

# GreenRE Bulletin

Issue 8 | July - December 2022



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Malaysia's First GreenRE Platinum Certified Government School

## SJK (C) CHEAH FAH

SUNWAY CITY ISKANDAR PUTERI



  
**SJK(C) CHEAH FAH**  
谢华国民型华文小学  
Dewan Tan Sri Dato' Seri Dr. Jeffrey Cheah AO  
丹斯里拿督斯里谢富年博士礼堂

Featured Article:  
Getting to Net Positive Energy Buildings

Events:  
GRESB 2022 Regional Insights (Malaysia)

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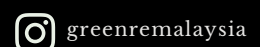
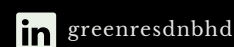
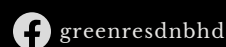
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# FOREWORD.

Dear Readers,

Welcome to the year-end edition of the GreenRE Bulletin 2022.

Globally, companies are setting ambitious climate goals and mapping pathways towards decarbonisation, with a growing emphasis on healthier indoor environmental spaces for working and living. ESG and other sustainability reporting frameworks are also changing the landscape of how we plan, finance, construct and operate buildings and townships. Developers and building owners in Malaysia will need to evolve to meet these heightened environmental requirements.

In 10 years of operation, GreenRE has made significant progress in enhancing collaboration with a multitude of key stakeholders in sustainability, ranging from financial institutions, professional bodies, NGOs, universities and government agencies, and now it's the nation's leading certification organisation.

GreenRE will be launching a Joint Certification Scheme with MyCrest (CREAM) which aims to accelerate adoption of green building certification in the country. We are heartened and encouraged by the progress made by ministries and local authorities towards their low carbon agenda, most recently, the Penang State Government has recognised GreenRE as a recognised green rating tool. We look forward to working closely together with the local governments to progress the green agenda in the coming year.

Bank Negara is spearheading the push for banks in Malaysia to adopt climate related criteria in their financing activities. Several large banks including Maybank, Public Bank, CIMB and UOB have approached GreenRE to assure their lending in the property sector.

Internationally, an MOU signed with the Singapore Green Building Council (SGBC), will enable a stronger relationship on joint activities including research & development and enhancement of GreenRE rating tools. In the UK, GreenRE are in the process of certifying the prestigious Battersea Power Station retail mall.

GreenRE's collaboration with Climate Governance Malaysia (CGM) & Climate Action Network (CAN) through a series of roundtables, has provided a platform for us to work together with a number of industry stakeholders to spur the sustainable built environment movement in Malaysia.

Lastly, we would like to thank members of GreenRE's Advisory Panel (GREAP), Technical Panel, Training Panel and a host of industry partners working together with us towards the green transformation of the built environment.

We hope that the content in this issue, inspires you to incorporate more sustainable innovation into your projects.

I wish you a prosperous and fruitful 2023 ahead.

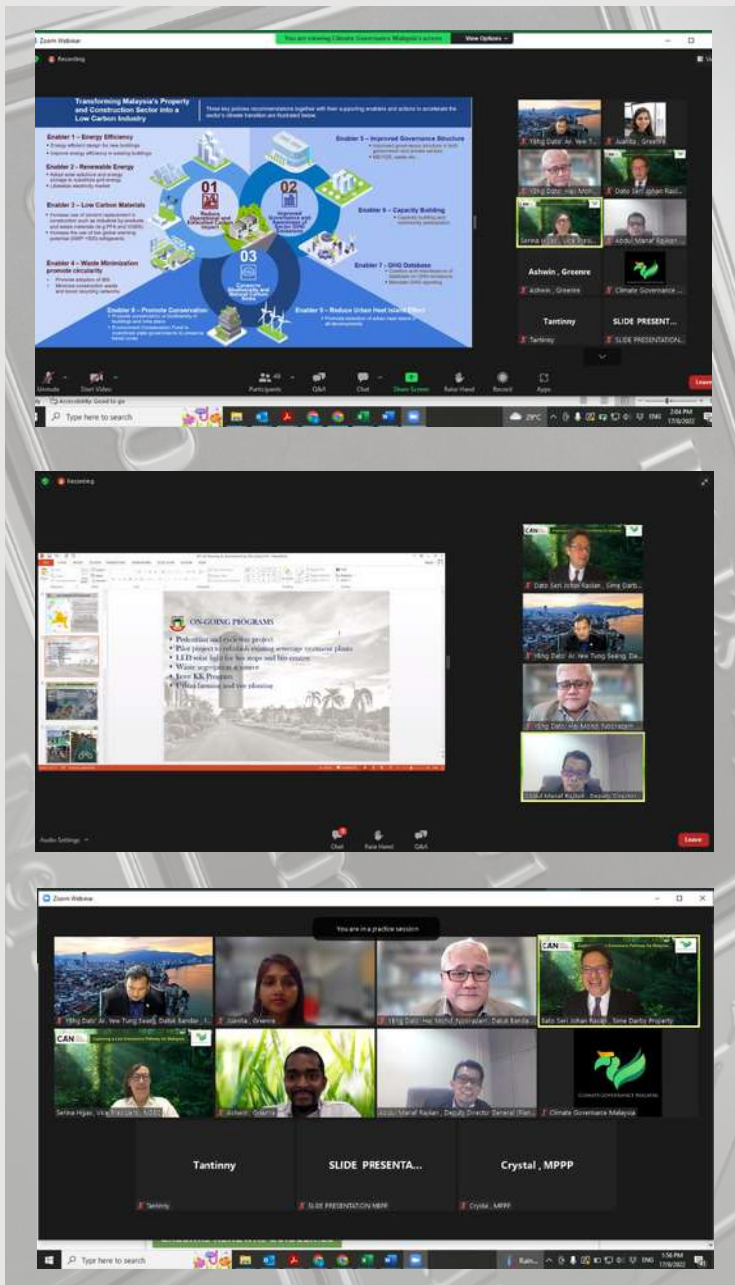
**Datuk Seri FD Iskandar**  
GreenRE Chairman



# EVENTS.

## CLIMATE GOVERNANCE MALAYSIA ROUNDTABLE SERIES 2022

Climate Governance Malaysia (CGM) in partnership with The CEO Action Network (CAN), GreenRE & REHDA Malaysia organised an ongoing series of roundtable discussions with local government and authorities to garner feedback on the viability of greening the economy. Two sessions were held in the second half of 2022 to deep dive into 2021's recommendations and identify more 'actionable' enablers for government sectors to adopt.



### Session 1

#### Towards a Low Carbon Property & Construction Sector-Cities Engagement Session (Online), 17 August 2022

Topics covered included National Plan Highlights and Updates on Low Carbon Cities Framework 2030 as well as Local Sustainable Plans & Specific Targets for 2020, 2025 & 2030.

Panellists:

- Ts. Shamsul Bahar Mohd Nor Chief Executive Officer Malaysian Green Technology and Climate Change Corporation
- Dato' Ar. Yew Tung Seang Mayor Penang Island City Council
- YB Dato' Haji Mohd. Noorazam Bin Dato' Haji Osman, Mayor, Majlis Bandaraya Johor Bahru
- YBhg Datuk Noorliza Mayor Kota Kinabalu City Hall
- Ar. Serina Hijjas, Vice President of Malaysia Green Building Council (Moderator)
- Dato Seri Johan Raslan, CEO Action Network (CAN) (Moderator)

### Session 2

#### Building with Biodiversity for the Build Environment (Online), 11 October 2022

In this session, the panellists covered best practices by their respective organisations for biodiversity preservation.

Panellist:

- Case Study & Strategies from MBSA by Tpr Aniza bt Osman, Director Planning Department, Majlis Bandaraya Shah Alam, MBSA
- Case Study & a Developers' Perspective by Ms Ong Jee Lian, Gamuda, Chief Sustainable Officer
- Singapore's Experience with Biodiversity Conservation by LAr Yvonne Tan, Director at DP Green Pte Ltd & Chair of Singapore Green Building Council Urban Greenery Committee
- Moderator: Ar Serina Hijjas, Vice President of Malaysia Green Building Council

The full report of the roundtable proceedings is available online here, <https://www.cgmalaysia.com/post/report-of-proceedings-for-the-2021-round-table-sessions?postId=27e9b887-4520-4ea4-ae2-3c14674ce35b>

Follow CGM here for future roundtable updates, <https://nze5omy.peatix.com/>

# EVENTS.

## GREENRE GREEN BUILDING AWARENESS TALK FOR MAJLIS PERBANDARAN SEBERANG PERAI (MBSP), 18 AUGUST 2022

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GreenRE's Executive Director, Ir Ashwin Thurairajah and GreenRE Technical Panel member Dr Joseph Kong, presented to MBSP's Planning and Engineering Department on the benefits and applications of green building certification, GreenRE Rating Tools and UBBL 38a.

GreenRE certification is now recognised as a certification tool for green building projects by the Penang State government and are eligible for the relevant tax incentives provided by the Penang State Government.



# EVENTS.

## GREENRE-UOB INTRODUCTION TO GREEN BUILDINGS SEMINAR, 4TH NOVEMBER 2022 @WISMA REHDA

To kick off the GreenRE Memorandum of Collaboration (MOC) with UOB, GreenRE conducted the first GreenRE-UOB Introduction to Green Buildings Seminar on 4th November 2022 at Wisma REHDA. The half day seminar attended by over 50 UOB participants, covered topics such as GreenRE certification tools and process, tax incentives in Malaysia, energy efficiency in buildings and the application of passive design towards a zero-carbon development.

Left: Welcome note by Sham Kai Leong, Senior Vice President, Head of Global Development & Strategic Alliances at United Overseas Bank (Malaysia) Bhd



Dr Joseph Kong, DME Solutions Sdn Bhd, presented on Energy Efficiency & OTTV



Gregers Reimann, IEN Consultants, presented on Green Innovative Features



# EVENTS.

## GRESB 2022 REGIONAL INSIGHTS (MALAYSIA) , 15 NOVEMBER 2022 @ WISMA REHDA

Article as published in The Edge, City & Country,:

<https://www.theedgemarkets.com/article/raise-reporting-standards-say-speakers-gresb-2022-regional-insights>

### Raise reporting standards, say speakers at GRESB 2022 Regional Insights

Higher and more adequate environmental, social and governance (ESG) and Task Force on Climate-related Financial Disclosures (TCFD) reporting standards are required from the Malaysian real estate industry due to increased interest from capital providers, said the speakers at the GRESB 2022 Regional Insights (Malaysia) event held on Nov 15 at Wisma Rehda. Previously known as the Global Real Estate Sustainability Benchmark, the organisation is now known as GRESB.

Organised by GRESB and co-hosted by its local partners Zerin Habitat Sdn Bhd and GreenRE Sdn Bhd, the event brought together participants from all over Malaysia to provide industry insights with a focus on participant and regulatory perspectives, looking at how industry players can benefit from the GRESB platform, the significance of ESG and TCFD, and ways to improve reporting and scores.

The panellists comprised GRESB business development director (Asia) Trey Archer, Zerin Habitat executive director Rohendran Chelliah, Sime Darby Property Bhd head of safety and sustainability Mohd Razif Mohd Yusoff, Bursa Malaysia chief regulatory officer Julian Hashim and Arup climate and sustainability leader (Southeast Asia) Devni Acharya.

#### GRESB reporting.

Archer kicked off the conference by introducing GRESB and its role in the real estate industry. “GRESB assesses and benchmarks ESG performance of real assets, as well as provides standardised and validated data to capital markets. We collect, validate, score and independently benchmark ESG data to provide business intelligence, engagement tools and regulatory reporting solutions.”



Trey Archer (GRESB Director, Asia)



According to him, companies and investors have to go through a systematic assessment comprising several stages, including validation that requires supporting data and documents, objective scoring that is done by GRESB, and peer benchmarking, where they will be able to compare their scores with those of their peers and competitors in the market.

GRESB is becoming a go-to ESG reporting platform in many countries, including Malaysia, as the real estate industry has a bad carbon footprint, said Archer, pointing out that the industry contributes more than 40% of global emissions. Of these emissions, about 70% are produced by building operations, while the remaining 30% comes from construction.



“Another reason is that many foreign investors are planning to make more investments in the Malaysian real estate market. Some of them go through us [by sharing] their interest to connect with particular [investment] managers, view their reports and assess potential investment opportunities,” he said.

On GRESB’s findings on regional participation in ESG reporting, Archer said there has been an increase from last year. “Globally, every region saw an increase in 2022 from 2021. There has been a 20% increase from last year, which had 1,520 entities in GRESB compared with 1,854 this year.

“Europe is still the leader. However, regions like Asia and North America are starting to catch up.

“Participation in Asia has grown by 21% with 15 new participating entities. Southeast Asia has increased to 40 entities in 2022 from 35 in 2021. This is more than a 14% increase.

“Malaysia has increased to five entities in 2022 from two last year. So, that’s a growth of 2.5 times, which positions it as one of the fastest-growing regions. It is important to note that Malaysia started from a lower base but I’m confident that as the years go on, we’ll be able to put the country on the board, competing with the likes of Hong Kong and Singapore.”

## Significance of ESG, TCFD

In a segment called ESG and TCFD: The Fundamentals, Devni highlighted the essentials of ESG and TCFD reporting as well as such trends in Malaysia.

“The way we do business is always evolving and mainly because the risk landscape around us is changing. Every year, the World Economic Forum asks leaders what they think are the prevailing risks they are facing as a business. In 2012, the majority of the risks revolved around economic and societal issues. Ten years later in 2022, the risks revolve more around environmental issues.”

Devni Acharya, Head of Arup’s Climate & Sustainability Services in Southeast Asia



In explaining the key factors of ESG, she said, “ESG is a term first coined by the financial industry and was embedded in the UN (United Nations) Principles for Responsible Investment in 2006. That was when ESG really started to take off as a concept.

“Financial institutions started to embed ESG policies in their lending, investment and underwriting practices. To ensure the standard of these policies, financial institutions sought out ESG criteria and ratings used by investors to gauge their companies. Non-financial companies use ESG to communicate performance to financial and other stakeholders.

Financial firms practise integration into corporate policies, investment strategy (thematic investment), investment appraisal, valuation and asset management for sustainable strategies. Their ESG reporting centres around communication of [strategy and] corporate and investment performance after implementing the strategy. Non-financial firms, on the other hand, plan for addressing risks and capturing opportunities across focus [areas and] sustainability topics identified through a materiality assessment, with ESG reporting that communicates [the strategy and] corporate performance after implementing the strategy.”



Ar Rohendran Chelliah  
(Executive Director of Zerin Habitat)

Devni shared a few ESG trends, including mandatory sustainability reporting plus TCFD, ESG-themed funds that focus on green and climate funding, the Shared Prosperity Vision 2030, which focuses on the economic roadmap published recently, and the Malaysian Code on Corporate Governance 2021.

She also elaborated on TCFD, which comprises governance, strategy, risk management and metrics, and target components. “Climate-related risks refer to the potential negative impacts of climate change on companies. For TCFD, the risks are divided into two categories – transition risk, which is related to the process of adjustment towards a low-carbon economy, and physical risk, which arises from the physical effects of climate change and environmental degradation. ESG and TCFD need embedding across the organization to address the interdependent challenges that the sustainability transition brings with it.”

Meanwhile, in his session, ESG as a Business Imperative, Rohendran explained how ESG policies can enable property developers and asset managers to attract tenants and capital providers, protect their assets against environmental vulnerability, attract diverse and socially conscious groups of employees, and give back to the communities in which they operate.

“ESG is not CSR and it is not something you do as a PR exercise. It is a business imperative. Increasingly, more companies, financial institutions, banks and investors are looking at companies beyond their financial projection. They are looking at their ESG policies as well. In that sense, ESG is a business imperative,” he said.

Rohendran pointed out that a few aspects of ESG are essential to businesses, including lower cost of funds, lower operating costs, attracting a large pool of investors, leading to UN Sustainable Development Goals (SDGs) and stakeholder capitalism, as well as attracting and retaining the best talent, plus customers.

“Recent reports and news articles show that companies can use different ESG tools to get different scores, which becomes a problem in identifying the actual standard. This is where Previn (Previndran Singhe, managing director of Zerin Habitat) and I discovered that GRESB answers a lot of these concerns because it is transparent, objective and allows you to compare yourself with your peers in the industry,” he said.

“Zerin Habitat, as a GRESB partner, works with Malaysian property developers to come up with customised solutions based on the company’s unique priorities, challenges and business operations to achieve a high level of compliance with the GRESB Real Estate Scoring & Benchmarking. Participating in GRESB and benchmarking results will allow property developers to attract institutional investors and secure financial facilities with more attractive terms.”

In clarifying why GRESB is a suitable platform for companies and investors alike, Rohendran pointed to the platform’s alignment with worldwide ESG standards, which takes into account the management, performance and development components of a company.

GRESB also incorporates the seven principles of TCFD’s effective disclosures, including presenting relevant information that is specific and complete; balanced and understandable; consistent; comparable with other companies in a sector, industry or portfolio; reliable, verifiable and objective; and should be provided on a timely basis.

Providing his comments separately, Previndran said both GRESB and TCFD are important. “GRESB is important for financial institutions and investors, while TCFD is important for regulators. The good thing is that GRESB and TCFD are strongly aligned and we advise companies to do both as it does not involve double resources or data but instead integrate with each other.”

Representing Bursa Malaysia, Julian spoke on the institution’s Enhanced Sustainability Reporting Framework. “Bursa’s framework is inherently flexible where public-listed companies (PLCs) conduct their own materiality assessment to identify and prioritise relevant sustainability matters. They then adopt practices and disclosures that are tailored to their respective circumstances. Since 2015, we have observed significant improvements in PLCs’ sustainability-related practices as well as disclosures.



Julian Hashim, the Chief Regulatory Officer for Bursa Malaysia

“However, we are lacking in some parts, such as improving comparability to facilitate benchmarking and decision-making, observing gaps when it comes to availability and quality of certain aspects of the disclosure, as well as the need to further enhance the sophistication of the practices and disclosures for critical themes such as climate change and human rights. In response, Bursa is undertaking a comprehensive review of the framework to enhance availability, quality and comparability of sustainability disclosures, and to satisfy the informational needs of PLCs’ key stakeholders.”

He added that external stakeholders assessed the company’s ESG fundamental practices via disclosures that are aligned to frameworks such as the UN’s Universal Declaration of Human Rights, SDGs, Bursa Malaysia Sustainability Framework, TCFD, Taskforce on Nature-related Financial Disclosures (TNFD) and Morgan Stanley Capital International (MSCI) ESG ratings.

“We do disclose our ESG practices and we take it seriously. What we do in our day-to-day ESG practice is where I found the disclosure helping me as a practitioner to guide the company towards better sustainability policies. We have taken the position that we want to be seen as a company that takes extra measures to be transparent about our ESG performance,” said Razif.

This has allowed Sime Darby to receive an S&P Global Rating of 57 points, he said, adding that the company will strive to develop more effective policies and improve its reporting standards in the future.

The revised framework will have enhanced disclosure requirements starting from 2023.

Sime Darby’s Razif took the stage to share the company’s ESG disclosure. “We faced a lot of trials and tribulations, trial and error, with efforts made to perfect policies, as well as a few light bulb moments for the team. In line with Sime Darby’s purpose, to be a value multiplier for people, businesses, economies and the planet, we believe it is more important than ever to have effective ESG policies.

“Within ‘environment’, we look at the decarbonising of our operation and embodied carbon as well as nature-based solutions like planting trees. For ‘social’, we have a few key aspects that we focus on, including our staff’s health and safety, foreign workers, our township communities and those in the periphery of our townships. In terms of ‘governance’, we have materiality assessment and disclosure, among others.”



Mohd Razif Mohd Yusoff (Head, Safety & Sustainability of Sime Darby Property Berhad)

# EVENTS AT GLANCE.

## CAGAMAS'S DEVELOPING & FINANCING GREEN HOUSING IN ASIA CONFERENCE, 21ST SEPTEMBER 2022

GreenRE participated in the recent 'Panel Session on Developing Green Housing: Challenges & Opportunities' at Cagamas's 'Developing & Financing Green Housing in Asia' conference (DFGH) on 21 September 2022 at the Asian School of Business, Kuala Lumpur.

The panel, moderated by Mr. Karthik Iyer, Senior Capital Market Expert, ASEAN Catalytic Green Finance Facility, included speakers from Gamuda, Ms Wong Sheue Yann, National Housing Authority Thailand, Ms. Sukumaporn Jongpukdee, as well as GreenRE's Executive Director Ir. Ashwin Thurairajah.



Watch a recording of the panel session here: <https://www.youtube.com/watch?v=P9ZoaNynYUQ>

## THE INTERNATIONAL GREENTECH & ECO PRODUCTS EXHIBITION & CONFERENCE MALAYSIA (IGEM), 12-14 OCTOBER 2022 @ KLCC EXHIBITION CENTRE.



GreenRE was part of the IGEM 2022 Exhibition and Conference. The GreenRE booth had high traffic from visitors keen on learning more about green building certification and sustainable real estate. GreenRE certification and create awareness.

LEFT: GreenRE Assessor, Ts Intan Mastor, presented on 'Green Buildings and Indoor Air Quality Post Covid-19', at the IGEM Pocket talks.

# BRITISH MALAYSIAN CHAMBER OF COMMERCE'S (BMCC) WEBINAR ON UK SMART BUILDING & RENEWABLE ENERGY SOLUTIONS (ONLINE), 17 OCTOBER 2022

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British Malaysian Chamber of Commerce (BMCC) organised a webinar on UK Smart Building & Renewable Energy Solutions, in Conjunction with Malaysia Climate Action Week 2022.

The webinar covered areas such as wind off grid solutions, master planning smart cities and smart energy building management. GreenRE's Executive Director, Ir Ashwin Thurairajah moderated the session.

Speakers included Stuart James Sales Director Marlec Engineering Co Ltd, Diba Salam, Founder & Creative Director, StudioDS and Robert Easson Founder & CEO Easson Energy.

If you missed the webinar, feel free to watch the recording here: <https://youtu.be/ckN62oYDotY>



# GREENRE @ REHDA SELANGOR'S HOUSING CONVENTION 2022, SHAH ALAM, 20 OCTOBER 2022

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YAB Dato' Seri Amirudin b. Shari, Dato' Menteri Besar Selangor visited the GreenRE booth at REHDA Selangor's Housing Convention 2022 at the Shah Alam Convention Centre.

# GREENRE ON BFM'S PROPERTY SHOW, 16 NOVEMBER 2022

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GreenRE's Directors, Ms Teo Chui Ping and Ir Ashwin Thurairajah was interviewed by BFM's Philip See during the BFM Property Show to discuss the opportunities and challenges of greening buildings in Malaysia.

*Listen to the Podcast Here*



# ASIAN DEVELOPMENT BANK (ADB) SEMINAR ON SETTING THE VISION FOR SUSTAINABLE AND AFFORDABLE HOUSING IN BANGLADESH, 13 DECEMBER 2022@ DHAKA

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GreenRE's Executive Director, Ir Ashwin Thurairajah presented virtually at the recent Asian Development Bank (ADB) Seminar on Setting the Vision for Sustainable and Affordable Housing in Bangladesh, 13 December 2022@ Dhaka.

# FEATURED PROJECT.

**MALAYSIA'S FIRST GREENRE PLATINUM CERTIFIED GOVERNMENT SCHOOL**

## SJK (C) CHEAH FAH

by Sunway City Iskandar Puteri

SJK (C) Cheah Fah opened its gates in Sunway City Iskandar Puteri (SCIP) as the first-ever Chinese national-type primary school within the sustainable integrated township of Sunway City Iskandar Puteri (SCIP), Johor. SJK (C) Cheah Fah is named after Tan Sri Dato' Seri Dr. Jeffrey Cheah's late father and is Malaysia's first GreenRE Platinum Certified Government School.

With the belief that education is the best way to combat poverty, Sunway has donated RM18 million to the construction of SJK (C) Cheah Fah. This has benefited the families residing within and around the township, and has provided children access to quality education - leading to a sustainable future.

The school spans 5 acres of land and comprises of two academic blocks, one administration block, one canteen block, a multi-purpose hall and a library. Within the compound are 24 classrooms with amenities and facilities matching that of international school standards. They include: science labs, computer lab, art room, life skills workshop, football field and indoor badminton and basketball courts.

### GREEN TO THE WIRES

In line with Sunway's full embrace of the United Nation's 17 Sustainable Development Goals, the school is designed with eco-friendly certified construction materials for improved energy efficiency, water efficiency, indoor environmental quality, and carbon offset.

Reflecting Sunway's sustainable commitment to developing green-certified buildings; SJK (C) Cheah Fah is designed with sustainable features that reduce the overall impact of the built environment on its surroundings:





## KEEPING IT COOL - ENERGY EFFICIENCY

SJK (C) Cheah Fah deliberately has no direct east or west facing windows as part of its energy-efficient passive design. A low window-to-wall (WWR) ratio of 0.20 and the application of external shading devices to all facades creates a low Overall Thermal Transfer Value (OTTV) of 30 W/m<sup>2</sup> - less than the baseline of 50W/m<sup>2</sup>. The facility has also been tested using CFD modelling to ensure every square inch of the non-air conditioned areas enjoy good ventilation and indoor comfort.

On days the Malaysian heat is tough to beat, the school, at places in need of air-conditioning, such as the Multipurpose Hall, is designed with an effective VRV air-conditioning system, coupled with a 41.36kWp solar photovoltaic system - saving up to approximately 62% of energy.

## A LIGHT AFFAIR - ENERGY EFFICIENCY

The school enjoys plenty of natural light, naturally reducing the need for artificial lighting. When sunlight does not suffice, SJK (C) Cheah Fah is equipped with 100% LED lighting to reduce energy consumption.



## A FLUID APPROACH - WATER EFFICIENCY

To keep water wastage at a minimum, PUB, Singapore's National Water Agency has installed efficient and certified water fittings. Moreover, a 240L rainwater harvesting system was installed for landscape irrigation to further minimise potable water consumption.

## GREEN PRODUCTS - ECO-FRIENDLY CONSTRUCTION MATERIAL

From its structure to its finishing, SJK (C) Cheah Fah is designed to induce low environmental impact and is achieved by use of Singapore Environment Council Certified ACC Blocks, along with green certified waterproofing and ceiling materials. Additionally, the school's skim coat plastering is certified by the Singapore Green Building Council (SGBC).





Concrete usage index (CUI) indicates the amount of concrete required to construct a superstructure. SJK (C) Cheah Fah utilises only 0.26m<sup>3</sup>/m<sup>2</sup> of CUI, lower than GreenRE's baseline of 0.35m<sup>3</sup>/m<sup>2</sup>.

## JUST A BREEZE - INDOOR AIR POLLUTANT

To keep the air quality crisp, fresh, odourless and safe for students and teachers, a low Volatile Organic Compound (VOC) paint has been used for the internal wall finishing - creating a more conducive classroom environment.

## SECURITY & CONNECTIVITY

Sunway City Iskandar Puteri's integrated township provides the school with security, connectivity, a sense of community and of course quality education. As a Master Community Developer, SCIP has committed to journeying all the way with SJK(C) Cheah Fah.



## WASTE MANAGEMENT

A recycle bin center is located within the compound to encourage students to apply the 5Rs learnt in school, allowing students to immediately put into practice what they've been taught about responsible and sustainable living. 🌱

### PROJECT TEAM

Owner: Sunway Iskandar Sdn Bhd

Architect: SA Architect Sdn Bhd

C&S Consultant: Inception Consultant Sdn Bhd

M&E Consultant: Inception Sdn Bhd (GMT Sdn Bhd)/ G&P M&E Sdn Bhd

Quantity Surveyor: JQS International Sdn Bhd

Contractor: Laubros Holdings (M) Sdn Bhd

# TRAINING.

## GREENRE ACCREDITED PROFESSIONAL'S COURSE NO.29 (HYBRID)

The first hybrid GreenRE Accredited Professional's Course (GreenREAPC), post Covid-19, was held at Sunway Hotel Georgetown, Penang, from 20th - 22nd September 2022. The course was also available online via Zoom.

The three-day course aimed to familiarise professionals with green building best practices and enable them to optimise the design of active and passive components in building projects to facilitate GreenRE certification. GreenREAP's Course includes 3 days of lectures, a Multiple-Choice Question (MCQ) assessment and a group project.

The 22 participants that attended the course consisted of developers' project teams (ie. engineers, architects, facilities managers, project managers, etc.), green consultants, and also academicians. It is encouraging to note the increasing interest from the developers to attend green building courses. CPD points from Suruhanjaya Tenaga, Institute of Engineering, Malaysia (IEM), Lembaga Arkitek Malaysia (LAM), Lembaga Penilai dan Pentaksir Malaysia (LPPEH), and GreenRE were available for this session.

The next GreenREAP hybrid course will be held at Wisma REHDA, Petaling Jaya, 14th - 16th February 2023.



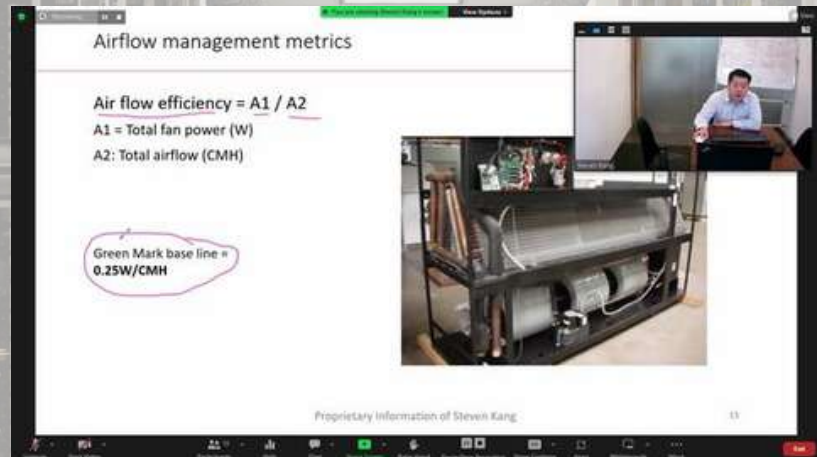
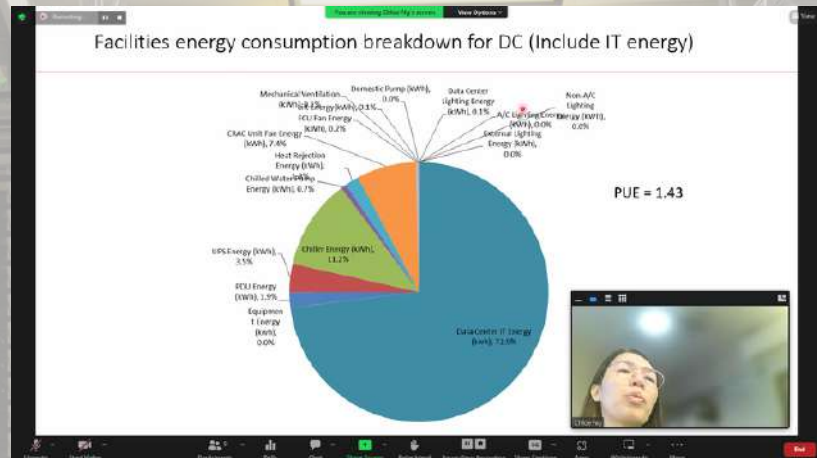
# TRAINING.

## GREENRE TECHNICAL SEMINAR 02-2022 (GREEN DATA CENTRES): ONLINE

The two-days online technical seminar provided an understanding on Green Data Centre standards, enabling participants to apply the best practices in chiller plants, computer room air-conditioning, lighting and uninterruptible power system design as well as optimisation at peak energy efficiency.

The trainers of the course were, Mr. Steven Kang (Director) and also Ms. Chloe Ng (Business Development Manager), from Measurement & Verification Pte Ltd, together with Mr. Lee Seng Wee, Director of i3 Solutions Group.

Topics covered during the seminar included Data Centre (DC) overview and trends, SS564, Chiller Plant M&V and controls, GM2013 for new & existing DC, DC electrical system design, and MCMC Technical Code. A total of 16 participants from green consultancy companies and universities attended the course.



| Loading             | 10%    | 20%    | 30%    | 33%    | 40%    | 50%    |
|---------------------|--------|--------|--------|--------|--------|--------|
| Losses (kw)         | 6.35   | 7.44   | 9.24   | 9.92   | 11.76  | 15.00  |
| Efficiency (1.0pf)  | 98.43% | 99.08% | 99.24% | 99.25% | 99.27% | 99.26% |
| Efficiency (0.85pf) | 98.16% | 98.92% | 99.10% | 99.12% | 99.14% | 99.13% |
| Efficiency (0.8pf)  | 98.05% | 98.85% | 99.05% | 99.07% | 99.09% | 99.07% |

| 60%    | 66%    | 70%    | 80%    | 90%    | 100%   |
|--------|--------|--------|--------|--------|--------|
| 18.96  | 21.68  | 23.64  | 29.04  | 35.16  | 42.00  |
| 99.22% | 99.19% | 99.16% | 99.10% | 99.03% | 98.96% |
| 99.08% | 99.04% | 99.02% | 98.94% | 98.86% | 98.78% |
| 99.02% | 98.98% | 98.96% | 98.88% | 98.79% | 98.70% |

Proprietary information of Steven Kang

# UPCOMING TRAININGS



## GREENRE ACCREDITED PROFESSIONAL'S COURSE No.30 (Petaling Jaya)

also available via online

### COURSE FEE

Member - Early Bird  
(before 15th Jan 2023)  
**RM1,050.00**

Non Member- Early Bird  
(before 15th Jan 2023)  
**RM1,200.00**

Member - Normal  
**RM1,150.00**

Non Member - Normal  
**RM1,300.00**

Member  
Group of 3 pax  
**RM3,250.00**

Non Member  
Group of 3 pax  
**RM3,700.00**

Member  
Group of 5 pax  
**RM5,450.00**

Non Member  
Group of 5 pax  
**RM6,200.00**

Basic Course  
(for GreenREAP only)  
**RM180.00**

MARK YOUR CALENDAR

**14-16 February 2023**

Wisma REHDA, Petaling Jaya

Assessment Date: 16th & 17th March 2023 (online)



### ABOUT THE EVENT

The GreenREAP's Course is a 3 days course geared to equip individuals with the knowledge and skills on green building best practices. This will enable them to optimize the design of active and passive components in building projects and thereby facilitate GreenRE certification.

CPD POINTS: GREENRE (15) | IEM, LAM, ST, LPPEH, MBOT (tbc)

- Member: REHDA/Government Sector/BEM/LAM/ST/MBOT/LPPEH/ACEM/RISM/SHARED/SHEDA/MBAM/MIP
- Physical course and online will be charged with the same course fees



SCAN TO REGISTER

For further information, email [training@greenre.org](mailto:training@greenre.org) / call 03-78032978

[f greenresdnbhd](#) [@ greenremalaysia](#) [in GreenRE Sdn Bhd](#) [www.greenre.org](#)

## Course Objectives

- To provide information and knowledge on the best practices of green building principles
- Understand and reduce life cycle cost of green buildings
- Legislative requirements on Environmental Sustainability for Buildings
- Provide an understanding on the interpretation of the GreenRE Tool Criteria, scores and certification process

## Assessment of GreenREAP's Course

- The examination measures knowledge on green buildings, GreenRE rating system and the certification process
- The examination is divided into 2 sections. Part 1 is multiple choice question (MCQ) test and Part 2 is group project. In keeping with our green and sustainable practices, course notes will be available in e-format

## GreenREAP Application

- Fully attended 18 hours of GreenREAP's Course
- Pass the assessment (MCQ and group project)
- A recognized Degree or Diploma in related disciplines (engineering, architecture, QS, environmental science etc.) approved by GreenRE Review Panel, in addition to at least 3 years working experiences for Degree holder or 5 years working experiences for Diploma holder
- GreenREAP's certification is valid for 2 years from issuance

## Renewal Requirements

- Compulsory attendance for GreenRE Refresher Course (at least once for each renewal application) or Basic Course of GreenREAP's Course (1st Day only)
- Accumulation of CPD points of 10 points per year (green building courses OR GreenRE project submission)

14 Feb. 2023

|                   |   |
|-------------------|---|
| 08.30am - 09.00am | <b>Registration &amp; Breakfast</b>                                   |
| 09.00am - 09.30am | Introduction to GreenRE and GreenREAP's Course (GreenRE)              |
| 09.30am - 10.00am | Introduction to GreenRE Assessment Process (GreenRE)                  |
| 10.00am - 12.00pm | Introduction to GreenRE Buildings & Township Rating Tools (GreenRE)   |
| 12.00pm - 01.00pm | Sustainable Construction & Green Products (Mr. S. Ramesh)             |
| 01.00pm - 02.00pm | <b>Lunch Break</b>  |
| 02.00pm - 03.00pm | Passive Design for Green Buildings & Township (Ar. Axxu Hoi Jung Wai) |
| 03.00pm - 04.00pm | OTTV & RETV (Ar. Dr. Joseph Kong)                                     |
| 04.00pm - 04.15pm | <b>Evening Tea Break</b>  |
| 04.15pm - 05.45pm | OTTV & RETV (Ar. Dr. Joseph Kong)                                     |

15 Feb. 2023

|                   |  |
|-------------------|--|
| 08.30am - 09.00am | <b>Registration &amp; Breakfast</b>  |
| 09.00am - 12.30pm | Air-Conditioning & Mechanical Ventilation System (ACMV) (Mr. Choong Chow Neng) |
| 12.30pm - 02.00pm | <b>Lunch Break</b>   |
| 02.00pm - 03.30pm | IEQ and Green Innovation Features (Mr. Gregers Reimann & Mr. Suwan Bonma)      |
| 03.30pm - 03.45pm | <b>Evening Tea Break</b>   |
| 03.45pm - 05.45pm | Artificial Lighting and Daylighting (Ar. Dr. Ratnakala Sithravel)              |

16 Feb. 2023

|                   |  |
|-------------------|--|
| 08.30am - 09.00am | <b>Registration &amp; Breakfast</b>  |
| 09.00am - 10.00am | Water Efficiency, Rainwater Harvesting and Green Plot Ratio (Ar. Clement Wong) |
| 10.00am - 12.00pm | Energy Modelling & Ventilation Simulation (Mr. Ken Po)                         |
| 12.00pm - 01.00pm | Stormwater Management (JPS)  |
| 01.00pm - 02.00pm | <b>Lunch Break</b>   |
| 02.00pm - 03.00pm | Solar Photovoltaic for Buildings & Township (Mr. Christophe Inglin)            |
| 03.00pm - 04.00pm | Green Tax Incentives (MIDA)  |
| 04.00pm - 04.15pm | <b>Evening Tea Break</b>   |
| 04.15pm - 05.00pm | Course Assessment Briefing (GreenRE)   |

**Notes:**

- The pro forma invoice will be sent once the registration has been submitted
- The registration is confirmed once the payment done. The invoice and receipt will be sent after the payment received
- GreenRE has the right to alter the schedule of the course in the best interest and is not responsible for cancellation due to unforeseen circumstances



# EFFICIENT CENTRAL AIR-CONDITIONING DESIGN AND MEASUREMENT & VERIFICATION SYSTEMS

GREENRE TECHNICAL SEMINAR

CPD: GreenRE (5) ST, BOVAEP & MBOT (TBC)

**MARCH**  
**16 - 17, 2023**

(1 HOUR MCQ EXAMINATION  
ON APRIL 6, 2023 ONLINE)

Course Access Only

**RM799** (GreenREAP/REHDA)

**RM1,099** (Non-Member)

12 hours access to lectures - Certificate of  
Attendance

REGISTER

SCAN TO



## SPEAKERS

Steven Kang  
Chloe Ng

Course Access + M&V Examination

**RM899** (GreenREAP/REHDA)

**RM1,199** (Non-Member)

12 hours access to lectures + Certificate of  
Attendance + Certificate of GreenRE  
Certified M&V Practitioner

[TRAINING@GREENRE.ORG](mailto:TRAINING@GREENRE.ORG)

03-7803 2978

[WWW.GREENRE.ORG](http://WWW.GREENRE.ORG)

[f](#) greenresdnbhd [@](#) greenremalaysia [in](#) GreenRE Sdn Bhd

## Course Description

The major criteria in GreenRE Tools are Energy Efficiency (Part1) contributes about 50% of the total scoring points. Credits are allocated for the various energy efficiency designs, practices, and features used.

GreenRE has introduced pre-requisites to air conditioning system design including installation requirement for the provision of a permanent major system for chiller plants.

Day

1

**9 am - 9.30 am** : Registration & Breakfast  
**9.30 am - 11.30 am** : Central Chilled Water Plants  
**11.30 am - 1.30 pm** : Chilled Water Airside Systems & Energy Efficient Water & Air Distributions Systems  
**3.30 pm - 5.30 pm** : Chiller Plant Performance Optimization

Day

2

**9 am - 9.30 am** : Registration & Breakfast  
**9.30 am - 11.30 am** : Airside Optimization and M&V of Chiller Plant Performance (AHRI 550)  
**11.30 am - 1.30 pm** : Airside Optimization and M&V Performance (SS591)  
**3.30 pm - 5.30 pm** : Recommended Good Practices for Instruments & Case Study

## Course Schedule

### NOTES:

- MULTIPLE CHOICE QUESTION (MCQ) EXAMINATION WILL BE HELD ON APRIL 6, 2023 (ONLINE). PARTICIPANTS WHO PASS THE EXAMINATION WILL OBTAIN THE GREENRE CERTIFIED M&V PRACTITIONER CERTIFICATION.
- GREENRE HAS THE RIGHT TO ALTER THE SCHEDULE OF THE COURSE IN THE BEST INTEREST AND IS NOT RESPONSIBLE FOR CANCELLATION DUE TO UNFORSEEN CIRCUMSTANCES.



# NEWS & ANNOUNCEMENTS.

## MOU SIGNING BETWEEN REHDA, GREENRE, REDAS & SGBC, 6 SEPTEMBER 2022, SINGAPORE.

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We are pleased to announce the Memorandum of Understanding (MOU) between Malaysia & Singapore Built Environment Organisations.

The four-party MOU between GreenRE Sdn Bhd, the Real Estate and Housing Developers' Association Malaysia (REHDA), the Real Estate Developers' Association of Singapore (REDAS) and the Singapore Green Building Council (SGBC) was inked in the witness of Singapore Minister for National Development Mr. Desmond Lee as well as CEO of the Singapore Building and Construction Authority (BCA) at the SGBC Pavilion during the start of International Built Environment Week 2022 (IBEW 2022) which took place 5-9 September at Sands & Expo Convention Centre Singapore.

The MOU will deepen collaboration between organisations from both sides of the Causeway and is anchored on information exchange, organising of joint learning, research and development activities, facilitating of Singapore-Malaysia business collaborations as well as promoting products certified by the Singapore Green Building Product (SGBP) certification scheme with GreenRE building certification for Malaysian developments.



REHDA Malaysia & GreenRE Delegations together with REDAS and SGBC

## MOU Signing Parties

1. Mr. Chia Ngiang Hong, REDAS President
2. Ar. Tang Kok Thye, SGBC President
3. Datuk Tong Nguen Khoong, REHDA President
4. Datuk Mustaza Mohamad, GreenRE Head, Management Committee

### Witnessed by:

1. Minister Desmond Lee, Minister for National Development & Minister-in-charge of Social Services Integration
2. Mr. Kelvin Wong, CEO BCA

## Malaysian Delegation (GreenRE and REHDA)

1. Datuk Tong Nguen Khoong - REHDA President and Managing Director, Bukit Kiara Properties
2. Datuk Mustaza Mohamad - GreenRE, Head of Management Committee and Group Managing Director, Fairview Development Sdn Bhd
3. Datuk Ng Seing Liong & Spouse - Senior Partner, S.L.NG & Associates and Managing Director, Kota Kelang Development
4. Dato' Rick Cheng - REHDA National Council Member and Managing Director, Encomas Sdn Bhd
5. Manager, Bandar Utama Development or Managing Director, Centro Properties Group
6. Ir. Ashwin Thurairajah - GreenRE, Executive Director



From L to R, First Row:

Mr. Chia Ngiang Hong (REDAS President), Ar. Tang Kok Thye (SGBC President), Datuk Tong Nguen Khoong (REHDA President), Datuk Muztaza Mohamad (GreenRE Head, Management Committee),

Second Row:

Minister Desmond Lee, Singapore's Minister for National Development & Minister-in-charge of Social Services Integration, Mr. Kelvin Wong, BCA CEO

# NEWS & ANNOUNCEMENTS.

## GREENRE-CREAM MOU ON JOINT CERTIFICATION, 30TH NOVEMBER 2022

In April 2021, GreenRE Sdn Bhd and the Construction Research Institute of Malaysia (CREAM) signed a Memorandum of Understanding (MOU) to synergise efforts towards promoting sustainable development in the property development and construction sector. Green Real Estate (GreenRE) was formed by REHDA in 2013 and are the leading private sector driven green building certification body in Malaysia. CREAM administer the Malaysian Carbon Reduction and Environment Sustainability Tool (MyCrest) which was developed by CIDB in 2016 and is mandatory for all new government building projects exceeding RM50 million.

GreenRE and MyCrest offer a prescriptive and performance-based approach to green building certification covering common major pillars including energy efficiency, water efficiency, construction, sustainable materials, indoor environment quality and carbon impact assessment. Both schemes cover the full life cycle of a building from design and construction through to operations, maintenance and end of life.



GreenRE's Datuk Muztaza Mohamad (GreenRE Head, Management Committee) together with Ts. Dr. Hj Mohd Khairolden Ghani, Manager CREAM

GreenRE and MyCrest are amongst several other local and internationally developed certification / rating schemes in Malaysia. Nonetheless, despite the availability of such schemes, as of 2022 less than 1% of the building stock in the country are green certified. To improve standardization, enhance collaboration between the public and private sector and increase the uptake of green buildings in Malaysia a technical task force was convened in March 2022 to formulate a joint certification framework between GreenRE and MyCrest. In July 2022, a 1st stage joint certification framework was approved pending implementation on shortlisted pilot projects. This scheme is targeted to be launched in Q2 2023.

### Terms of Joint Certification :

- 1 GreenRE will act as lead certifier for private sector projects through GreenRE NRB v4.0 rating tool (to be launched) and CREAM will act as lead certifier for government sector projects through MyCrest v2.0 Design and Construction rating tool.
- 2 Joint certification will aim to achieve a similar carbon reduction score for rated projects. All pre-requisites covering high impact areas to reduce embodied and operational carbon will be mutually adopted.
- 3 Joint certification will be awarded such that a Platinum GreenRE equates to a MyCrest 5-Star rating, Gold a 4-star rating, Silver a 3-star rating and Bronze a 2 or 1-star rating.
- 4 1st stage joint certification will be applicable for new non-residential building projects only (i.e retail, shopping centres, hotels, office and commercial buildings). Other categories (i.e existing non-residential, residential, industrial and healthcare) will be developed in subsequent stages.

# NEWS & ANNOUNCEMENTS.

## GREENRE- CAMBODIA GREEN BUILDING COUNCIL COLLABORATION (CGBC)

GreenRE was invited to join the Cambodia Green Building Council as a Strategic member. This collaboration aims to drive the sustainability agenda in Cambodia through GreenRE's certification tool.

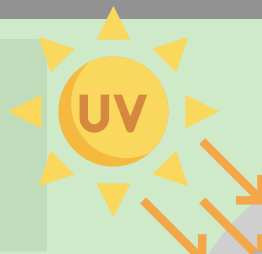
Learn more about Cambodia GBC's smart cities initiatives here: <https://camgbc.org/>



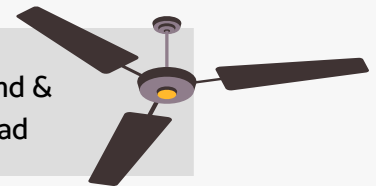
## GREEN HOME TIPS

# 6 TIPS ON REDUCING ELECTRICITY BILLS @ HOME WITH ZERO EXPENSES

Use natural light instead of artificial lighting during the day



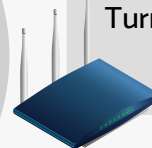
Turn off air cond & use fan instead



Use natural airflow indoors with open windows and doors



Turn off wifi when not in use



Take showers without using water heater



Switch off electrical appliances when not in use



# Calendar OF EVENTS

**14-16**  
FEBRUARY  
GREENRE ACCREDITED  
PROFESSIONAL'S COURSE NO.30  
Wisma REHDA, Kelana Jaya / Online  
GreenRE CPD Points: 15

**20**  
MARCH  
GREENREAPC30 (EXAMINATION)  
Online

**21**  
MARCH  
GREENREAPC30  
(GROUP PROJECT)  
Online

**16-17**  
MARCH  
GREENRE TECHNICAL SEMINAR 01-  
2023 (EFFICIENT CENTRAL AIR-  
CONDITIONING DESIGN AND M&V  
SYSTEMS)  
Wisma REHDA, Kelana Jaya  
GreenRE CPD Points: 5

**6**  
APRIL  
GREENRE TECHNICAL  
SEMINAR 01-2023  
(EXAMINATION)  
Online

**9-11**  
MAY  
GREENRE ACCREDITED  
PROFESSIONAL'S COURSE NO.31  
Johor  
GreenRE CPD Points: 15

**8**  
JUNE  
GREENREAPC31 (EXAMINATION)  
Online

**9**  
JUNE  
GREENREAPC31  
(GROUP PROJECT)  
Online

**8**  
AUGUST  
GREEN BUILD CONFERENCE  
(GBC) 2023  
Petaling Jaya

# FEATURED ARTICLE

## A ENERGY PLUS Building: UniKL Sustainable Energy Living Lab

Gregers Reimann  
IEN Consultants Sdn Bhd

As published in:

<https://www.ien.com.my/post/energyplus-building-launch>

### Towards net positive energy Buildings

Malaysia's first Net Zero energy Building, UniKL Sustainable Energy Living Lab, was launched last 27 July 2022 by Datuk Seri Mahdzir Khalid, Minister of Rural Development.

In a world that is transitioning to fluctuating 100% renewable energy production, buildings must increasingly be designed with a flexible demand, the so-called "buildings as batteries" concept.

The structure of this unique university building points to the future by showcasing the combination of energy-efficient building designs, dynamic energy storage systems and building integrated renewable energy systems.

### Living Lab Concept

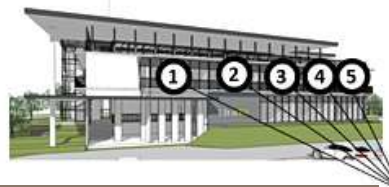
This building will be primarily used as teaching labs. Five identical sized labs, facing due South, were fitted with a number of sensors and energy meters, allowing for daily performance comparison during the everyday usage of the labs, hence, the terminology 'living labs'.

Different systems were included, to allow for a comparison in terms of energy consumption, thermal comfort, occupant satisfaction and façade performance ie. cooling systems (floor slab cooling, ceiling fans and fan coil units) and façade systems (double glazing, light shelves, automated blinds, manual blinds).

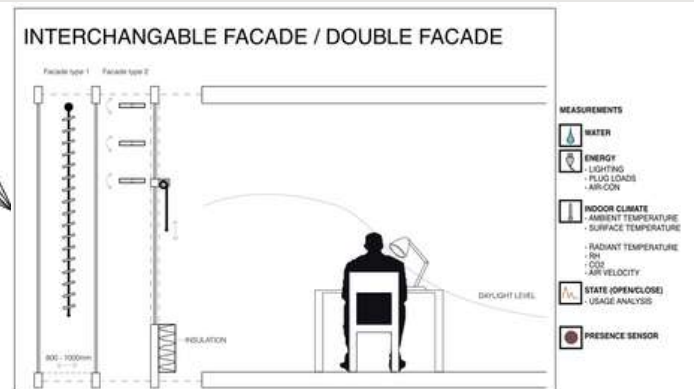
The living lab concept creates an excellent university-industry collaboration and applied research environment. Building solution manufacturers will be keen to test their products under real-life use and will be eager to collaborate with university researchers to improve the performance of their products.

The living lab can offer 3rd party building system testing by the university and test results that the industry can use for marketing. Moreover, the living lab will be the basis for many research projects for staff and students.

Rendering of building facade with university logo and name being the first printed solar PV vertical wall in Malaysia



LIVING LAB CONCEPT  
5 identical side-by-side rooms allow for comparative testing of building technologies during ordinary use

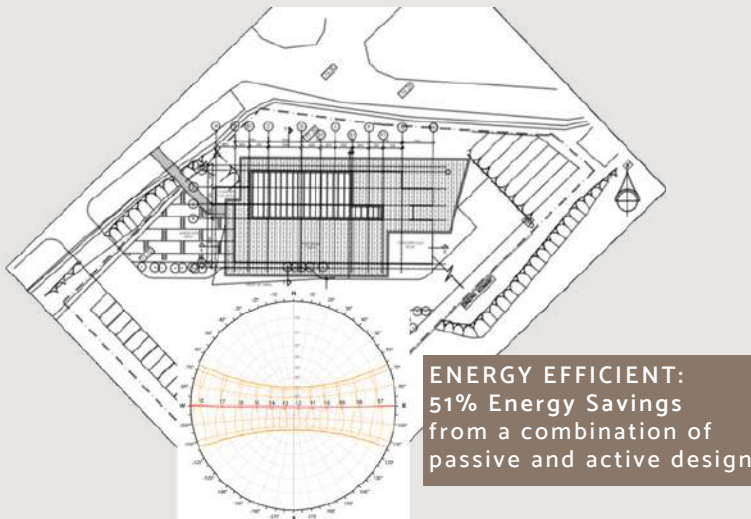


## Energy Efficient Design

The building boasts a 51 percent lower energy consumption compared to a corresponding building according to eh Malaysian Standard MS 1525.

Passive design elements incorporated included optimal orientation with the long facades facing North and South, light shelves to provide adequate and glare-free daylighting for most of the day, as well as designing the corridors to be naturally ventilated instead of air-conditioned.

The active systems design includes an energy-efficient magnetic bearing chiller, variable speed drive controls for pumps and fans, energy-efficient daylight responsive electric lighting and high-temperature floor slab cooling.



## Renewable Energy Systems

A 168kWp rooftop integrated solar photovoltaic system that produces 220 MWh/year, twice as much as the requirements of this building, (106 MWh/year), decisively making this an ENERGY PLUS building.

Vertical solar photovoltaic panels are installed on select wall sections, most notably a printed solar panel wall - the first such installation in Malaysia. Customised solar panels make them much more attractive for architects.

## Energy Storage Systems

Solar panels typically charge the battery during the day and discharge at night. This building has both electric and thermal energy storage systems allowing for optimal use of energy.

## Electrical Battery System

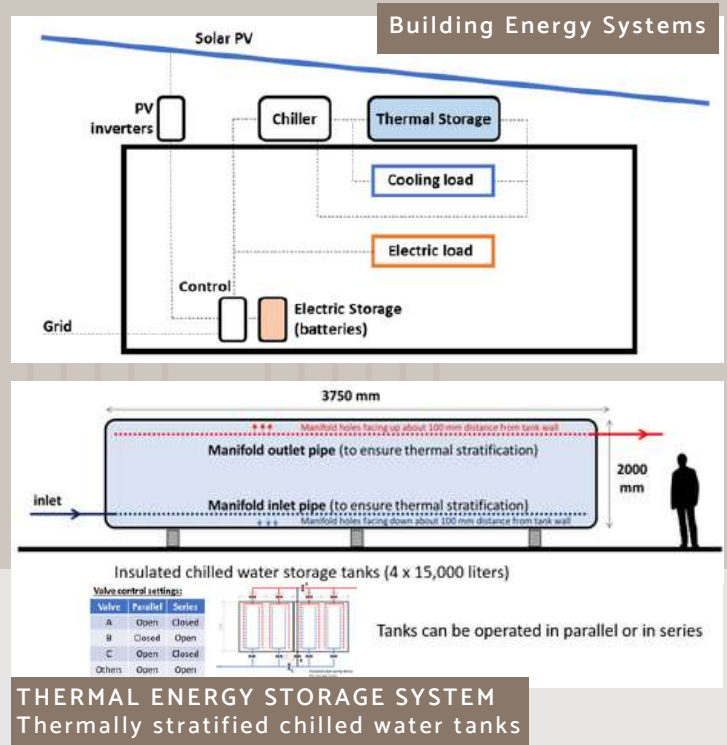
The biggest energy storage is found in the electrical battery system consisting of a pack of lithium-iron batteries with an electrical storage capacity of 384 kWh. The building also has an extensive thermal storage system place on the flat concrete roof next to the chiller: four 15,000-litre insulated chilled water storage tanks with a thermal storage capacity of 150 kWh.

## Thermal Energy Storage System

### a. Chilled water

These chilled water storage tanks will typically be charged during the day when excess solar power can be used for additional chilled water production. In the morning hours before the solar panels can power the chiller, a small pump can draw chilled water for the chilled water storage tanks and provide the necessary cooling until the solar-powered chiller can start to kick in around 9.00am. This way, the chilled water storage allows the building to operate without having to draw too much on the battery.

Batteries have a limited number of charging/discharging cycles before the batteries need to be replaced. In contrast, there is no limit to a chilled water tank's charging / discharging cycle. Additionally, the environmental impact of water is minimal compared to that of batteries, another good reason for shifting part of energy storage away from batteries to thermal storage.



## THERMAL ENERGY STORAGE SYSTEM

Thermally stratified chilled water tanks



## b. Thermally Activated building system (TABs)

The building also has a small thermal storage system, a thermally activated building system (TABs, or floor slab cooling system) consisting of embedded PEX pipes inside the reinforced concrete slabs. By running 19 degrees Celsius water through pipes, the structure of the building becomes part of the cooling system.

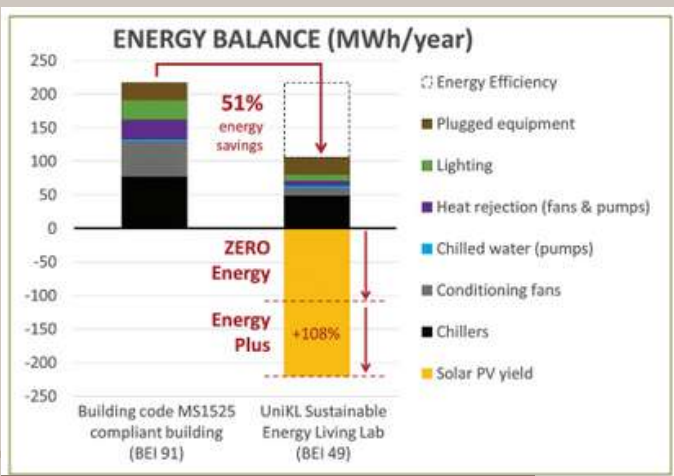
This cooling of the structural mass of the building is done at night, and released during the day. Typically, the reinforced concrete will have a temperature swing of up to two degrees Celsius from day to night and can account for up to 40 per cent of the cooling.

This floor slab cooling system not only functions as a thermal energy storage system, but can also almost double the energy-efficiency of the chiller because the lift is greatly reduced when producing 19 degrees Celsius chilled water compared to the conventional six-degree Celsius water.

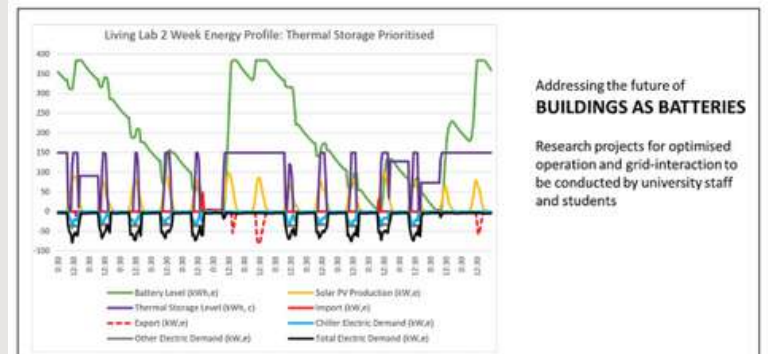
For the UniKL Sustainable Energy Living Lab building, two of the living lab rooms use the TABs.

## Stand-Alone Operation

The building has sufficient energy storage and solar panels for stand-alone operation, which means it is disconnected from the national electric grid. The stand-alone operation will be mainly for demonstration purposes, as the building typically will be grid-connected, exporting its excess energy to the surrounding UniKL buildings on campus.



**ENERGY PLUS BUILDING**  
The building produces more than twice the energy that it consumes annually



2-week energy simulation of Grid Interactive Building showing energy production, energy storage and energy consumption flows employing the "Building as a battery" concept

Addressing the future of **BUILDINGS AS BATTERIES**  
Research projects for optimised operation and grid-interaction to be conducted by university staff and students

## Future: Grid Interactive

The Paris Agreement stipulates that globally, greenhouse gas emissions by 2030 will need to be reduced by half and fully decarbonise by 2050 to avoid irreversible catastrophic climate change. This will mainly be achieved through an aggressive push for energy-efficiency and a transition to 100 percent renewable energy. The UniKL Sustainable Energy Living Lab building does precisely that.

Moreover, with its substantive energy storage system, the building showcases the flexible demand response needed for the future electric grid powered – not by steady fossil fuel power plants – but by fluctuating renewable energy sources such as solar, wind and hydropower.

Once the electric grid becomes primarily powered by renewable energy, it becomes essential to match the demand with the supply. In other words, when the energy is available, solar energy should be used and/or stored. Whereas, during periods with scant energy production, for example, at night, the energy demand should be reduced and/or postponed. For this purpose, buildings can play a crucial role.

Buildings energy systems, such as cooling systems (chilled water storage, floor slab cooling systems, fridges and freezers), and heating systems (hot water heating), can be designed to be grid-interactive.

The UniKL Sustainable Energy Living Lab is an essential showcase for this new grid dynamic paradigm, where building as batteries is part of the sustainable transition.

The UniKL Sustainable Energy Living Lab will be piloting GreenRE's Super Low Energy (SLE) building rating tool .

# FEATURED ARTICLE

## ASIA PACIFIC LEADS THE REST ON ESG DATA

Ruben Langbroek

Head of Asia Pacific at GRESB

*Originally published in the January 2023 issue of Institutional Real Estate Asia Pacific.*

During the opening of the recent COP27 summit, UN Secretary-General António Guterres told world leaders that we are “on a highway to climate hell, with our foot still on the accelerator.”

Indeed, we need to phase out fossil fuels fast to limit global warming and prevent a climate disaster, and the real estate industry has an important role to play in this because the buildings we live and work in are both part of the problem and the solution. About 40 percent of global carbon emissions come from buildings, two-thirds of which is from the energy needed to heat, cool and power them, with the remaining from materials and construction activities. As such, increased investments that support the transition to a net-zero, or even climate-positive, built environment will have huge positive effects.

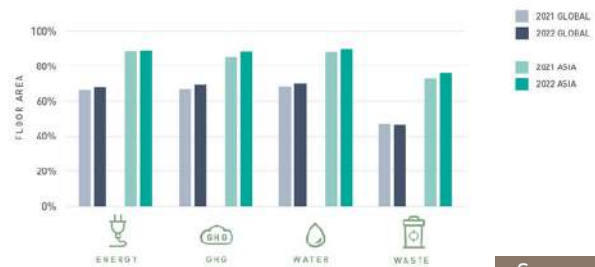
Consequently, it is no surprise that climate change and decarbonization are top of mind for the real estate investment industry. This is evidenced by the 2022 GRESB Real Estate Results, which show increasing ambitions to get to net zero faster compared with last year: almost half of all GRESB participants with net-zero targets aim for their real estate portfolios and assets to reach net zero in the next 16 years. That said, companies will need to demonstrate that their climate ambitions are more than just words, so investors can allocate their capital accordingly. This is why our industry needs to measure progress based on timely, reliable and standardized environmental data.

Real estate companies and fund managers in Asia Pacific have recognized that we must consistently measure what matters because measurement leads to better management – and that, in turn, attracts investment. Looking at the key environmental metrics that GRESB participants can report on, it’s important to note that the Asia Pacific region outperforms all others in terms of environmental data coverage. Importantly, this region also shows an overall year-on-year increase in data coverage.

This allows companies to better communicate their actions and measure progress towards their targets, rather than just declaring where the finish line is. Indeed, it’s all about the journey. Meanwhile, increased institutional capital flowing towards net-zero aligned portfolios and buildings will ensure our destination won’t be hot as hell.

### Environmental Performance

Increased data coverage...



Source: GRESB

### Net-Zero Target Setting

Higher ambition to get to net zero faster



Source: GRESB

# RESEARCH COLLABORATION

## GREENRE-XMUM-UITM RESEARCH PARTNERSHIP

Life Cycle Assessment of Embodied and  
Operational Carbon in High-Rise Office Building

Assoc. Prof. Ts. Dr.  
Vincent Woon Kok Sin  
*School of Energy and Chemical Engineering  
Xiamen University Malaysia*

GreenRE has collaborated with Xiamen University Malaysia (XMUM) and Universiti Teknologi MARA (UiTM) to investigate the life cycle carbon of green buildings and develop a carbon benchmarking model. In this research, the total carbon emissions of a green building, particularly embodied carbon, will be quantified. Embodied carbon is emitted during manufacturing, transportation, construction, maintenance, repair, and end-of-life phases. As the construction sector produces 11% of all worldwide energy-related carbon emissions, this study intends to estimate the embodied carbon emissions from green buildings.

A variety of factors contribute to the embodied carbon of a green building. It is always a complicated procedure to quantify carbon emissions. We attempt to design an empirical carbon benchmarking model to assist the public in determining the building's carbon emissions more efficiently and accurately. This benchmarking model would provide industry stakeholders with a shared space and reference in measuring the building's carbon emissions, making it easier to visualise the state of a building by comparing it to the benchmarking score.

In establishing the benchmarking model, this study integrates two methods: life cycle assessment (LCA) and regression analysis. We are now analysing building carbon emissions, encompassing the building's embodied and operating phases. Green building environmental hotspots derived from LCA data will be used in the regression analysis to develop the carbon benchmarking model. We would like to express our appreciation to stakeholders willing to provide their data with this project, allowing it to move forward. We hope that the findings of this study are valuable to the public and contribute to the achievement of SDGs 11 (Sustainable Cities and Communities) and 13 (Climate Action).



GreenRE with Xiamen University's Dr. Vincent Woon



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# GREENRE TECHNICAL UPDATES.

## 1.0 Updates Design Reference Guide – Healthcare Facilities

1. The number of credit achievable for Energy Related Requirement (Part 1 – Energy Efficiency) is capped at 50 credits (excluding 20 bonus credits that are obtainable under HC 1-11 Renewable Energy)
2. The number of credit achievable for Others Green Requirement (Part2 – Part 6) is capped at 50 credits.

## 2.0 Updates on the Carbon Factor for Water – All Tools

Effective January 2023, for operational carbon calculation requirements, the carbon emission factor for water is 0.419 kg CO<sub>2</sub>/m<sup>3</sup>.

## 3.0 Updated GreenRE Rating Tools

GreenRE will be launching two new reference guides in February 2023:

1. GreenRE Reference Guide for Office Interior Version 2.0
2. GreenRE Reference Guide for Township Version 2.0
3. GreenRE Reference Guide for Super Low Energy Building (Annex to NRB and ENRB Tools)

## 4.0 Certificate Issuance

Effective February 2023, GreenRE will issue an e-certificate and one (1) A4 size hardcopy certificate for all certified projects. Additional copies or other sizes will be prepared upon request.



# NEWLY CERTIFIED GREENRE PROJECTS

| PROJECT NAME & LOCATION                                | COMPANY  | ESD CONSULTANT              | DESIGN REF | TYPE OF CERT | DATE OF CERT |
|--|--|-----------------------------|------------|--------------|--------------|
| Sunway Belfield Sdn Bhd                                | Sunway Belfield Sdn Bhd  | LJ Energy Sdn Bhd           | RES v3.0   | Provisional  | 22/12/2022   |
| D'Erica Residences (Damansara Park Plot 8)             | MightyProp Sdn Bhd   | Zeal Greentech Sdn Bhd      | RES v3.1   | Provisional  | 2/8/2022     |
| Sunway Carnival Mall 2 (New Mall)                      | Sunway Reit Management Sdn Bhd   | G-Energy (M) Sdn Bhd        | NRB v3.0   | Provisional  | 30/8/2022    |
| MOSSAZ (Empire Zone 7)                                 | Himpunan Kencana Sdn Bhd   | Zeal Greentech Sdn Bhd      | NRB v3.1   | Provisional  | 1/9/2022     |
| Suite Canselor (Ampang Serviced Apartment)             | Idaman Sejiwa (Ampang) Sdn Bhd   | Zeal Greentech Sdn Bhd      | RES v3.2   | Provisional  | 14/9/2022    |
| D'Cosmos (Empire Damansara Plot 1)                     | Momentumace Sdn Bhd  | Zeal Greentech Sdn Bhd      | RES v3.1   | Provisional  | 26/9/2022    |
| VanaVasa Resort  | AK Retreat Sdn Bhd   | Veritas Environment Sdn Bhd | NRB v3.1   | Provisional  | 21/10/2022   |
| Bukit Raja Distribution Centre 2 (BRDC2)               | RHB Trustees Berhad  | DME Solutions Sdn Bhd       | IND v1.0   | Provisional  | 23/11/2022   |
| D'Clover (Exsim Damansara Phase 5)                     | EXSIM Group Momentumace Sdn Bhd  | Zeal Greentech Sdn Bhd      | RES v3.1   | Provisional  | 19/12/2022   |
| Vierra Residence                                       | Fajarbaru Land Sdn Bhd   | Zeal Greentech Sdn Bhd      | RES v3.2   | Provisional  | 29/7/2022    |
| D'IVO Residences @ Old Klang Road                      | Konsortium Exsim Development Sdn Bhd                                   | Zeal Greentech Sdn Bhd      | RES v3.0   | Provisional  | 2/9/2022     |
| The MET Corporate Towers (Tower A) & Retail            | Triterra Metropolis Sdn Bhd  | DME Solutions Sdn Bhd       | NRB v3.2   | Provisional  | 28/9/2022    |
| Exsim Macalister                                       | Exsim Macalister Sdn Bhd   | Zeal Perunding Sdn Bhd      | RES v3.1   | Provisional  | 17/10/2022   |
| Residensi Sini (Anggun Serviced Apartment)             | Spectrum 88 Sdn Bhd  | Zeal Greentech Sdn Bhd      | RES v3.2   | Provisional  | 15/11/2022   |
| Mapletree Logistics Hub Shah Alam (MLHSA)              | Semangkuk 2 Berhad   | DME Solutions Sdn Bhd       | EIND v1.0  | Provisional  | 30/11/2022   |
| Axis Facility 2 @ Bukit Raja (Axis Lion Warehouse)     | RHB Trustees Berhad (As Trustee for Axis Real Estate Investment Trust) | DME Solutions Sdn Bhd       | EIND v1.0  | Provisional  | 28/12/2022   |
| Miranda Hill (Verdana 2 Residensi)                     | Freedom Estate Sdn Bhd   | DME Solutions Sdn Bhd       | RES v3.1   | Provisional  | 22/7/2022    |
| Gravit8 Phase 2C - The Tresor                          | Vibrantline Sdn Bhd  | ESD Greentech Sdn Bhd       | RES v3.2   | Provisional  | 11/8/2022    |
| ALP Bukit Raja Omega (Omega Malaysia)                  | ALP BR (Malaysia) Sdn Bhd  | DME Solutions Sdn Bhd       | TS v1.0    | Provisional  | 9/9/2022     |
| Lubetech Sdn Bhd                                       | Lubetech Sdn Bhd   | DME Solutions Sdn Bhd       | IND v1.0   | Provisional  | 14/9/2022    |
| IJM Rimbayu Uptown Square                              | Bandar Rimbayu Sdn Bhd   | Green Quarter Sdn Bhd       | IND v1.0   | Provisional  | 6/10/2022    |
| Sunway Dora  | Sunway Tunas Sdn Bhd   | DME Solutions Sdn Bhd       | NRB v3.2   | Provisional  | 11/11/2022   |
| The Stallionz @ Ipoh White Times Square                | Exsim Caldwell (Ipoh) Sdn Bhd  | Zeal Greentech Sdn Bhd      | RES v3.2   | Provisional  | 11/11/2022   |
| The Atera (Serviced Apartment @ Seksyen 51A : Phase 1) | Aneka Sepakat Sdn Bhd  | DME Solutions Sdn Bhd       | RES v3.2   | Provisional  | 21/11/2022   |
| M Astra  | Nova Century Development Sdn Bhd                                       | DME Solutions Sdn Bhd       | RES v3.2   | Provisional  | 22/11/2022   |
| M Nova   | Myvilla Development Sdn Bhd  | DME Solutions Sdn Bhd       | RES v3.1   | Provisional  | 30/12/2022   |
| Compass @ Kota Seri Langat                             | Compass IP Sdn Bhd   | Neapoli Sdn Bhd             | RES v3.2   | Provisional  | 30/12/2022   |
| Hap Seng Star Mercedes-Benz Autohaus @ Bukit Tinggi    | Hap Seng Realty (Auto) Sdn Bhd   | KVA Konsult Sdn Bhd         | NRB v3.1   | Actual       | 2/8/2022     |
| UMW Equipment Division Headquarters                    | UMW Development Sdn Bhd  | DME Solutions Sdn Bhd       | NRB v3.1   | Actual       | 17/8/2022    |
| UMW Equipment Division Serendah Campus                 | UMW Development Sdn Bhd  | DME Solutions Sdn Bhd       | IND v1.0   | Actual       | 24/8/2022    |
| Nidoz Residences @ Desa Petaling                       | Aspire Causeway Sdn Bhd  | Aspire Causeway Sdn Bhd     | RES v3.0   | Actual       | 15/12/2022   |

# NEWLY CERTIFIED GREENRE ACCREDITED PROFESSIONALS (GREENREAPS).

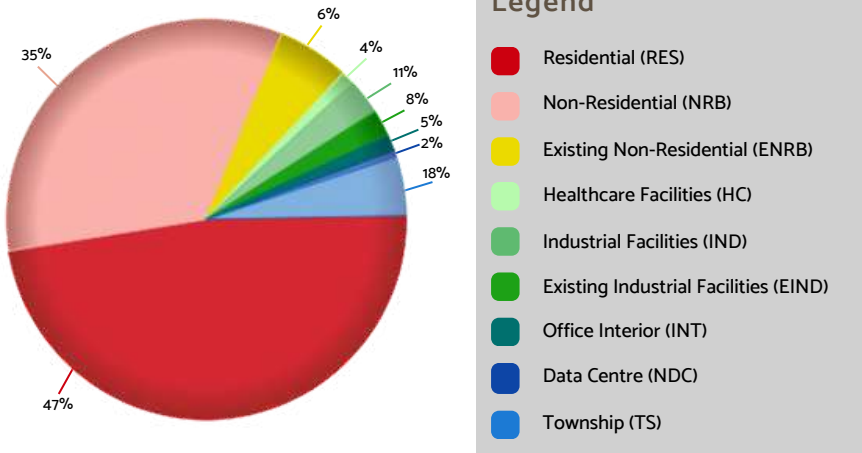
| CERT NO.      | NAME                                 | COMPANY                               |
|---------------|--------------------------------------|---------------------------------------|
| GREENREAP0350 | Aifahana Syamimie Binti Mohd Suhaimi | G- Energy (M) Sdn Bhd                 |
| GREENREAP0351 | Song Pei Fen                         | Sunway Property                       |
| GREENREAP0352 | Timothy Wong Sie Tiong               | Kolej Laila Taib                      |
| GREENREAP0353 | Tunku Akmaludin Zakri                | Antah Solar Sdn Bhd                   |
| GREENREAP0354 | Ngo Choon Liang                      | Turner International Malaysia Sdn Bhd |
| GREENREAP0355 | Tan Wee Tung                         | Eco World Development Group Berhad    |
| GREENREAP0356 | Moey Sui Min                         | MTT Properties & Development Sdn Bhd  |
| GREENREAP0357 | Ahmad Zafiri Bin Abdul Majid         | Turner International                  |
| GREENREAP0358 | Mohana Kumar a/l Sangrapandian       | Sunway Iskandar Sdn Bhd               |
| GREENREAP0359 | Tang Jenq Hann                       | Neapoli Sdn Bhd                       |
| GREENREAP0360 | Chow Kok Min                         | Perunding KYS Sdn Bhd                 |
| GREENREAP0361 | Raudhah Binti Hussin                 | Perunding TAG (M&E Consultant)        |

**CONGRATULATIONS**  
**TO ALL**  
**& WELCOME ABOARD**

# PROJECT STATISTICS.



## Project Registered



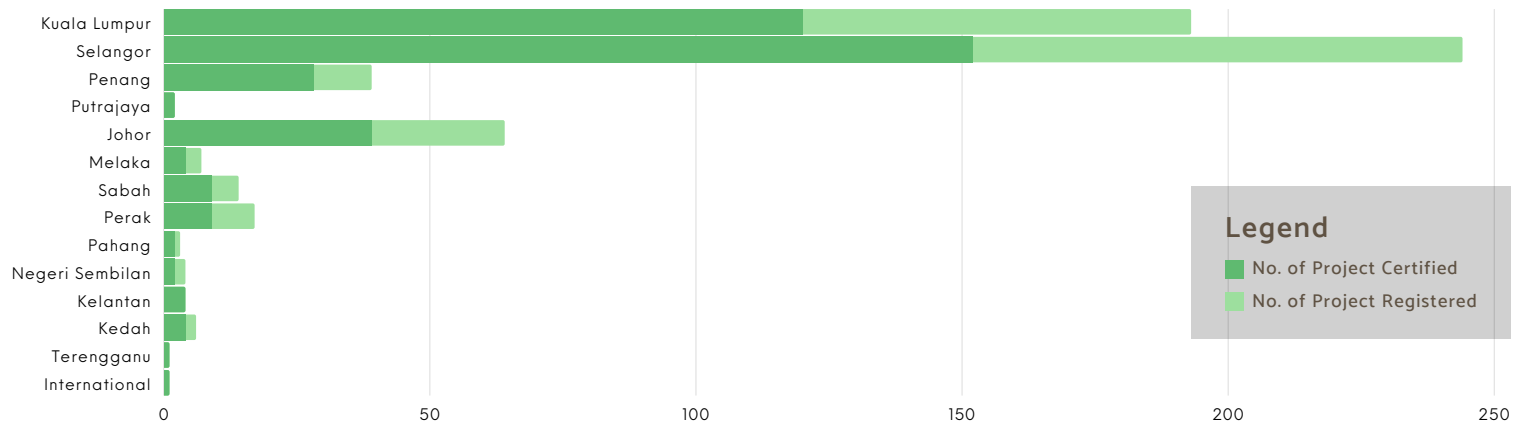
## Project Certified

222 out of 377 projects registered are certified as of December 2022

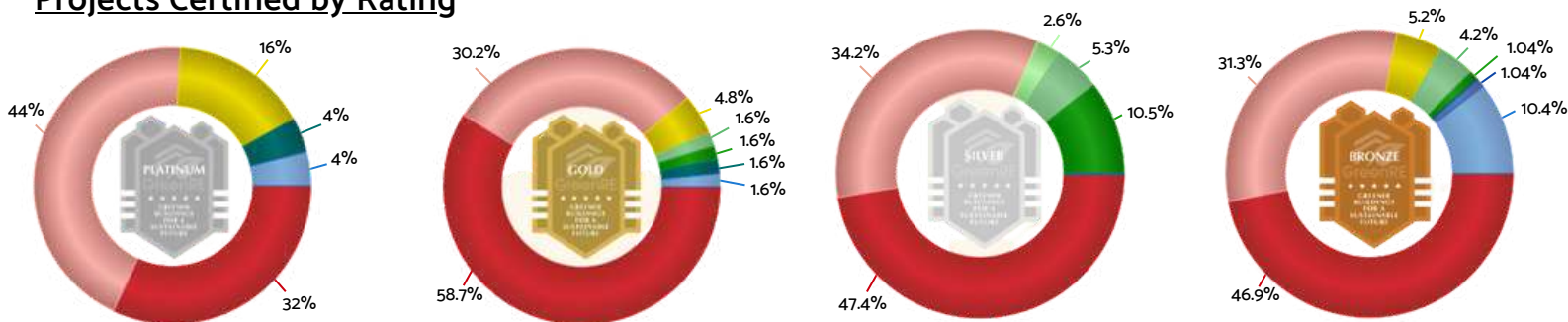


## Project Distribution

As of December 2022



## Projects Certified by Rating



### Legend

- Residential (RES)
- Non-Residential (NRB)
- Existing Non-Residential (ENRB)
- Healthcare Facilities (HC)
- Industrial Facilities (IND)
- Existing Industrial Facilities (EIND)
- Office Interior (INT)
- Data Centre (NDC)
- Township (TS)