

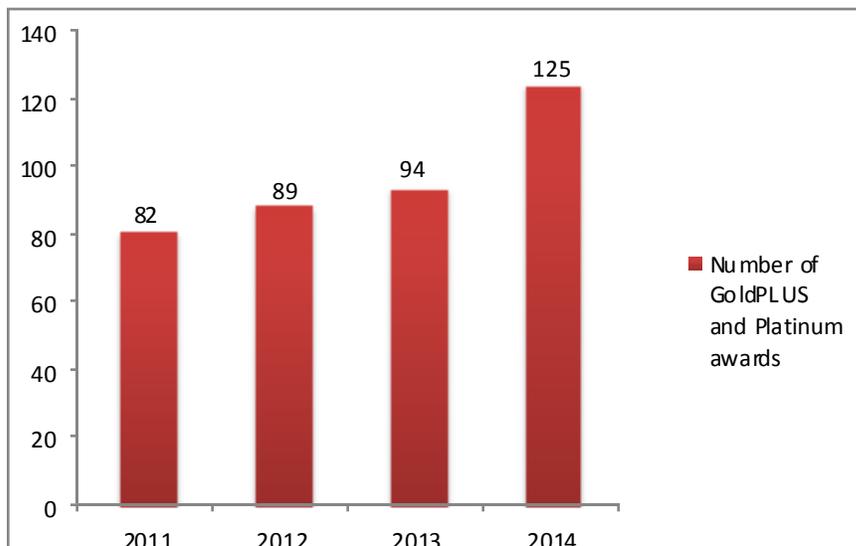
MEDIA RELEASE

MORE BUILDING PROJECTS ACHIEVING HIGHER BCA GREEN MARK STANDARDS

- 227 BCA Green Mark awards, including 2 Green Mark Champions, given out this year
- Rising popularity of BCA Green Mark offices in Singapore

Singapore, 29 April 2014 – The Building and Construction Authority (BCA) will be giving out two BCA Green Mark Champion awards and a record number of 225 BCA Green Mark awards this year. This includes 78 Platinum and 47 Gold^{PLUS} awards, by far the highest number of projects to have achieved the higher Green Mark ratings since the scheme was launched in 2005. The BCA Green Mark awards will be given out during the 2014 BCA Awards on 22 May at Resorts World Sentosa.

Number of BCA Green Mark Platinum and Gold^{PLUS} awards given out each year



2 The high number of BCA Green Mark Platinum and Gold^{PLUS} awards is a clear indication of the rising awareness of the BCA Green Mark as well as the growing familiarisation and competency in green building solutions within the industry. In particular, the number of awards given to existing building projects with higher Green Mark ratings increased from 16 last year to 39 this year, an unprecedented increase of almost 150%, demonstrating the success of our 2nd Green Building Masterplan which

focuses on the greening of existing buildings. Stringent in its requirements, the BCA Green Mark scheme encourages the industry to adopt more sustainable building design and pushes them to constantly keep up-to-date with the latest and most efficient green building solutions.

Two BCA Green Mark Champions Unveiled

3 This year, the top BCA Green Mark Champion accolades will go to Keppel Land Limited and the Nanyang Technological University (NTU), for having shown strong commitment and corporate social responsibility in their efforts towards greening their buildings. To qualify for the Green Mark Champion Award, the developer or building owner must clinch at least 10 BCA Green Mark awards for their building projects including at least three Platinum and three Gold^{PLUS}.

Keppel Land Limited

4 In its pursuit to achieve higher environmental performance for its projects, Keppel Land has, since 2012, set a benchmark for all its new projects in Singapore to attain at least the BCA Green Mark Gold^{PLUS} rating. In addition, a further target was set for all existing commercial properties in Singapore to be retrofitted to meet at least the BCA Green Mark Gold^{PLUS} standard by 2015.

5 Keppel Land Limited has so far bagged 32 Green Mark awards, of which commercial buildings, Keppel Bay Tower and Ocean Financial Centre, have attained the Platinum rating. Ocean Financial Centre, notable for its iconic design and the Largest Vertical Garden as conferred by the Guinness World Records, is the first office development in Singapore's Central Business District (CBD) to achieve the highest BCA Green Mark Platinum rating in 2008. It features an assembly of 400m² of photovoltaic system on its roof, amongst the largest for a high-rise commercial building in the CBD.

6 Recognising the need for stakeholder engagement, Keppel Land has also endeavoured to spread the 'green mindset' through its 'Go Green with Keppel Land' and 'Tenants Go-green' outreach programmes to share and promote environmental awareness and green office practices. For instance, Green Fit-Out and Green Office Operation Guides are distributed to the tenants to encourage the use of energy efficient

lighting and fittings in the office space, as well as to provide practical guides on how tenants can adopt more environmentally friendly practices within their offices.

Nanyang Technological University

7 Nanyang Technological University (NTU) has in recent years been expanding its campus as well as retrofitting its existing buildings to higher BCA Green Mark standards. Under its strategic blueprint, Sustainable Earth is the pinnacle of NTU's Five Peaks of Excellence or research areas in which it aims to make a global mark. The greening of its buildings is one way that NTU is putting this idea into practice, by saving energy and reducing waste, as buildings take up large amounts of energy. To date, 18 building projects in NTU have been Green Mark-certified, out of which eight have attained the highest Platinum status.

8 The School of Art, Design and Media (SADM), which sits at the heart of the campus and recognisable by its signature sloping green roof, was one of NTU's first BCA Green Mark Platinum projects. Joining the list of top-tiered Green Mark projects this year are two residential halls for students which incorporate numerous passive design strategies. The halls are generally oriented in the north-south direction to promote natural ventilation and reduce solar heat gain in the hostel units. During the design stage, computational fluid dynamics (CFD) simulations were carried out to identify the effective layout and the optimal size of the windows within a unit. The windows will also be equipped with a double louvre system and the doors designed with operable panels. These features will help to ensure good thermal comfort within the units.

9 Another NTU's Platinum project is the eight-storey Learning Hub located at the South Spine which is due for completion later this year. The building makes use of passive displacement ventilation, a natural air distribution strategy that relies on heat transfer and convection to draw cool air from the floor up towards the occupied space. This removes the need for mechanical distribution fans, saving energy and cost as a result.

10 Besides buildings, NTU also has plans to pursue the BCA Green Mark for District certification for its campus. The BCA Green Mark for District scheme promotes and recognises environmentally friendly and sustainable practices in master planning, design and implementation of district developments, with emphasis on energy and

water efficiency of infrastructure and public amenities, environmental planning, green buildings and green transport. It also places emphasis on the need to engage stakeholders and community in the district, through soliciting of feedback and evaluation of ideas to seek areas for improvement. Based on past award winners, BCA Green Mark for District projects are likely to achieve a 10 – 40% energy savings and more than 40% of water savings.

More BCA Green Mark Offices in Singapore

11 When the BCA Green Mark scheme was first mooted in Singapore, its focus was on the 'hardware', to improve the energy efficiency of buildings. The BCA Green Mark has since evolved to look into the 'hardware', placing greater emphasis on users' behaviour. To facilitate this, user-centric Green Mark schemes have been introduced in recent years, such as the BCA Green Mark for Office Interior, Green Mark for Restaurants and Green Mark for Supermarkets. These schemes aim to encourage users and occupants to adopt more environmentally friendly features and sustainable practices in their premises.

12 In fact, green offices are fast gaining popularity in Singapore. Since the launch of the BCA Green Mark for Office Interior scheme in 2009, the number of offices that are assessed under the scheme has risen from four in 2009 to 98 today.

13 The Credit Suisse office, located in One@Changi City, a Green Mark building, is one of the offices receiving the Platinum award this year. Besides the use of environmentally friendly fittings as well as energy-efficient lighting and electrical appliances, Credit Suisse also adjusted its air-conditioning and lighting for different zones within the office. Its flexible hot-desking system within an open layout allows staff to choose their preferred seat where they can experience the ideal temperature and lighting at different times of the day. This helps reduce the need to further warm or cool different parts of the office to meet the preferences of different staff.

14 BCA's Chief Executive Officer, Dr John Keung, said, "All of us have a role to play in reducing carbon emission from buildings especially when buildings consume about one-third of Singapore's total end-use electricity. Going green provides a cost-effective win-win solution for businesses as it not only allows them to do their part for the environment by cutting down on energy consumption, but more importantly create a

healthier and better quality working environment for the employees. BCA, through its user-centric Green Mark schemes, will continue to encourage more businesses and occupants to make conscious efforts in adopting environmentally friendly features and practices at their workplaces. We also urge more building owners, developers and master planners to reach for the higher Green Mark ratings and to set their sights on the BCA Green Mark Champion and Platinum Champion status to firmly anchor themselves as sustainability champions in our built environment.”

15 Singapore has set an ambitious target to green at least 80% of all buildings in Singapore by 2030. To date, there are about 2,000 BCA Green Mark building projects in Singapore, translating to about 24% of the total gross floor area.

Issued by the Building and Construction Authority on 29 April 2014

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.

Annex A

BCA Green Mark Awards 2014

BCA Green Mark Champion	2
BCA Green Mark Platinum	78
BCA Green Mark Gold ^{PLUS}	47
BCA Green Mark Gold & Certified	100
Total	227

About the BCA Green Mark Scheme

The BCA Green Mark scheme was launched in 2005 as a key strategic programme to raise the awareness of sustainable and environmentally friendly buildings. It evaluates buildings for their environmental impact and performance. The benefits of BCA Green Mark buildings include cost savings resulting from efficient use of key resources such as energy and water, leading to lower operational and maintenance costs. Other less tangible benefits include enhanced occupant productivity and health due to good indoor environmental quality.

Buildings are assessed under the following criteria:

- Energy Efficiency
- Water Efficiency
- Sustainable Management and Operation
- Indoor Environmental Quality
- Other Green Features

Under the assessment system, points are awarded for incorporating environmentally friendly and sustainable features which are better than normal practice. The total number of points obtained translates to the respective award ratings of Certified, Gold, Gold^{PLUS}, and Platinum in ascending order of merit.

BCA Green Mark Champion Award 2014

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 achieve a substantial number of Green Mark buildings at Gold level and higher.

There are two categories for the award:

- BCA Green Mark Champion
- BCA Green Mark Platinum Champion

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

Key Assessment Criteria

Total Number of Buildings Rated	BCA Green Mark Champion	BCA Green Mark Platinum Champion
BCA Green Mark Gold & above	At least 10	At least 50
BCA Green Mark Gold ^{PLUS}	At least 3	At least 15
BCA Green Mark Platinum	At least 3	At least 15

In 2014, there are two BCA Green Mark Champions this year, namely, **Keppel Land Limited** and **Nanyang Technological University**. There is no Green Mark Platinum Champion.

BCA Green Mark Champion 2014 - Keppel Land Limited



Ocean Financial Centre, Platinum, 2008



Keppel Bay Tower, Platinum, 2014



Bugis Junction Towers, Platinum, 2014



Corals at Keppel Bay, Gold^{PLUS}, 2013

Key Achievements

BCA Green Mark Platinum	4
BCA Green Mark Gold ^{PLUS}	5
BCA Green Mark Gold & Certified	23
Total	32

As a global citizen, Keppel Land recognises that resource efficiency is not only its responsibility, but also makes good business sense.

In 2014, Keppel Land was listed in Corporate Knight's prestigious Global 100 Most Sustainable Corporations in the World. The Company was ranked 17th, placing it first in Asia and among real estate companies worldwide.

The Company adopts a proactive approach towards environmental management and protection to create a sustainable future. Keppel Land is dedicated to develop properties that improve the quality of life of communities across Asia through integrating sustainability into our business operations.

For more information on Keppel Land, please visit www.keppelland.com.

For more information about each of the BCA Green Mark buildings and their green features, please visit www.greenmark.sg

BCA Green Mark Champion 2014 - Nanyang Technological University



School of Art, Design and Media, *Platinum*, 2010



Residential Halls at Nanyang Drive, *Platinum*, 2012



Learning Hub at South Spine, *Platinum*, 2012



Residential Halls at North Hill, *Platinum*, 2014

Key Achievements

BCA Green Mark Platinum	8
BCA Green Mark Gold ^{PLUS}	1
BCA Green Mark Gold & Certified	9
Total	18

A fast-rising global university, NTU is a leader in sustainable research with over \$1.2 billion in competitive funding. Under its strategic blueprint, Sustainable Earth is the pinnacle of NTU's Five Peaks of Excellence or research areas in which it aims to make a global mark. The others are Future Healthcare, New Media, Innovation and the Best of East and West.

NTU's lush green campus is a living laboratory for sustainability. Centres at NTU conducting sustainability research include the Earth Observatory of Singapore, Singapore Centre on Environmental Life Sciences Engineering, Nanyang Environment & Water Research Institute, and Energy Research Institute @ NTU.

The centerpiece of NTU's campus is the award-winning building that houses the School of Art, Design and Media with its signature sloping green roof.

For more information on NTU, please visit www.ntu.edu.sg.

For more information about each of the BCA Green Mark buildings and their green features, please visit www.greenmark.sg

BCA Green Mark for Office Interior

The BCA Green Mark for Office Interior is BCA's initiative to promote and recognise environmentally-friendly and sustainable practices of office tenants.

Office buildings make up a significant percentage of the building stock in Singapore. Such buildings may be multi-tenanted, hence the way individual tenanted spaces are operated and maintained may not always be controlled by the building owner.

The BCA Green Mark for Office Interior complements the BCA Green Mark for Buildings by encouraging individual office tenants within buildings to be sustainable. The scheme is applicable to both existing and new offices that have or have not undergone renovation.

The scheme, launched in 2009, has since been gaining momentum with the industry, with its take-up rate being on the rise each year. Offices are evaluated under the following criteria:

- Energy Efficiency
- Water Efficiency
- Sustainable Management and Operation
- Indoor Environmental Quality
- Other Green Features

Credit Suisse AG (Green Mark for Office Interior, Platinum)



Tenant/Owner	Credit Suisse AG
Architect	HASSEL Design Pte Ltd
Contractor	Shimizu Corporation
Facility Manager	Confluence Project Management
M&E Consultant	BESCON Consulting Engineers Pte Ltd
Project Manager	Confluence Project Management Pte Ltd
Landscape Consultant	Ecoflora Pte Ltd
Acoustic Consultant	Hewshott Pte Ltd
Lighting Consultant	iLAB Pte Ltd
Commissioning	AT Advanced Technology Asia Pacific Pte Ltd
ESD Consultant	KAER Pte Ltd

Key Features:

- Zoning of air-conditioned and lighting areas and 100% flexible smart working electronic desk search system, and the use of thin clients result in significant energy savings during low usage period.
- Use of energy efficient LED lighting throughout the office results in an average of Lighting Power Budget (LPD) of 8.2 w/m² (> 40% energy savings).
- Extensive use of environmental friendly and reused products, finishes and furniture.
- Motion sensors are applied throughout the office at >90% of the GFA to eliminate unnecessary energy consumption. Task lighting also allows individuals to control the lighting brightness.
- More than 97% energy star equipment, 4-tick fridges, AAA dishwasher. Sleep modes are applied to >90% of the equipment.
- Real time monitoring and live display of energy and water consumption with green tips and user guides are available for individual user to download and track.
- WELS-excellent tenant water fittings, remote SMS messaging for leak detection, drought tolerant plants, and NEWater provision reduce potable water consumption.
- Open stairs and escalators with sleep mode function increase inter-level interaction and reduce burden on lifts.