane, treat, and dry slats), which turns the poles into stable and long dimensions. The bamboo is then glued together to form any type of configuration.

Price is one of the thresholds that bamboo must overcome in order to be globally relevant. Most buildings are built on the fastest, cheaper, and highest quality materials.

"We anticipate bamboo to reach price parity with wood in 2021. For most structural applications, it's already cheaper for hard wood replacements like maple or oak, and it looks gorgeous for wall panelling, windows, etc.," said Troy.

Rizome is currently in their pilot phase, building their third factory in the Philippines. Bamboo has been an academic material so far, and for the first time in history, the company is turning it into a commodity product.

More designers and engineers are going to discover ways to build buildings that take advantage of the sophisticated mechanical characteristics of bamboo.

Rizome's carbon sequestration goals

Bamboo hasn't yet been developed into a sophisticated supply chain unlike wood as it mostly grows in equatorial regions. In order to develop a rigorous supply chain, an abundance of bamboo needs to be planted, including advanced manufacturing capacity and the creation of sales channels.

Rizome is on a mission to draw down CO^2 from the atmosphere, as we are experiencing a climate crisis. Plants are the best technology humans have in absorbing CO^2, despite all the new technological advancements that have been developed.

Troy shared that their internal goal is "to draw down 10 gigatons of carbon or 10 billion tons of CO^2 by 2050, which means planting more than a million hectares."

In order to achieve this goal, countries undergoing high rates of deforestation will need to come forth and restore local ecology.

Non-invasive species of bamboo are incredibly easy to plant as it's a robust plant that will remain in one area and brings about great ecological benefits such as soil erosion control, nutrient regeneration, and CO^2 absorption.

Most importantly, bamboo serves as an economic interest for local people. Other wood forests won't generate revenue for local people for 40 to 50 years, but with bamboo, residents will quickly see a turn on their land, preventing them from cutting land for agricultural use.

Looking into the future

As of 2020, there still isn't a sustainability initiative that accurately evaluates whether bamboo is sustainable so Rizome has been using internal verification to analyse the plant.

Despite how sustainable the material is, price and scaling are still the biggest hurdles to overcome, and it will take a few years for bamboo to be widely available for use.

Collocating plantation and shipping is a method for access to this new alternative, but at the end of the day, countries will need to be able to produce their own engineered bamboo lumber.

Ways to approach carbon has changed notably over the years. We see more and more companies like Amazon and Microsoft leading the way with carbon offsetting, but such initiatives aren't physically removing CO^2 from the atmosphere.

Troy believes that the most holistic way in addressing climate change is using the available nature-based carbon removals that also have a useful end-product.

There are numerous steps that the property and construction sectors can do to fight climate change.

"We can reduce at least 90 percent of building operational and energy costs by doing better installation and renewable energy," he said.

However, that still leaves about half of the energy in a building unaccounted for, indicating the need to change the building materials we're using.

"Building with wood is an awesome technology. It's approximately carbon neutral, but more recent data shows that forestry is actually not as sustainable as we may want it to be. It basically has a long-term detrimental impact to forest health and growth rates.

What we suggest instead is using bamboo where you can cut a third of clump every year, so it's essentially a very efficient machine for taking CO^2 from the atmosphere, putting it into a plant, and the plant turns into a building material,"he concluded. ■

Prof. Jason Pomeroy and Begoña Lucena at the PropertyGuru Asia Real Estate Summit: Virtual Edition 2020

Talking carbon zero goals with Prof. Jason Pomeroy

With his experiences in designing energy-efficient homes in Malaysia and Singapore, Jason Pomeroy shares his thoughts on sustainability and carbon negative design

Condensed by PropertyGuru editors; based on Prof. Jason Pomeroy and Begoña Lucena's interview

The idea of 'carbon zero' applies to developments that use renewable energy sources to generate energy for the building's operations so that the net amount of energy needed equals the amount generated on site.

Prof. Jason Pomeroy, founding principal of Pomeroy Studio and Pomeroy Academy, has pioneered 'B House', a carbon negative home in Singapore that has won accolades in sustainability and is renowned for promoting carbon wellbeing of the environment, and the wellness of its inhabitants.

In this conversation, he shares how carbon negative designs can be spread across Asia Pacific and how sustainability fits into our daily lives.

Begoña: **In 2016, you surprised many in Singapore with the design of the B House, the first carbon negative house in the country. A similar project came to live in Malaysia afterwards. How can these award-winning design practices be replicated across the region? And is carbon negative design a myth?**

Jason: I think the biggest challenge is when people look at a carbon negative building and they basically think, "Well, hold on a second, that's going to cost more than an average building isn't it," but not really.

The gauntlet that was thrown down by our clients was, "I like the idea of the house, but I want you to design me the B House in Singapore and I want it for the same cost as an average home in Singapore" – and that was the perfect challenge. I thought about how we can enhance the green agenda, how we can demonstrate to the public that sustainability does not mean costly designs, but economic designs, and we're able to do so.

Ultimately, driving down energy consumption, water consumption, and the running cost of the building, as well as using locally sourced materials and solar on the roof that would generate more energy than the house can consume, was what gave us the accolades that B House won.

We then thought that we can't stop here. We need to further this line of progression and development. How can we do this for a SGD60,000 (USD44,000) home?

We wanted to try and challenge the affordable market. How do people who can't afford a car, or to have the air conditioning blasting out all day long, still enjoy a greener lifestyle?

At the end of the day, if you are having difficulties with your energy and water bill and you can't afford a car, you need to be living a very sustainable life. Thus, we created this house called 'Optimma', which was the starting point for zero carbon community where the houses were approximately SGD60,000 and you also managed to have a car sharing scheme. There were solar fields that would generate enough energy to offset the demand of the individual families using the properties.

The story goes on. From the Philippines, we then applied the same in Sweden. We wanted to ensure that people got the message that sustainable design is economic design, and it is good for the planet to do so. So, carbon negative design is not a myth. Definitely not.

Having a sustainable home is one thing, but most people still believe that living sustainably can be difficult. Can we all afford to be sustainable?

Sometimes, some of the most obvious signs of sustainability are glaring at you. For instance, when I was filming in India, I saw wonderful examples of sustainability. These parents were removing the dry cotton from a Johnson's diaper. The diaper was wet, but they opened the diaper to salvage the dry cotton to be able to reuse.

Ultimately, it's a hand to mouth existence, and they had to go through these measures to be able to sustain their everyday lives. It's unfortunate that some of the most impoverished places in the world are forced into thinking very carefully about reducing, reusing, and recycling whatever they have purely to survive. It's the privileged, developed economies that we see the bells and whistles of green technology.

I think it's about trying to strike that balance and to bring that message to the people that there is a culture of sustainability that everybody should embrace. It means not leaving the light switched on or leaving sockets plucked in and seeing the loss of energy. That way, we optimise natural light light and ventilation, and simply embrace the great outdoors. These small measures can go far in trying to reduce one's carbon footprint.

Whatever opportunity there is, I would try and bring this to a broader audience. That might be the lecture theatre for my students at Cambridge, but it might also be the TV series I do. These small incremental measures in trying to spread the message is particularly important.

Asia is the fastest growing region in the world, the most populated, and with the biggest concentration of high-density cities. How can sustainability fit in the agenda of the governments, developers, and consumers?

I believe the way forward is to ensure that you don't leave it to one voice to push the green agenda. You can't rely on governments to say to the people, "this is how we're going to do it."

That is a top-down approach, which is quite forceful. At the same time, you can't rely on the people to say, "we want to do x, y, and z because we think it's in our interest."

You can't leave it on the private corporations to make a lot of money out of the green agenda. You can't leave it to the academics to keep all their visions on paper, reports, books, and essays. It's this ability to join these forces of influencers together.

You do need the people to voice what they want, but you also need academia to test some of those notions that the people offer. Once the academics can say that this works through the proof of concept and it's going to be of benefit to society, you can then find corporations to invest.

Finally, if the government can ratify that proof of concept, you then start to see a smart and sustainable approach to the built-in environment. Academia, civil society, state, and private corporations all working together to create a sustainable solution.

In the end, it all comes back to the point of needing a sustainable process to deliver the sustainable product.

When we talk about sustainability and climate change, it can sound too distant from the daily preoccupations of many people globally and in Asia where we live. However, this region has some of the world's most polluted cities. Do we really know the benefits that sustainable living could bring to the well-being of Asian population?

The UN-Habitat group are doing remarkable work in trying to propagate the green agenda. The United Nations Sustainable Development Goals – which total 17 principles, cover everything from smart communities and cities all the way through fighting poverty – is a good starting point.

I think it means that governments need to be cognisant of these seventeen principles, but not use it so straight-forward. It should not be there as a checklist, but as a prompt for thinking. I do think that the parameters that are set out in those goals are equally applicable to the developing economies as they are to the developed economies.

Carbon negative design is not a myth. As we live in a world facing climate crisis, sustainable living and designs are more important than ever to protect the world we live in, as well as our own wellbeing. Embracing the culture of sustainability is simple to do in everyday life, and with the small incremental measures that each person takes, a huge message and difference can be spread across the world.

As sustainable architecture becomes more prevalent in society, people will be able to overcome the notion that sustainability is a costly design, but rather an economic design for everyone to enjoy a greener lifestyle. ■

Liter of Light founder Illac Diaz at the PropertyGuru Asia Real Estate Summit: Virtual Edition 2020

Liter of Light: Illuminating developing nations one household at a time

A simple tech could serve as a beacon for households living in the dark

By Gynen Kyra Toriano

With all the luxury and comfort life has afforded us now, it is simply unimaginable to live without electricity, without light – a simple and basic human right. Yet, that has always been a grim reality for families living in unserved areas across the globe.

In 2016, a study by the World Health Organisation (WHO) revealed that one billion people worldwide have been living without electricity. As years went by, the numbers dropped to around 840 million, which is a noteworthy development.

However, WHO warns that without consistent and expedited efforts, 650 million will still have no access to energy by 2030.

Born out of necessity

In the Philippines, natural disasters are rampant and so is the frequent loss of access to energy. Year after year, the country is hit by damaging earthquakes, volcanic eruptions, and roughly 20 typhoons.

The biggest and scariest one yet occurred in 2013 in the form of Category 5 Typhoon Haiyan, when four million houses were ravaged and over 10,000 people lost their lives.

During a humanitarian mission to help devastated areas of Haiyan, Illac Diaz, founder of the Liter of Light Foundation, witnessed first-hand the poor quality of life of the residents there after the catastrophe.

"When I went there, I saw that thousands of people had kerosene lamps in bottles, with a wick made out of used cloth.

And there were children that were getting burned," he recalled as he shared the beginnings of his foundation at the first virtual edition of the annual PropertyGuru Asia Real Estate Summit in December 2020.

"There were a lot of areas where it needed mobile charging systems. So really, there's this scarcity of carbon-based fuels and light."

He also noticed that the donated food and money brought by the women to their aid camps ended up getting robbed.

"And that's when we realised that light could really be this life-changing factor."

But he found out that it wasn't an easy feat.

Breaking barriers

The largest power plants in the area were on the coast and these were damaged by 20-foot waves when the storm surge came in, which meant that the facilities were decommissioned for over a year.

The only option left was to find a source for sustainable energy, but this also proved to be a challenge.

Importing patented lights from China and India was expensive, draining 60 percent of their humanitarian funds. Besides, it would also take five months to reach the Philippines. They didn't have the time nor resources to spare.

"We needed solutions now," Illac said.

"We really wanted a way that we could use the power of the people, the power of them learning how to build, but with local technologies to solve this widescale problem of lack of energy," he said.

The Eureka moment

At the time of his Haiyan trip, Illac discovered that major solar manufacturers also happened to be in the area and were teaching locals to recreate products. Illac and his team decided to partner with them, and through in-depth planning and deliberation, they came up with a simple solution that could be replicated by the local community using resources within their reach.

"Instead of raising large amounts of funds for large complex systems, we could use the power of the people to make simple items, but replicated with many hands and at large scale volume," he explained.

"And so, Liter of Light is basically that. It's a solar light, built with a screwdriver where you can basically put in simple radio parts available in the country, but at the same time, also something that is available around the equator."

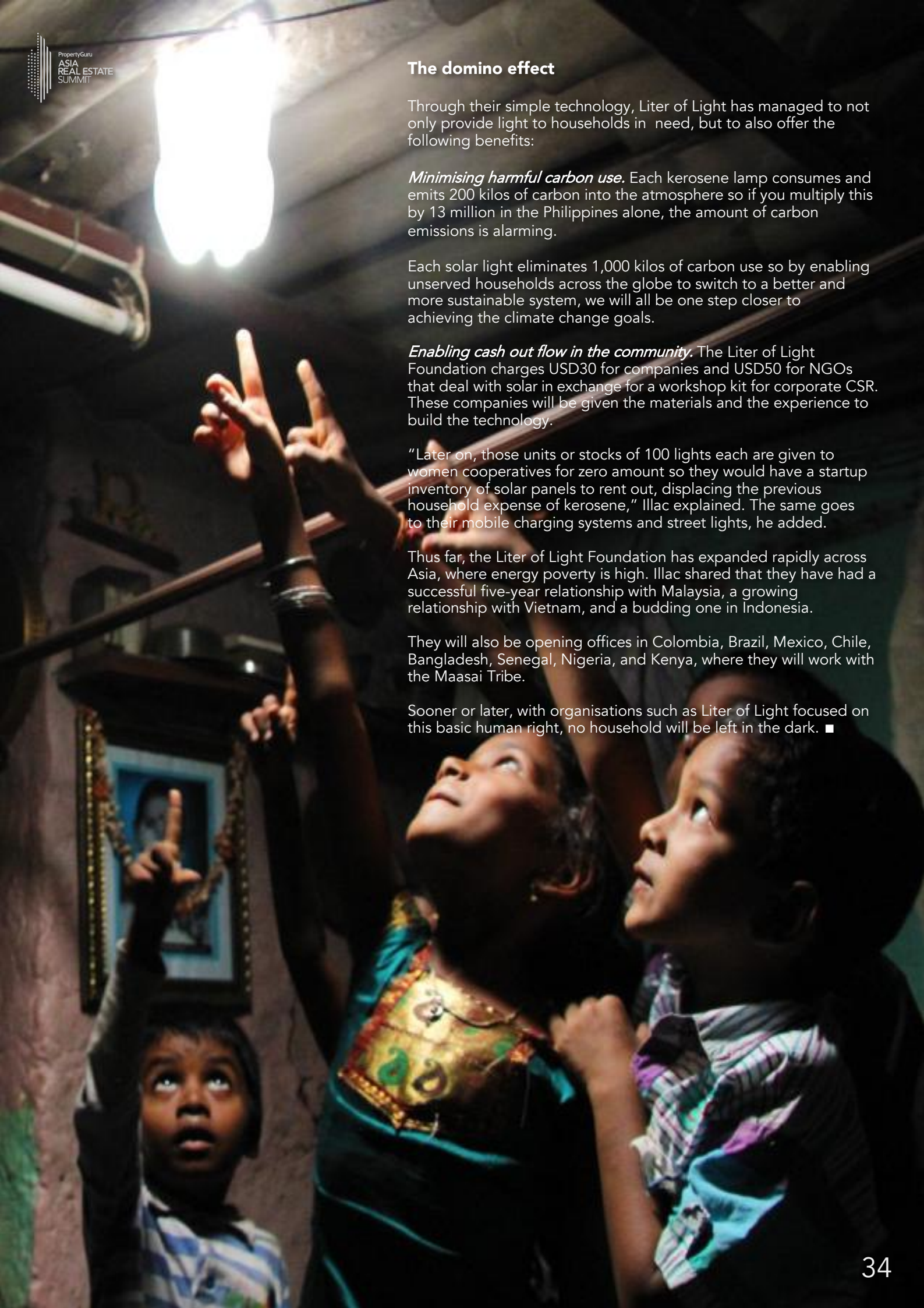
Paying it forward

The Liter of Light process works by introducing the community to the materials required and where they can source it. They will then teach them how to make the device using simple technology themselves and repair it in case it breaks.

"This technology, we found out, would also be appropriate for cities around the Philippines that have radio shops and electronic shops to be able to replicate it," Illac shared.

Eventually, the foundation has armed the communities, mostly women cooperatives, with the knowledge to build portable lamps, mobile charging systems, and streetlamps.

Even without Illac's team present, the locals can replicate the Liter of Light technology and are able to pass on said knowledge and skills to other villages in need. "And that replicability, we believe, is the purest form of charity."



The domino effect

Through their simple technology, Liter of Light has managed to not only provide light to households in need, but to also offer the following benefits:

Minimising harmful carbon use. Each kerosene lamp consumes and emits 200 kilos of carbon into the atmosphere so if you multiply this by 13 million in the Philippines alone, the amount of carbon emissions is alarming.

Each solar light eliminates 1,000 kilos of carbon use so by enabling unserved households across the globe to switch to a better and more sustainable system, we will all be one step closer to achieving the climate change goals.

Enabling cash out flow in the community. The Liter of Light Foundation charges USD30 for companies and USD50 for NGOs that deal with solar in exchange for a workshop kit for corporate CSR. These companies will be given the materials and the experience to build the technology.

"Later on, those units or stocks of 100 lights each are given to women cooperatives for zero amount so they would have a startup inventory of solar panels to rent out, displacing the previous household expense of kerosene," Illac explained. The same goes to their mobile charging systems and street lights, he added.

Thus far, the Liter of Light Foundation has expanded rapidly across Asia, where energy poverty is high. Illac shared that they have had a successful five-year relationship with Malaysia, a growing relationship with Vietnam, and a budding one in Indonesia.

They will also be opening offices in Colombia, Brazil, Mexico, Chile, Bangladesh, Senegal, Nigeria, and Kenya, where they will work with the Maasai Tribe.

Sooner or later, with organisations such as Liter of Light focused on this basic human right, no household will be left in the dark. ■

Urgency of sustainability: Climate champions rouse real estate leaders to act responsibly

Our aim is to educate, innovate, and inspire everyone

By Stephen Oehme

The aim of the PropertyGuru Asia Real Estate Summit every year is to educate, innovate, and inspire. The breadth of knowledge and experience from our 2020 Summit speakers and panellists enabled our industry's overall status, achievements, and challenges to be explored – and the conversations will continue in 2021. Our real estate sector directly reflects the progress and realities across all four pillars of sustainability: environmental, human, social, and economic.

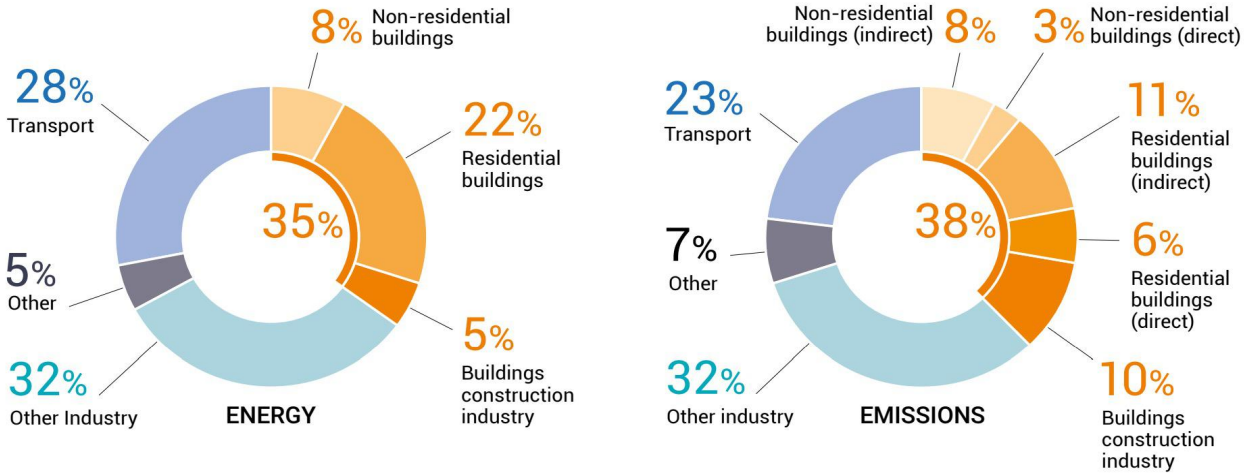
Making choices and taking actions

In the real estate sector, so much occurs rapidly and in real-time – from project initiation, design, construction, and beyond.

However, progress, in terms of sustainability, is extremely slow.

The choices our industry makes lead to outcomes that last for generations. The very significant impact of the real estate sector, in terms of the key indicators for energy and carbon emissions, are well established.

Global share of buildings and construction final energy and emissions, 2019



Data source: United Nations Environment Programme

Global perspectives: Environmental pledges and actions

When we look at news headlines around the world, the intentions are clear – businesses, governments, and the general population have resolved to cut carbon emissions dramatically.

This acknowledgement, and the pledges to reach carbon neutrality by 2050, are ubiquitous. The reality is that zero emissions by 2050 is not the pathway we are on – not even close.

2050 is less than 30 years away and it is being realised that we are not on the needed trajectory. In recognition of this, various carbon pledges have been renewed for the year 2030.

Across the globe, firms undertaking to reduce carbon emissions by 2030 are occurring. For example, the European Union committed -55 percent (1990 baseline), the United Kingdom pledged -68 percent (1990 baseline), the United States vowed -50 percent (but against a 2005 baseline), and so on.

The intention is that global emissions are to be cut by 50 percent (or greater) by 2030, but will that be achieved? The answer is no. With less than 10 years left until to the end of 2030, we would need to be seeing very significant reductions year-on-year. Globally, this is not happening.

When we read all the international news, it does appear that a lot might have already occurred. However, over recent decades, all are aware that many countries have been outsourcing significant parts of what was their own domestic manufacturing sector.

Shifting CO^2 emissions to another country is not necessarily progress and often, from a carbon perspective, it is regressive. The accounting for these factors is often obscure or sketchy. Further, what underlies a lot of the positive reporting about CO^2 emission reductions is related to using less coal for electricity production and using more gas instead. This was, at best, the low hanging carbon fruit.

Even so, CO^2 emissions globally continue to increase each and every decade.

Moreover, with the extraordinary disparities for CO^2 emissions per capita globally, a 50 percent more reduction for many countries will still result in those countries emitting much greater CO^2 emissions per capita than the world average.

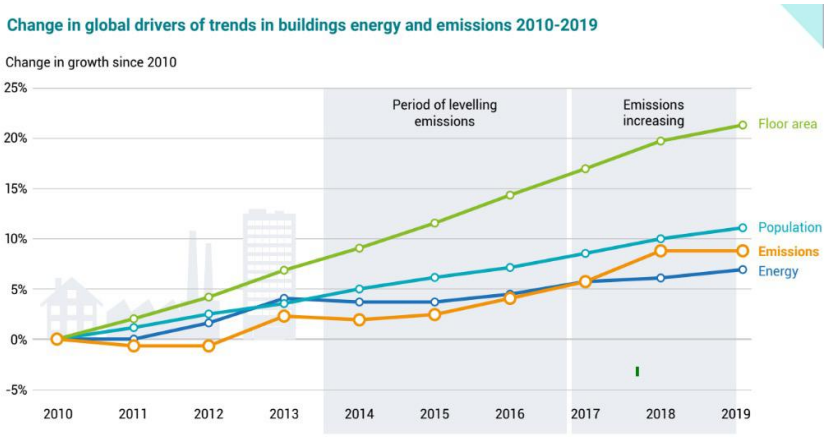
It is inequitable for a single parameter, and metric of carbon emissions against a baseline of 1990 levels (or for any other reference year), to be applied globally. This simplistic type of outlook ignores the countries who are striving for essential economic growth and associated liveability progress.

Every country cannot be reasonably expected to achieve the same carbon emission reductions, however, all countries can and should focus on their real estate sector to achieve maximum sustainability across all four pillars: environment, human, social, and economic.

The real estate sector

As discussed at the outset of this paper, the rates of new real estate are unstoppable, and it reflects so much that is positive and that is equitably essential for billions of people.

Globally, our real estate sector has done little in terms of overall carbon reductions and is not in line with any of the targets for the years of 2030 or 2050.

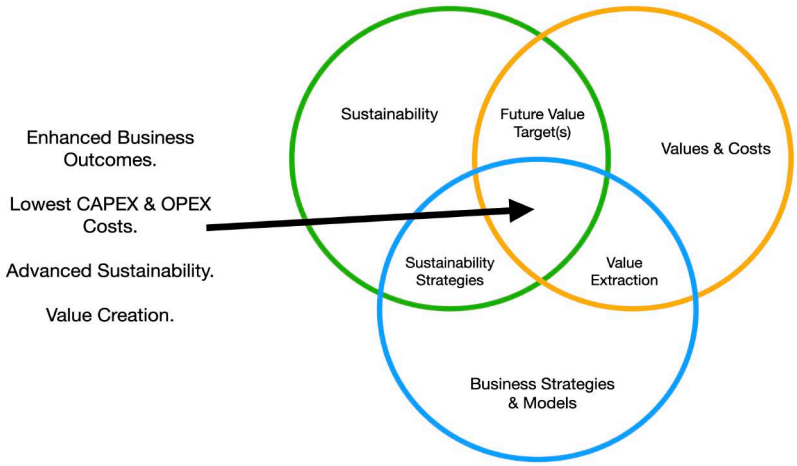


Source: IEA (2020b). All rights reserved. Adapted from "Energy Technology Perspectives 2020"

Can sustainability be considered a choice? ***Yes.*** Is it an imperative? ***Yes.*** What is stopping us? ***In reality, nothing***.

However, there are perceptions we must address:

- **Awareness.** As reflected by the carbon reduction pledges being made internationally, the awareness, recognition, and acceptance for sustainability actions is now largely behind us.
- **Intentions.** Calls for 'general' action are all around us – slowly focused and equitable actions are being formed in the corridors-of-power and boardrooms globally.
- **Support.** The role of governments, the impetus from civil society, and the drive of businesses needs to be focused on breaking out of business-as-usual to achieve all the benefits of sustainability – this is a 'current' frontier.
- **Costs**. The perceptions that pursuing sustainability – and going beyond business-as-usual processes – is to accept that additional costs is changing. The realisation is that enhanced value management methods can achieve significant upfront CAPEX savings and further OPEX savings year-on-year and advance sustainability in very positive and measurable ways.
- **Risks.** Our real estate sector is plagued with oversights, cost, time overruns, etc. Rigorous and holistic reviews can save 'planned' CAPEX and OPEX and, in addition, will reduce or eliminate risks resulting in overruns, unwarranted compromises, and un-planned financial costs.
- **Value.** The extraction of value is reflected in the above and is complimented by value creation.



Data source: Case study by the Institute of Management, Faculty of Business and Management, Brno University of Technology, Kolejni 2906/4, 61200 Brno, Czech Republic

Making the 'right choices' requires improved processes and strategies. Business-as-usual approaches will, more or less, end up with business-as-usual outcomes no matter how much the aspiration, or imperative, is to achieve improved outcomes.

There are challenges, however, the rewards of holistic reviews and the pursuit of improved sustainability are substantial. Having personally been involved with value management and improved sustainability on projects all over the world, there has never been a project that did not reduce upfront capital costs and reduce ongoing operational costs, while achieving improved sustainability.

Making the right choices also means navigating through greenwash. Greenwashing is a minefield where statements or representations are made, but are not correct.

Over the years, greenwashing has soured the experiences of governments, authorities, and developers when pursuing sustainability. Unfortunately, greenwashing is widely practised.

Often, the perpetrators of greenwash really believe in what they are promoting because they believe in their models, teams, etc. Expert reviews and evaluations can eliminate greenwash, too. Greater transparency is also required and occurring.

For instance, mandatory (or even voluntary) energy consumption disclosures for buildings are now in place in many parts of the world. This is appropriate and needed. So many highly profiled buildings that claimed world leading energy efficiency were found later to have unexceptional energy performance.

Achieving sustainability requires a lot more than just aspiration. However, aspiration is where it starts. This is reflected in all the pledges that are being made by governments and businesses globally for carbon emission reductions.

The world's sustainability aspirations are not only focused on carbon. More balanced views over the four pillars of sustainability are occurring. These reflect the recognition of different considerations and the inequities that exist globally.

For example, the 2015 United Nations Sustainable Development Goals (SDG's). These are very broad and compelling.

Furthermore, the national disparities in CO^2 emissions per capita highlight that countries, with the economic capacity to achieve substantial sustainability progress, are not doing enough at home; nor are they equitably supporting the required sustainability outcomes globally.

Simple parameters for sustainability, for example, carbon emission reductions, do not unite us; they lead to division. Unless this is recognised and addressed, we will not achieve the international sustainability outcomes required.

The real estate sector must collectively convert our sector's experiences and our capacity for progress to support global sustainability aspirations. The carbon emission pledges, the United Nation's Sustainability Development Goals et al. will not be achieved without our sector achieving transformation.

What can we learn from Covid-19?

We needed to be prepared. The world was not. We had enough information, strategic concepts, contingency plans, so much experience from the past (Spanish Flu 1918-1920, etc), and recent history (SARS 2002-2004, MERS, etc).

Nevertheless, we are now living through the inevitable solutions, mutations, mutations, and waves of the COVID-19 pandemic. The disconnect between science, our preparations, actions, and ability to achieve collective outcomes are reflected in the hard cold facts that are intensifying in real-time, before our eyes.

There are illuminating parallels to the pandemic and our current global sustainability status. Long before COVID-19 emerged, epidemiologists et al. have been raising concerns about the readiness of countries, individually and collectively, for a future viral outbreak.

For over 30 years, the scientific community have been warning us all about carbon emissions, climate change, and so much else linked to the worlds lack of sustainability. The world has been listening; however, globally, the actions and the outcomes are falling well short of our collective expectations. This must change.

The prognostic truths of the current COVID-19 pandemic will arise, with even greater devastation, if we do not significantly improve our actions to achieve greater sustainability.

Taking actions, achieving outcomes

Focusing on the value outcomes and cost benefits for sustainability would transform our world across all four pillars of sustainability – our aspirations need to be translated into effective and efficient strategies.

Major shifts away from business-as-usual is needed. The sustainability tools that will help quantify and recognise our progression are already substantially developed. We need to utilise all the international knowledge and experiences to collectively achieve equitable sustainability outcomes.

Sustainability is challenging. It is certainly required. It is progressively attainable in all respects.

Will the pledges for 2030 and 2050 carbon emission reductions make their mark? Will our aspirations for greater equity and sustainability be achieved? The answers are 'yes' if we step-up actions that achieve measurable outcomes – each and every year – starting immediately.

The question we asked for the summit in 2020 was, "What are you doing?"

Thank you to the thousands of people around the world who responded and participated. We are looking forward to continuing our support of the Asia Pacific real estate sector and sustainability at the next PropertyGuru Asia Real Estate Summit in December 2021 and beyond. ■

Contributors

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Stephen Oehme has been involved with some of the most challenging real estate projects in the world. He has specialised in value management for nearly 20 years and for 10 years was based in Dubai. He is now the managing director of Quantum Thailand and continues to consult regionally and globally. He has been involved in a diverse range of international projects including board member for the Burj Khalifa Dubai, and advocate and SEA Project Director for MASDAR Abu Dhabi, among the many.

James Dearsley
Co-Founder, Unissu

James is recognised as one of the leading thought leaders on the future of the real estate market. He has been voted the most influential person in proptech and been shortlisted by the Press Awards as 'best commentator on the property market'. His role as the co-founder of Unissu, the global leader of proptech data, information, and resources, means he has an unrivalled perspective on global proptech trends.

Angelo Tan
Country Lead for the Philippines, Climate Business, International Finance Corporation, World Bank Group

Angelo forges partnerships with real estate developers, investors, building professionals, academia, and public policy makers across the Philippines, towards advancing the adoption of Excellence in Design for Greater Efficiencies (EDGE) and Building Resilience Index (BRI) – online platforms, international standards, and rating systems designed to make green and resilient buildings much more accessible, inexpensive, and inclusive for emerging markets and developing economies.

Prof. Jason Pomeroy
Founding Principal, Pomeroy Studio and Pomeroy Academy

Prof. Jason Pomeroy is an award-winning architect, academic, author, and TV personality at the forefront of the sustainable built environment agenda. He is the Founding Principal of Singapore-based sustainable urbanism, architecture, design and research firm Pomeroy Studio. He is committed and passionate about all aspects of green design, and in particular zero energy development, modular construction, and vertical urban theory – three fields of research that underpin the design works of the studio.

Begoña Lucena
Director, Artemis Associates

With over 15 years of experience, Begoña is the Director of the Singapore office and oversees Artemis' operations across SE Asia and advises clients on strategic communications and reputation management. A former broadcast journalist in Spain, she worked for three years as Media Advisor for the Spain's State Secretary of the EU at the Foreign Ministry. Before moving to Asia, she worked in London for seven years as Media Advisor to Miriam Gonzalez, the wife of the former Deputy Prime Minister in the UK, Nick Clegg.

Jules Kay
Managing Director

Jules is Managing Director of PropertyGuru Group's industry leading business 'Asia Property Awards', which recognises and promotes excellence in development design and innovation. He has over two decades of regional leadership roles in sales and marketing, for a range of best-in-class real estate, hotel, hospitality and technology brands. One of the original team members of Asia Property Awards, Jules rejoined the business in 2019 in this leadership role, overseeing PropertyGuru Property Report magazine and the annual Asia Real Estate Summit.

Richard Allan Aquino
Head of Brand & Marketing Services

Allan leads the Brand & Marketing Services department of PropertyGuru Group's awards business, setting the strategic direction for regional communications, content, brand and product for Asia Property Awards, Asia Real Estate Summit, and Property Report magazine, where he started as associate editor in 2014. He is passionate about engaging content and creatives, technology, sustainability, inclusivity and diversity. Allan holds a Bachelor of Arts degree in European Languages from the University of the Philippines Diliman, and a Post-Baccalaureate Diploma in Magazine Journalism from De La Salle–College of Saint Benilde.

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Digital Content Manager

As Content Manager, Gynen focuses on all things digital, from writing articles and event production scripts, to recording monthly podcasts and supervising editorial video clips, to managing the PropertyGuru Property Report online and social media platforms. Her topics of interest include sustainability, gender equality, climate action, and real estate, in general. Gynen has a Bachelor of Science in Development Communications degree from West Visayas State University.

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Responsible for driving digital engagement and developing new media marketing campaigns, Marco owns the conceptualisation and development of PropertyGuru Asia Property Awards, Property Report, and Asia Real Estate Summit products, including the ARES webinar series. Fixated on consistency, he ensures that company creatives adhere to strict brand guidelines and standards. Marco holds a Bachelor of Arts in Social Sciences from Mahidol University International College.

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Media Relations & Marketing Services Manager

Teddy is a versatile all-rounder experienced in a variety of functional business areas. While focusing primarily on Digital Marketing, PR & Media Relations and Communications, he possesses a wide range of complementary skills to serve any team. He's currently overseeing media relations and partnerships across all markets in the PropertyGuru Asia Property Awards team.

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Irene assists the Digital Content Manager and the Product Lifecycle Marketing Manager by handling the daily online articles and special writing assignments and managing the Asia Property Awards and Asia Real Estate Summit social media accounts. She finished her Masters of International Business degree at the University of Melbourne in 2021.

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ABOUT PROPERTYGURU ASIA REAL ESTATE SUMMIT

PropertyGuru Asia Real Estate Summit is the premier gathering of the industry's finest minds, top-level business leaders and decision-makers. Designed to 'educate, innovate and inspire,' the Summit focuses on advancements in property technology, green building, sustainability, and innovation.

More than 500 registered delegates, comprising real estate and proptech experts, climate heroes, sustainability champions, trendsetters, and tech startup executives from around the region and beyond participate to refresh thinking, exchange ideas and connect with peers at the PropertyGuru Asia Real Estate Summit Virtual Edition, which features global keynotes, case studies, panel discussions, interactive booths and exhibition halls, and online networking.

The virtual summit is part of the exciting 'PropertyGuru Week' in December 2021, coinciding with the PropertyGuru Asia Property Awards Grand Final virtual red carpet and presentation ceremony, which is joined by the region's finest real estate developers and leaders, and watched by investors, agents and consumers via livestream.

For more information, please visit AsiaRealEstateSummit.com

ABOUT PROPETYGURU GROUP

PropertyGuru Group is Southeast Asia's leading property technology company and the preferred destination for 37 million property seekers to find their dream home, every month. PropertyGuru and its group companies empower property seekers with more than 2.8 million real estate listings, in-depth insights, and solutions that enable them to make confident property decisions across Singapore, Malaysia, Thailand, Indonesia, and Vietnam.

PropertyGuru.com.sg was launched in 2007and has helped to drive the Singapore property market online and has made property search transparent for the property seeker. Over the decade, the Group has grown into a high-growth technology company with a robust portfolio of leading property portals across its core markets; award-winning mobile apps; a high-quality developer sales enablement platform, FastKey; mortgage marketplace PropertyGuru Finance; and a host of other property offerings including Awards, events and publications across Asia.

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