MEDIA RELEASE

SUPER LOW ENERGY IS THE NEW GREEN FOR BCA GREEN MARK AWARDS

- 17 private and public sector projects are the inaugural recipients of the Super Low Energy Award.
- 14 recipients awarded the BCA-HPB Green Mark for Healthier Workplaces certification, as more building owners place increasing emphasis on occupant health and comfort in addition to office sustainability.
- The Land Transport Authority will receive the Green Mark Champion award.

Singapore, 24 May 2019 – 17 projects will be the inaugural recipients of the Green Mark for Super Low Energy (GM SLE) Award by the Building and Construction Authority (BCA) this year. The projects, from 7 private and public sector developers, demonstrated best-in-class energy performance while maintaining cost effectiveness. The SLE programme sets a higher benchmark for best-in-class green buildings in Singapore. <Further details at Annex A>

2 The Nanyang Technological University, Singapore (NTU Singapore) sets a high standard among the winners in the GMSLE category, clinching the award for eight campus projects such as its sports hall The Wave, the School of Humanities and School of Social Sciences and the Wee Kim Wee School of Communication and Information. NTU has implemented a variety of energy saving initiatives such as the campus-wide solar energy harvesting system that generates 5.9MWh/year and a 'Passive Displacement Cooling' system which uses convection to keep rooms cool. NTU will also progressively roll-out Smart Integrated Building Management systems that will see up to 10 per cent energy savings from air-conditioning units. NTU is Singapore's first recipient of the Green Mark Platinum^{STAR} Champion in 2016. With more than 50 Green Mark Platinum projects, NTU aims to upgrade the remaining buildings to Platinum by next year.

3 Another winner of the GM SLE Award is Samwoh Smart Hub, which will receive the Green Mark Platinum (Positive Energy) award. The project incorporates energy and water saving measures in its design, including double glazed windows on the north and south facades to harness natural daylight, and a windowless design on the east and west facades to reduce heat absorbed by the building. The project will also have on-site water recycling measures and leverage a smart Building Management System (BMS) and Facility Management to optimise utility management and consumption. Together with high-yield solar panels which will produce about 110% of the building's energy consumption, the Hub targets to save close to $180,000 a year

in overall utility bills. The project is also a recipient of the Green Buildings Innovation Cluster (GBIC) fund, in recognition of its efforts in adopting promising building energy-efficient technologies and solutions.

4 CEO of Samwoh Corporation Pte Ltd Mr Eric Soh said: “Sustainability and innovation is in our DNA. Even as our business grows, we remain committed to developing innovative solutions and products to ensure sustainability in all that we do. Samwoh embraces sustainability because we understand we’re not just building infrastructure, but also building the future.”

Green Mark Champion: Land Transport Authority (LTA)

5 The Land Transport Authority (LTA) has shown strong commitment towards environmental sustainability, with a total of 14 Green Mark projects. In recognition of their efforts, LTA will be conferred the Green Mark Champion this year. This year, the Yio Chu Kang Bus Interchange will receive the Green Mark Gold^{PLUS} Award. The project expects to save an estimated 133,812kWh energy and 1811m^3 of water every year. Among the features which will help the project achieve these are a green roof with drought-tolerant plants that keeps the interchange cool by reducing heat absorbed by the structure, water efficient fixtures rated Excellent under WELS, and an energy efficient air-conditioning system. <Further details at Annex B>

BCA-HPB Green Mark for Healthier Workplaces

6 14 offices will receive their awards under the new BCA-HPB Green Mark for Healthier Workplaces (GM HW) scheme. A joint effort between BCA and the Health Promotion Board (HPB), the scheme emphasises on the health, well-being and comfort of the occupants, in addition to office sustainability. Under GM HW, companies will have to consider factors such as space selection and office design, operation and maintenance, as well as occupant engagement and empowerment. <Further details at Annex C>

7 Keppel Corporation, Keppel Capital and Keppel Land, three entities under the Keppel Group, will all be receiving the GM HW (Platinum) Award. An occupancy-based smart lighting control system helps the offices save energy with better control and automation. The office has also adopted a fully agile workplace concept with no assigned seating for staff, enabling more effective and dynamic space usage. The entities have shown encouraging efforts to promote active living in the office space with sit-stand desks and internal staircases within their premises, as well as promoting healthier eating through provision of discounts for nearby healthier food establishments.

8 DBS Bank Ltd. has clinched two GM HW (Platinum) Awards for its offices DBS Asia Central and DBS Asia Hub. In addition to managing lighting, energy and water efficiency, the office has an open and flexible layout with the option of an activity-based design that enables new ways of working for staff to interact more, foster innovation and drive collaboration. There is strong commitment to health and wellbeing of occupants from the senior management, who launched initiatives ranging from a variety of sports interest groups to online health coaching tools to encourage employees to adopt a healthier lifestyle.

Green Mark puts local consultant firms on the world map

9 The BCA Green Mark has achieved international recognition since it was launched 14 years ago. To date, some 300 projects across 80 cities have attained the Green Mark certification. Singapore consultants are exporting their expertise to help meet the strong overseas demand for green buildings. For example, G-Energy Global Pte Ltd, a local small and medium-sized (SME) energy services company, has successfully grown and exported its capabilities, with the firm having close to 400 local and international Green Mark projects under its belt. The firm's notable projects include Jewel Changi Airport and Resorts World Sentosa in Singapore, Saigon Sports City in Vietnam and World Trade Centre 2 in Indonesia. <Further details at Annex D>

Consistent upward trend for higher-tier Green Mark Award ratings

10 BCA will be giving out the Green Mark Award to 395 projects this year, more than half of which have achieved the higher-tiered BCA Green Mark Platinum and Gold^{PLUS} ratings. This uptrend has continued over recent years and is indicative that more building owners and developers are recognising the benefits of going green from both environmental and economic perspectives.

11 Mr Hugh Lim, BCA CEO said, "Since Singapore's green building journey began in 2005, more than 109 million m^2 of gross floor area has been greened. The joint efforts of BCA and our industry partners, the Singapore Green Building Council, developers and building owners, have increased awareness of the environmental, social and economic benefits of green buildings. More are coming on board to invest in higher-tier certifications. With this year's latest batch of Green Mark projects, Singapore has 'greened' close to 40% of the country's gross floor area, bringing us closer to our national target of greening 80% of all buildings by 2030."

Enclosed

Annex A – Green Mark for Super Low Energy (GM SLE)

Annex B – BCA Green Mark Champion

Annex C – BCA-HPB Green Mark for Healthier Workplaces Scheme

Annex D – G-Energy Global Pte Ltd

Issued by the Building and Construction Authority on 24 May 2019

About BCA

The Building and Construction Authority (BCA) of Singapore champions the development of an excellent built environment for Singapore. BCA's mission is to shape a safe, high quality, sustainable and friendly built environment, as these are four key elements where BCA has a significant influence. In doing so, it aims to differentiate Singapore's built environment from those of other cities and contribute to a better quality of life for everyone in Singapore. Hence, its vision is to have "a future-ready built environment for Singapore". Together with its education arm, the BCA Academy of the Built Environment, BCA works closely with its industry partners to develop skills and expertise that help shape a future-ready built environment for Singapore. For more information, visit www.bca.gov.sg.

For media queries, please contact the Corporate Communications Department:

Annex A: Green Mark for Super Low Energy (SLE)

BCA introduced the BCA Green Mark for Super Low Energy (GM SLE) during International Green Building Conference 2018 (IGBC 2018) on 5 September 2018. This voluntary certification framework targets new and existing non-residential buildings such as offices, commercial/retail, industrial, institutions and schools, including demonstration projects from Research & Innovation efforts. The scheme aims to encourage industry to push boundaries on energy efficiency to achieve best-in-class building energy performance in a cost effective manner. It is applicable for new and existing non-residential buildings including commercial, industrial and institutional buildings as well as schools.

Under BCA Green Mark for SLE, there are two building categories: (a) Super Low Energy buildings and (b) Zero Energy Buildings (refer to *Table 1*)

Table 1. GM SLE Building Categories

SLE/ZE certification	Requirement
Super Low Energy	To achieve at least 60% energy savings through adopting energy efficient measures and onsite renewable energy based on 2005 building code level.
Zero Energy	Use of onsite and off-site renewable energy to generate more than 100% of energy needed for building operation including plug load.

Green Mark Gold rating is the minimum requirement for SLE and ZE buildings in order to meet the holistic environmental sustainability indicators, such as greenery, indoor environmental quality and other non-energy aspects. This ensures the overall environmental sustainability performance indicators are being looked at holistically, while pushing the boundaries in terms of building energy performance.

For more information, visit https://www.bca.gov.sg/GreenMark/GM_SLE.html

Green Mark SLE Awards Inaugural Recipients

A total of 17 projects will be the inaugural recipients of the Green Mark for Super Low Energy (GM SLE) Award this year. They are:

S/N	Building Name	Developer/ Building Owner	Award
1	Samwoh Smart Hub	Samwoh	Green Mark Platinum (Positive Energy)
2	Surbana Jurong Campus	Surbana Jurong	Green Mark Platinum (Super Low Energy)
3	Development of Camp Facilities at Kranji Camp III for OES	DSTA	Green Mark Platinum (Zero Energy)
4	Home Team Academy	HomeTeam Academy	Green Mark Platinum (Super Low Energy)
5	Block 1337 Seletar Camp	DSTA	Green Mark Gold^{PLUS} (Zero Energy)
6	Nanyang Auditorium	NTU	Green Mark Platinum (Zero Energy)
7	Wee Kim Wee School of Communication and Information	NTU	Green Mark Platinum (Zero Energy)
8	School of Humanities and Social Sciences	NTU	Green Mark Platinum (Zero Energy)
9	Administration Building	NTU	Green Mark Platinum (Zero Energy)
10	Nanyang House	NTU	Green Mark Platinum (Zero Energy)
11	The Wave	NTU	Green Mark Platinum (Zero Energy)
12	Block N1.1	NTU	Green Mark Platinum (Zero Energy)
13	Block N3	NTU	Green Mark Platinum (Super Low Energy)
14	SDE4	NUS	Green Mark Platinum (Zero Energy)
15	SDE 1 & 3	NUS	Green Mark Platinum (Super Low Energy)
16	Block EA	NUS	Green Mark Platinum (Super Low Energy)
17	Tahir Foundation Connexion	SMU	Green Mark Platinum (Zero Energy)

For more information on other Green Mark Award winners,
visit https://www.bca.gov.sg/GreenMark/green_mark_projects.html

GM SLE winner: NTU Singapore

Nanyang Technological University, Singapore (NTU Singapore), is dedicated in making its Smart Campus into one of the most eco-friendly and sustainable campuses in the world.

Frequently listed among the global Top 15 most beautiful university campuses, NTU has more than 57 Green Mark-certified building projects comprising over 230 buildings, of which 95% are certified Green Mark Platinum.

New and existing buildings come with a host of energy-efficient features, which are monitored and optimised using an intelligent energy management system, reducing overall energy consumption.

One example is the existing School of Humanities and Social Sciences which has been enhanced with efficient water-cooled air-conditioning systems, energy-efficient LED lights and motion sensors toilets and staircases that keep lighting usage flexible. Another upgraded facility is the Wee Kim Wee School of Communication and Information. It has been upgraded with variable speed drives for pumps and water leakage detection systems to avoid unnecessary waste.

In addition, most buildings on NTU's campus are also powered by solar photovoltaic panels, which offsets up to 100 per cent of building energy consumption.

NTU has pioneered a variety of green construction techniques and applications. For example, NTU's student hostels at North Hill and Nanyang Crescent are the first public high-rise buildings using Prefabricated Pre-finished Volumetric Construction (PPVC), that allows prefabricated individual rooms to be stacked on top of each other. This method saves up to 25 to 40 per cent in manpower and 15 to 20 per cent in construction time. It also reduces noise and dust pollution onsite as more activities are done off-site.

NTU is also home to Southeast Asia's first large-scale building that uses an innovative timber construction technology known as Mass Engineered Timber. It provides five times better heat insulation than concrete and comes with a host of eco-features such as a passive displacement cooling system that uses convection to chill the air.

As part of its continuous drive towards sustainability, last year, NTU launched the oneNTU initiative "ECHO" which stands for NTU's "Eco-friendly", "Connected", "Healthy" and "oneNTU to enable the University meet its commitment to reduce energy, water and waste intensity by 35 per cent in 2021, and by 50 per cent by 2025, from the levels of 2011.

Figure 3: School of Humanities and Social Sciences, NTU Singapore
Credit: NTU Singapore

GM SLE winner: Samwoh Smart Hub

Samwoh Corporation Pte Ltd (Samwoh) is a market leader in civil and infrastructure construction as well as an integrated provider of a full suite of engineering services which include the supply of building materials, supply and lay of asphalt premix, supply of ready-mixed and green concrete, recycling of construction and industrial wastes, research & development, pavement evaluation and consultancy services.

The company is a registered A1 civil engineering contractor with BCA under the civil engineering workhead. Innovation and sustainability has been the key drivers of growth for Samwoh. Strong focus on research & development also helps to bring value back to the core business of providing innovative and sustainable construction.

One of the most notable research achievements is the construction of Samwoh's Eco-Green Building, the first landmark building in the region to be constructed using up to a 100% recycle concrete aggregate (RCA). RCA is processed from the construction and demolition (C&D) waste to eliminate the needs for disposal and to enhance our resource resilience.

Samwoh is taking its 'green' journey' to another level with the construction of its new headquarters, Samwoh Smart Hub – the first positive energy industrial building in Singapore. The company aspires for this building to serve as an impetus for the built environment community to push the boundary of innovations for greater sustainability. The design for the Samwoh Smart Hub began in 2017, and when completed in 2020, will allow the company to consolidate all its six current premises into a single location to support its long-term growth plan.

Figure 4: Samwoh Smart Hub main view
Credit: Samwoh Corporation

Annex B: BCA Green Mark Champion

The **BCA Green Mark Champion Award** was launched at BCA Awards 2008. This award recognises developers with strong commitment towards corporate social responsibility and outstanding achievements in environmental sustainability. It is given to developers who have a substantial number of Green Mark buildings at Gold level and higher.

Besides demonstrating a strong commitment towards corporate social responsibility and environmental sustainability, developers must meet these criteria to qualify:

Total no. of buildings rated	**BCA Green Mark Champion**	**BCA Green Mark Platinum Champion**	
		Platinum Champion	**Platinum^{STAR} Champion**
Green Mark Gold & above	At least 10	At least 50	-
Green Mark Gold^{PLUS} & above	At least 6	At least 30	-
Green Mark Platinum	At least 3	At least 15	At least 50

Green Mark Champion: Land Transport Authority

The Land Transport Authority is dedicated to building a sustainable future for Singaporeans. LTA's facilities not only serve operational requirements but are also environmentally sustainable.

In 2018, LTA's Kim Chuan Depot Extension and the East Coast Integrated Depot (Rail) was awarded with the Building and Construction Authority's (BCA) BCA Green Mark Platinum for their environmentally-friendly features. LTA's Stabling Yard at Gali Batu Depot and Bus Depot also won BCA Green Mark Gold Award.

Kim Chuan Depot
To cater to future needs, Kim Chuan Depot's capacity will be expanded to be able to hold up to 140 trains from its current 70. The integrated depot will also house 550 buses, which will allow land use to be optimised. The depot expansion will be completed in 2025, when the CCL6 is expected to complete too.

Various sustainable design strategies for energy efficiency, such as energy efficient air-conditioning, mechanical ventilation and lighting, have been integrated into the Kim Chuan Depot Extension. In addition, sustainable products certified under Singapore Green Labelled Scheme (SGLS) will be extensively used in the development such as the ceiling board, tiles, timber doors and external paints.

East Coast Integrated Depot

The East Coast Integrated Depot's integration of four depots in one is unprecedented. The depot will comprise three train depots and a bus depot. The entire depot will be housed within a single site of 36 hectares, thus saving 44 hectares of land, about the size of 60 football fields. The main train depot building will span over one kilometre and consist of 18,000 precast beams, each up to 20 metres long and weighing up to 45 tonnes.

To reduce energy use, natural ventilation is a key design approach that is widely applied within this depot. Workshop spaces are also designed with dedicated ventilation shafts and supplemented with overhead circulation fans to improve comfort. The energy efficient lighting

system will improve energy use by 45%. A treatment system will also be in place to recycle up to 70% used water from train wash and reuse for train wash. The East Coast Integrated Depot will be completed in 2024.

Downtown Line (DTL)

In 2017, BCA awarded the Downtown Line (DTL) the BCA Green Mark Gold^{PLUS} certification, the highest tier achieved for a rail line to date, for its environmentally-friendly features. The DTL is the second rail line to achieve the BCA Green Mark certification, after the Circle Line (CCL) was presented with the BCA Green Mark Gold award in 2010. The assessment and grading were based on the Green Mark for Rapid Transit System (RTS) framework, jointly developed by the Land Transport Authority (LTA) and BCA.

The DTL is the longest underground rail line in Singapore, spanning 42km, with 34 stations, of which 11 are interchange stations. Similar to the CCL, the DTL adopts a regenerative braking system, which channels the energy produced by the train during braking to power a nearby train or train station. The upgraded system on the DTL shaves off close to 2 per cent of its energy consumption a year, which is equivalent to more than three times the energy saving achieved by CCL, and is enough to provide power to about 370 HDB 5-room flats for an entire year.

The DTL stations are also fitted with air-conditioning systems with energy savings features to minimise energy usage. These features will help save 6300 MWh of energy consumption per year, enough to provide power to about 1080 HDB 5-room flats for a year.

Annex C: BCA-HPB Green Mark for Healthier Workplaces Scheme

Background

The health and well-being of building occupants is increasingly becoming a major value proposition for the adoption of green buildings and interior spaces. This awareness is echoed by business leaders and companies that place growing emphasis on employee health and well-being to differentiate themselves as the employer of choice. In line with global trend and increasing demand for green and healthy buildings, the ***BCA Green Mark has been placing greater emphasis on the quality of indoor environments as well as the health, comfort and well-being of the users and occupants.***

To strengthen the business case for energy-efficient, resource efficient and healthier interior spaces ***BCA collaborated with the Health Promotion Board (HPB) to develop the new BCA-HPB Green Mark for Healthier Workplaces scheme (GM HW: 2018). The scheme was launched at the Breakfast Talk for CEOs on 7 Sep 2018.***

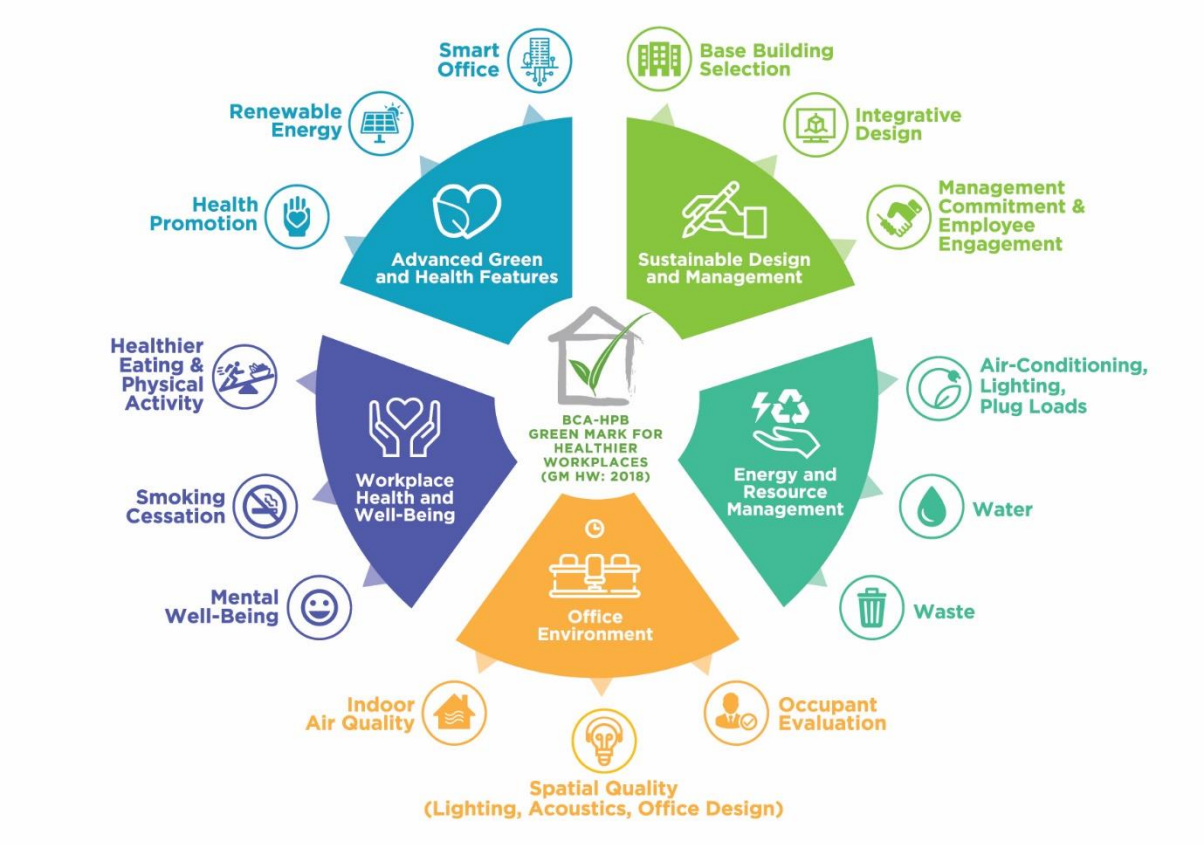
Rationale

With international studies[1] indicating that 90% of the business operating costs are related to human capital costs, staff's productivity would be of paramount interest and concern to any company. The new GM HW would appeal to companies that place emphasis on both health and well-being in addition to environmental sustainability in the office. GM HW aims to provide a clearer and stronger business case for office sustainability by placing occupants' health, well-being and comfort at the forefront of office design and daily operations. It also seeks to create a supportive environment through the establishment of workplace health structures, policies and programmes. With the inclusion of criteria that also looks at the health and well-being, we hope that this will make the value proposition for green interior more compelling and personal from the user's angle.

Enhancements and Key Highlights of GM HW: 2018

To align with the latest Green Mark Schemes, the 5 key sections of GM HW: 2018 will guide companies through the thought process of space selection and office design, operation and maintenance, as well as occupant engagement and empowerment: ***(i) Sustainable Design and Management, (ii) Energy and Resource Management, (iii) Office Environment, (iv) Workplace Health and Well-Being, and (v) Advanced Green and Health Features.*** The BCA-HPB Green Mark for Healthier Workplaces (GM HW: 2018) scheme has replaced the BCA Green Mark for Office Interior (Version 1.1) scheme with effect from 1 Apr 2019.

[1] Source: World Green Building Council's reports on "Building the Business Case: Health, Wellbeing and Productivity in Offices" (Oct 2016) and "Health, Wellbeing and Productivity in Offices: The Next Chapter for Green Buildings" (Sep 2014)



Incentives and Grants

For early movers, a comprehensive suite of incentives and programmes are made available by HPB to help companies. Eligible projects can tap on HPB's SME Health+ that supports health and fitness initiatives for SMEs and Workplace Alliance for Health (WAH) Scheme for medium to large private corporations. More details can be found on the HPB website.

Certified GM HW Projects

A total of 14 companies have so far been certified under the GM HW scheme. They are:

S/N	Company Name (in alphabetical order)	Project Address	Accorded Green Mark Rating
1	Arup Singapore Pte Ltd	182 Cecil Street, Frasers Tower #06-01, Singapore 069547	Platinum
2	C&W Services (S) Pte Ltd	750A Chai Chee Road, #05-01 Viva Business Park, Singapore 469001	
3	City Developments Limited	9 Raffles Place, #10-01 to #12-01 Republic Plaza, Singapore 048619	
4	City Developments Limited	9 Raffles Place, #36-01 Republic Plaza, Singapore 048619	
5	DBS Asia Central	12 Marina Boulevard, Marina Bay Financial Centre Tower 3, #03, #05, #06, #08 to #15 and #40 to #46, Singapore 018982	
6	DBS Asia Hub	Changi Business Park Crescent, #01 to #09 DBS Asia Hub, Singapore 486029	
7	Facility Link Pte Ltd	4 Sungei Kadut Cresent, Singapore 728688	
8	Hongkong Land (Singapore) Pte Ltd	One Raffles Quay, South Tower #22-10, Singapore 048583	
9	Keppel Capital International Pte Ltd	1 HarbourFront Avenue, #10-01, #11-01, Keppel Bay Tower, Singapore 098632	
10	Keppel Corporation Limited	1 HarbourFront Avenue, #12-01, #18-01 Keppel Bay Tower, Singapore 098632	
11	Keppel Land	1 HarbourFront Avenue #02-02/10 Keppel Bay Tower Singapore 098632	
12	Prudential Singapore	7 Straits View, #06-01 Marina One East Tower, Singapore 018936	
13	Raffles Quay Asset Management Pte Ltd	1 Raffles Quay, #19-10 South Tower, Singapore 048583	
14	Camfil Singapore Pte Ltd	8 Kallang Avenue, #12-06/07 Aperia Tower 1, Singapore 339509	Gold^{PLUS}

More information on GM HW can be found at the following sites.
Main link: https://www.bca.gov.sg/GreenMark/GM_Healthier_Workplaces.html
Shortcut to industry circular: http://www.corenet.gov.sg/media/2187036/industry-circular-for-gm-hw-2018_final.pdf

BCA-HPB Green Mark for Healthier Workplaces winner: Keppel Group

For its strong commitment and continuous improvements in environmental performance, the Keppel Group has garnered a total of 14 awards at the Building and Construction Authority (BCA) Awards 2019.

Keppel Land has received 11 awards, including the prestigious BCA Quality Excellence Award – Quality Champion (Platinum), the BCA Green Mark Platinum Awards for Keppel Bay Tower and International Financial Centre Jakarta Tower 2, the BCA Universal Design Mark Gold^{PLUS} Award for Highline Residences, as well as the BCA Universal Design Mark Gold Award for The Glades.

Keppel Land has won the BCA Quality Excellence Award – Quality Champion (Platinum) in recognition of its commitment to and achievement in developing high-quality homes.

Keppel Bay Tower has achieved the BCA Green Mark Platinum Award for the energy-efficient features incorporated within the development. These include a high-efficiency chiller plant system, the use of water-efficient fittings and fixtures, as well as the use of energy-efficient LED lightings.

International Financial Centre Jakarta Tower 2 has achieved the BCA Green Mark Platinum Award for the innovative green technology incorporated within the development. Some of the sustainable features of the office tower include the recycling of rainwater for irrigation, use of water- and energy-efficient fittings and double-glazed low emission glass.

Highline Residences has achieved the BCA Universal Design Mark Gold^{PLUS} Award for its features which enhance user-friendliness, accessibility, connectivity and safety. Such features include a landscaped green deck located at the roof level of the low-rise block, which is integrated with communal facilities and provides seamless connection to the tower blocks. The development also features rooftop urban farms which are available for residents and planter beds which are accessible to wheelchair users.

The Glades has achieved the BCA Universal Design Mark Gold Award. Winning features of the condominium include a fully-equipped net-zero energy clubhouse, as well as unique and thoughtful architecture, complemented by natural terrains and greenery, vertical green walls and water features.

Ocean Financial Centre, a 43-storey premium Grade A CBD office tower which Keppel REIT has a majority interest in, has also received the BCA Green Mark Platinum Award for its myriad sustainable features which include an innovative rainwater collection system and the use of renewable energy sources, such as solar energy harvested by solar panels atop the building, to reduce its greenhouse gas emissions.

At the organisational level, Keppel Corporation, Keppel Land and Keppel Capital have been recognised for their commitment towards environmental protection and efforts in improving staff health and well-being. The BCA and Health Promotion Board (HPB) have awarded all three companies the BCA-HPB Green Mark Platinum certification for Healthier Workplaces, a new certification which promotes health and wellness in offices and workplaces.

In 2018, the workspaces of Keppel Corporation, Keppel Land and Keppel Capital at Keppel Bay Tower were enhanced with a suite of green and healthy features to improve energy efficiency as well as staff health and well-being. The new offices incorporate demand control strategies to minimise wastage. These include smart lighting systems that utilise occupancy sensors to continuously adjust lighting levels according to occupancy load; photosensors that

dim perimeter lightings when there is sufficient daylight as well as copiers with secure printing features which help reduce paper wastage.

Keppel is committed to sustainability, both as a responsible corporate citizen, and as a provider of solutions that contribute to a better, more sustainable world. The Keppel Group will continue to undertake initiatives to promote greater environmental responsibility and encourage the development and diffusion of environmentally friendly technologies.

Keppel's BCA Awards in 2019

QUALITY EXCELLENCE AWARD – QUALITY CHAMPION (PLATINUM)
Keppel Land

GREEN MARK PLATINUM AWARD
Keppel Bay Tower, Singapore
Ocean Financial Centre, Singapore
International Financial Centre Jakarta Tower 2, Jakarta, Indonesia

GREEN MARK GOLD^{PLUS} AWARD
The Garden Residences, Singapore

GREEN MARK GOLD AWARD
Waterfront Residences, Tianjin, China
Saigon Centre – Retail Mall, Ho Chi Minh City, Vietnam
Saigon Centre – Tower 2, Ho Chi Minh City, Vietnam
Palm Residence, Ho Chi Minh City, Vietnam

BCA-HPB GREEN MARK FOR HEALTHIER WORKPLACES PLATINUM AWARD
Keppel Corporation
Keppel Land
Keppel Capital

UNIVERSAL DESIGN MARK GOLD AWARD
The Glades, Singapore

UNIVERSAL DESIGN MARK GOLD^{PLUS} AWARD
Highline Residences, Singapore

BCA-HPB Green Mark for Healthier Workplaces winner: DBS Bank Ltd

DBS Bank, a leading financial services group in Asia, is the first Singapore company to clinch 100% green mark certification accolade in retail sphere, and almost all our offices for its commitment to promoting sustainable development and transition to a low carbon economy. The bank was recently awarded the BCA-HPB Green Mark for Healthier Workplaces Platinum award for its DBS Asia Hub and DBS Asia Central offices as well.

In 2017, DBS was the first Asian bank and first Singapore company to join the global renewable energy initiative RE100. The bank has also committed to using 100% renewable energy for its Singapore operations by 2030. To meet this target, DBS has engaged in three major initiatives. These include operating its own solar energy installation, procuring renewable energy and driving energy efficiencies across its organisation. The solar panels now generate 460MWh annual and powers DBS' Changi Business Park operations. DBS has actively adopted energy efficiency enhancements such as LED lights, energy efficient equipment and enhanced building controls in their operations. The bank has incorporated best practices in its environmental design, water efficiency, sustainable management and operations, and other green features to reduce its environmental footprint.

DBS has adopted activity-based and biophilic design in its office by incorporating ergonomic design features and furniture. A healthy workplace will help increase productivity, reduce cost and boost employee morale. As part of its sustainability agenda, DBS is focused on improving staff awareness around adopting a green mindset at work and in their personal lives.

In Singapore, all DBS and POSB branches have obtained Building & Construction Authority (BCA) Green Mark Certifications. They have achieved a total of 75 BCA Green Mark Certifications for their Singapore retail branches, comprising 10 Platinum, 40 Gold^{PLUS}, 18 Gold and 7 Green Mark Certifications. Two of the major office premises – DBS Asia Hub and DBS Asia Central – have been awarded the highest recognition of Platinum award. Other offices including DBS Asia Gateway has received Gold Plus, DBS Asia X has obtained Gold and office in Newton has received a Green Mark Certification.

Annex D: G-Energy Global Pte Ltd

G-Energy Global Pte Ltd is an energy services company (ESCO) and a sustainable energy consultant from Singapore. The company specialises in energy and environmentally sustainable design for different types of buildings and seeks to expand its services to provide integrated solutions for clients. G-Energy also provides M&E services, BIM and simulation services. Over the years, G-Energy's consultancy teams in Singapore, Malaysia, Myanmar, Vietnam and China have contributed to close to 400 Green Mark projects.

In 2008, the company achieved two firsts in foreign Green Mark Consultancy in the form of G-Tower (Malaysia) and Tuan Sing (Shanghai, China). The two projects are the first-of-its-kind Green Mark projects in Malaysia and China respectively, which were fully handled by G-Energy Global.

G-Energy's main goal is to help clients develop and operate buildings which are more energy, water, and other resources efficient. Through retrofitting chilled water systems used for the cooling of premises, G-Energy has helped its clients achieve significant energy savings. Its client's buildings' high performance is recognised through the BCA Green Mark awards received; other awards include the ASEAN Energy Award and green certification awards including LEED, Malaysia's Green Building Index (GBI) and Indonesia's Greenship.

Some examples of G-Energy's prominent projects include Resorts World Sentosa, Jewel Changi Airport, World Trade Centre 2 (Indonesia), Sinarmas Land Plaza Tower 2 and 3 (Indonesia) and Saigon Sports City (Vietnam).