

MEDIA RELEASE

PASSION FOR CREATING SUSTAINABLE BUILT ENVIRONMENT NETS AWARDS FOR 12 INDIVIDUALS

New award category to recognise facilities managers for their role in championing green building management

16 May 2014 – Twelve outstanding individuals in the built environment sector will receive the prestigious BCA-SGBC Green Building Individual Awards at the annual BCA Awards 2014 held at Resorts World Sentosa on 22 May 2014.

2. The BCA-SGBC Green Building Individual Award accords recognition to individuals from across the building and construction value chain for their consistent contribution and outstanding achievements in driving sustainability in the built environment.

3. In line with the national push towards effective and efficient management of green buildings, a new category – Green Facilities Manager of the Year – was introduced this year to recognise facility management professionals who have shown strong commitment and contribution towards greening and optimising the operation of existing buildings. The two winners of this new category are:

Green Facilities Manager of the Year

1. Mr Anthony Goh, Senior Vice President of Property and Facilities Management, City Developments Limited (CDL)
2. Mr Lim Tow Fok, General Manager, Keppel Land International Limited

4. The other winners of the BCA-SGBC Green Building Individual Awards are:

Green Advocate of the Year

3. Mr Vincent Low, Vice-President, G-Energy Global Pte Ltd

Green Architect of the Year

4. Mr Alan Tan, Director, Environmental Sustainability Research, Housing and Development Board

Green Architect of the Year

5. Mr Tan Shao Yen, Managing Director, CPG Consultants

Green Engineer of the Year

6. Er. Patrick Foong, Managing Director, e2green Pte Ltd

Green Innovator of the Year

7. Dr Sujit Ghosh, Chief Executive Officer, Holcim Limited

Young Green Advocate of the Year

8. Mr Jason Pomeroy, Principal, Pomeroy Studio

Green Building Individual Commendation Award

9. Dr Ng Khee Yang, Managing Director, Eco-Applications
10. Er. Lee Boon Woei, Director (Environmentally Sustainable Design), DP Architects
11. Er. Richard Phua, Associate Director, Squire Mech Pte Ltd
12. Mr Martin Gui, Managing Director, Facility Link Pte Ltd

5. Congratulating the winners, Dr John Keung, BCA's Chief Executive Officer said, "The awards will help raise the profile of capable professionals and practitioners in the built environment sector. This year, we have a record 12 award recipients who impressed us with their passion and contribution in creating a sustainable built environment for Singapore. As outstanding industry practitioners, they will serve as role models for our younger generation and hopefully inspire them to join this sector and do their part in greening the built environment."

6. On green facilities and asset management, Dr Keung said, "Facilities and asset management functions are increasingly positioned at the forefront of business strategy today in many large and international corporations. Based on our study, Green Mark buildings can be at least 25% more energy efficient than non-Green-Mark buildings. Good facilities management will be critical to ensure that buildings continue to be energy efficient during their entire life span so that the building owner can derive savings from it and users can live and work in healthier buildings. The demand for competent green facilities managers will be further fuelled by an increase in urban population and green buildings as we move towards green growth."

7. As one of the two Inaugural Green Facilities Managers of the Year 2014, Mr Anthony Goh was instrumental in the introduction of sustainable facilities management initiatives, in line with CDL's mission to "Conserve as it Constructs". These include the green procurement guide, green lease guidelines and the iGreen committee, which looks at possible sustainability ideas for implementation within CDL commercial properties. A passionate green facility manager, he has actively shared his experiences through several outreach programmes to influence and engage stakeholders to embrace environmentally-friendly practices. Mr Goh has played a significant role in driving improvements in the environmental performance of CDL's commercial buildings through green facilities management and implementation of green innovation. CDL is one of Singapore's biggest landlords and has had 10 out of its 11 key commercial buildings here recertified to the BCA Green Mark Platinum tier. In addition, CDL's green buildings such as 11 Tampines Concourse and City Square Mall have earned international recognition, being the first LEED Platinum and Gold buildings respectively in Singapore under the Existing Buildings: Operations and Management category.

8. Similarly, the other Inaugural Green Facilities Manager of the Year 2014 award winner, Mr Lim Tow Fok, played a key role in leading sustainability efforts at Keppel Land. His efforts include initiating the formation of a Tenants' Green Committee to encourage and facilitate sharing of eco-practices in the office amongst tenants of Keppel Land's commercial properties, driving efforts that led to the publication of a handbook of useful green tips for tenants, as well as organising outreach activities to spread the green message. Under his strategic guidance, Keppel Land formulated an Environmental Operation Plan for all buildings. These individualised plans outline environmental targets and programmes to yield measurable reductions in waste, energy and water consumption, and are also aligned with the company's green procurement guidelines. A leading green developer, Keppel Land has been conferred a total of 10 Green Mark accolades, including the prestigious Green Mark Champion Award 2014.

9. Er. Ng Eng Kiong, co-chairperson of the assessment panel and President of the Singapore Green Building Council (SGBC), commended the winners for their dedication and efforts in driving the green building movement. He said, "Sustainable development is made possible through collaborative partnerships and collective actions of individuals. SGBC strongly believes in the need to build a community of green professionals to ensure knowledge continuity and to sustain the industry's good efforts. I offer my heartiest congratulations to all winners who are exemplary in their work and actions. SGBC looks forward to having our award winners on board and together, inspire the next generation with their passion and enthusiasm for the built environment."

10. For more information about the award recipients, please refer to the fact sheets attached in Annexe A.

Jointly issued by the Building and Construction Authority and Singapore Green Building Council on 16 May 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.

About Singapore Green Building Council

Singapore Green Building Council (SGBC) was set up in 2009 and is an established member of the World Green Building Council (WGBC). SGBC's mission is to propel Singapore's building and construction industry towards environmental sustainability. SGBC certifies products and services through its Singapore Green Building Products & Services Certification Scheme. The certification scheme complements the Building and Construction Authority (BCA)'s efforts in driving environmental sustainability towards the Singapore 2030 Sustainable Blueprint.

SGBC has 430 corporate members and has certified over 600 green products and services. For more information, visit www.sgbc.sg.

Annexe A: Fact sheets on Green Building Individual Award winners

1. Green Facilities Manager of the Year



Anthony Goh (吴美祥)
Senior Vice President of Property and Facilities Management
(高级副总监, 产业与设施管理)
City Developments Limited (城市发展有限公司)

His work:

With his passion for facilities management in the built environment, Anthony's enthusiasm has influenced his team and stakeholders in spreading the practice of sustainability.

In 2005, his pioneering spirit led the company to be one of the first developers to achieve the 1st BCA Green Mark Gold Award for Existing Buildings. To date, 10 existing commercial buildings have achieved Green Mark Platinum Award, including a Green Mark Gold Award for The Exchange Towers in Thailand. In addition to the local achievements, he inspires the team to meet international benchmarks by attaining Platinum and Gold LEED-EBOM® Accolades for Tampines Concourse and City Square Mall respectively.

Anthony is also a strong advocate of "Performance 360"—a holistic approach to green facility management incorporating service quality management (ISO 9001); environmental management (ISO 14001); workplace safety management (OSHAS 18001); and energy management.

Keeping in mind the ever-changing technological improvements in the industry, Anthony takes up the challenge of exploring new innovative ideas and products frequently.

For his many contributions, he was accorded with the CDL Special Recognition Award for his green leadership in facilities management. As a true Green Facility Manager, Anthony strives to drive collaboration, stay ahead of competition and lead his team towards sustainability goals.

His projects:

As the Head of the Department for Property & Facility Management – Investment Properties (PFMIP), Anthony oversees 19 commercial properties, totalling to 513,949.38m² GFA, including four overseas properties.

Under his leadership, CDL's commercial portfolio has achieved a total of 10 Green Mark Platinum Awards, one Green Mark Gold^{PLUS} Award, 2 ASEAN Energy Awards, 1 LEED-EBOM Platinum Award, 1 LEED-EBOM Gold Award, and 1 NEA Energy Efficiency National Partnership (EENP) Award in the local built environment.

His overseas contribution includes The Exchange Tower, which is the first existing commercial building in Bangkok, Thailand to achieve the Green Mark Gold Award.

As an effective leader aligned to the corporate CSR vision, Anthony has envisioned a 10-year green programme which encouraged carbon savings throughout the commercial portfolio.

2. Green Facilities Manager of the Year



Mr Lim Tow Fok (林道福)
General Manager, Property Management and Knowledge Management (总经理)
Keppel Land International Limited (吉宝置业)

His Work:

While the primary role of a facilities manager includes ensuring the smooth, efficient and cost-effective operation of buildings, above and beyond that, Tow Fok strongly believes professionals in this field should also make their choices guided by the principles of sustainability.

As General Manager of Keppel Land's Property Management and Knowledge Management unit, Tow Fok provided strategic guidance which led to the formulation of an Environmental Operations Plan for all buildings under Keppel Land's management. These plans outline specific environmental targets on Green Mark certification as well as energy, water and waste reduction, which dovetails the company's overall carbon management plan to reduce carbon emissions intensity by 16% below 2010's emission level by 2020.

Tow Fok continues to spread the green message and influence tenants and occupiers in the commercial and residential properties managed by Keppel Land, to live, work and play sustainably. Under his leadership, a Tenants' Green Committee was formed in 2013, which serves as a platform to involve key stakeholders as well as encourage the adoption of sustainable operations and facilitate sharing of best practices.

At the industry level, Tow Fok also contributes to the global green building scene. He participated in the formation of the inaugural World Green Building Council Corporate Advisory Board. He is also a member of the Singapore 3rd Green Building Masterplan Advisory Group and is a member of BCA's International Panel of Experts, to help chart new directions for a sustainable built environment in Singapore.

His Projects:

Tow Fok plays an instrumental role in driving green initiatives and building consensus among Keppel Land's various stakeholders. Managing about 2.5 million square feet of commercial space in Keppel Land's buildings, he strives to constantly influence these stakeholders to take into account environmental considerations during decision-making.

He is currently working on introducing voluntary green pledges as a means for building owners to work with tenants to meet certain environmental standards. At the same time, he is also exploring ways to encourage tenants to improve their environmental performance by implementing measures such as replacing existing lightings with more energy-efficient lamps. Other ongoing projects include solar leasing, organising outreach activities to spread the green message and providing complimentary Green Mark (Office Interiors) gap analysis for tenants to encourage them to apply for Green Mark certification so as to improve their office environment as well as reduce operational cost.

Recognising that his own efforts alone will have limited impact on the environment, he seeks to influence as many individuals as possible, and make a significant difference together. This belief and his 'Can-Do!' spirit will continue to motivate him as he contributes to the built environment.

3. Green Advocate of the Year



Mr. Vincent Low (罗禄强)

Vice President (Business Development) (副总裁, 业务发展)

G-Energy Global Pte Ltd (绿能环球私人有限公司)

His work:

Having spent years helping building owners save electricity through engineering solutions mainly for their ACMV systems, Vincent saw that a more sustainable approach would be for developers to design and plan for their new developments with sustainability and energy efficiency in mind from day one. He advocates a three-pronged approach - converting energy usage in existing buildings, designing the development with considerations to sustainability, and planning for major energy usage prudently.

Vincent led his team to a series of better than required chiller system efficiency in the firm's projects and also made a commitment on behalf of G-Energy Global that should his team be selected to handle energy optimisation for a particular project, he would back his team up to guarantee the committed system efficiency. This in turn created a new trend in the industry, seeing more tenders called that requires performance guarantee.

The other passion of Vincent is to remotely monitor the energy consumption of Green Mark buildings to ensure that the features designed are maintained and improved over time. To him, Green Mark is more than just a score card and Green Mark is not a moment of glory or a certificate to be earned, only to be set aside and forgotten once the onslaught of regular activities set in.

G-Energy Global has invented a fully automated system that will allow building owners to monitor energy usage levels hour by hour, without having to leave their desks. The RMS (remote monitoring system) is co-developed with researchers from Ngee Ann Polytechnic under Spring Singapore's Innovation Voucher Scheme (IVS) and is the brainchild of Vincent.

His projects:

By the end of 2005, three buildings owned by City Developments Limited (CDL) were awarded the NEA Energy Smart Building Labelling. The following year, work started on City Square Mall, the first eco-mall in Singapore. The mall achieved Green Mark Platinum Award under New Non-Residential Building category in 2007.

In the interim, Keppel Land International Limited decided to jump onto the sustainability bandwagon with G-Energy Global. That resulted in Ocean Financial Center, their iconic office development in Singapore, to receive the BCA Green Mark Platinum Award (2008). This also sparked off an energy saving and sustainable trend within Keppel Land which led to KFMO setting up her own energy and sustainable team. Needless to say, where collaboration to conduct energy audit is required, G-Energy is a default choice.

Tokio Marine achieved the BCA Green Mark Gold^{PLUS} award in the same year and pushed the standards higher with them being the building with the best chiller plant system efficiency in Singapore. Tokio Marine went on to become the first runner up for the prestigious ASEAN Energy Award in 2012, joining four other clients who received the award in previous years.

In 2006, BCA launched a \$20 million Green Mark Incentive Scheme for Existing Buildings (GMIS-EB). Vincent's approach to CapitaCommercial Trust was for them to be granted the maximum amount which is only possible with a BCA Green Mark Platinum Award. To this end, Six Battery Road became the first existing building in Singapore to achieve Green Mark Platinum Award in 2010. With this, Vincent did not only convinced CapitaCommercial Trust that it was possible for an existing building to achieve Green Mark Platinum, but also proved to building owners in Singapore that their existing property could be sustainable.

When BCA's enhanced GMIS-EB was launched, Vincent took the opportunity to educate and influence individual MCST members towards having a sustainability mindset. Within months, more than 20 projects were submitted by G-Energy Global that applied for enhanced GMIS-EB, which included North Bridge Centre and Bukit Timah Shopping Centre. Through this exercise, two longstanding developers in Singapore, Far East Organization and Winmax Investment (a subsidiary of Wing Tai Holdings), began their Green Mark and sustainability journey with G-Energy Global.

4. Green Architect of the Year



Alan Tan Hock Seng (陈福成)

Director (Environmental Sustainability Research) [处长 (环境持续性研发)]
Housing and Development Board, Building Research Institute
(建屋发展局建设研发署)

His work:

An architect by training, Alan strongly believes that in any architectural design, a building has to go beyond its aesthetics and functionality. It must serve as a response to the present and future built environment. And this can only be achieved if the architect is open to green initiatives to complement the building design. His work as a Director (Environmental Sustainability Research) in HDB allows him to put this belief into practice. He spearheads key sustainability initiatives in HDB estates to benefit the residents living there. During his course of work, he has made important contributions to sustainable development, green innovations/solutions on energy efficiency (passive design), greenery, water efficiency, resource and waste management.

His projects:

Alan was involved in many major HDB projects. His latest contribution was to drive sustainability initiatives in Punggol Eco-Town. Highlights include:

Treelodge@Punggol – This is HDB's 1st eco-precinct which serves as a demonstration project of an eco-friendly public housing development that enables the community to embrace comfortable green living while striving for best practices in meeting environmental needs and targets. Alan and his team test-bedded various green features to achieve environmental targets in the areas of enhanced site ecology, energy efficiency, water efficiency, waste management, green construction and site management. These green features have since been introduced for all new Punggol developments in Sep 2011 and subsequently extended to all new public housing projects in Jan 2014.

My Waterway@Punggol – This is Singapore’s first man-made waterway, conceptualised to meander through Punggol town between Punggol Reservoir and Serangoon Reservoir. As the Project Director for the waterway, Alan sees the waterway as an eco-corridor where various research studies along the waterway are carried out to mitigate Urban Heat Island Effect, promote biodiversity and improve the water quality, bringing about greater sustainability and excitement to enhance liveability for Punggol residents.

Alan is also heavily involved in R&D and some of them have been adopted for public use. Examples include an extensive in-house designed roof top greening and vertical green system which can be easily adopted in existing buildings; a centralised chute system for easier disposal and collection of recyclables and grey water recycling systems.

Knowledge Transfer

To put on record HDB’s years of experience and knowledge in sustainable development, Alan led a team to publish ‘The Green Housing Book’. The objective was to share with industry partners the green practices and features adopted for public building design.

Alan also shares his passion in sustainable development at local and overseas platforms and seminars. Alan sits on various committees that promote environmental sustainability, such as the Advisory Committee in BCA Green Mark Initiatives, Panel Judge for Greenwave Projects, and Land & Liveability National Innovation Challenge, to help guide the industry towards planning and designing for sustainable development.

5. Green Architect of the Year



Tan Shao Yen (陈绍彦)

Managing Director (董事总经理)

CPG Consultants Pte Ltd (CPG咨询有限公司)

His work:

Trained as an architect, and currently the Managing Director of one of the largest multi-disciplinary consultancy firms in Singapore, Shao Yen leads a community of established professionals and energetic, emerging talents in providing built environment design and solutions.

The Singapore government, BCA, and SGBC have come in long way in providing an excellent framework and infrastructure in establishing the long-term vision, mission, intermediate roadmaps, and short-term goals towards achieving a sustainable built environment. How would these objectives and goals be attained? This is where planning, design, and solution-finding are vital. As a proponent of the Pareto Principle, Shao Yen believes that a small investment in well thought-out design would positively and hugely impact the success of the eventual outcome. Herein are the challenges: the complexity of modern built facilities, in a fast paced society, confronted by resource constraints and rapid technological advancements, has all too often hampered the design process and consequently its outcome. To address such challenges, Shao Yen believes in and promotes the craft of design leadership and management, as well as in adopting an open, collaborative, integrative, and trans-disciplinary approach to design and solution-finding that brings value to users, organisations, societies, and the environment.

Shao Yen is also a Green Mark Professional, and he believes in establishing the key sustainability principles early, as part of the concept formulation process. The design concepts will need to be developed and validated by using the relevant evidence-based design tools, including BIM, simulation software and modeling, etc. Throughout the process, inputs from stakeholders including clients, users, allied design professionals, and where necessary, economists, sociologists, and biodiversity experts are sought, so as to integrate the diverse knowledge and expertise into a holistic built environment solution.

Shao Yen's belief in the integrative design approach was informed by his study and research that culminated in his dissertation, "The Practice of Integrated Design: The Case Study of Khoo Teck Puat Hospital, Singapore", undertaken as part of the BCA-University of Nottingham MSc Sustainable Building Design programme.

Shao Yen shares his aspiration through contributing to education programmes, such as giving lectures and talks to universities and schools, as well as through active roles in professional bodies, such as the Board of Architects and Singapore Institute of Architects.

Undertaking Projects as a Learning Organisation:

Shao Yen believes that project-based practice will need to be grounded on fundamentals of project discipline, management, and delivery, with a relentless pursuit to ensure that every project is a success. Concurrently, consultancy practice must strive to be a learning organization in which knowledge learnt in previous projects will need to be systematically captured, reflected upon, shared with fellow practitioners through communities-of-practice, and fed forward to the following projects. Practice is hence also a form of continuous practice-based research. These are demonstrated in a few green projects that Shao Yen and his colleagues had undertaken:

- 1. Gardens-by-the-Bay, Bay South and New Park (2008-2012, Both obtained Green Mark Platinum): Integrative Design**
In this project Shao Yen led the environmental sustainability design team in co-developing the project's very comprehensive sustainability framework with the project client, NParks/Gardens-by-the-Bay. It supported the client's grand vision of achieving the Triple Bottom Lines (Planet, People, Environment) through the integration of the energy, water, ecology, biodiversity, indoor environmental qualities, materials, environmental protection, and design/development/construction processes.
- 2. Yong Loo Lin School of Medicine MD1, NUS (2010-ongoing, Green Mark Platinum): Integrative Design & Green BIM**
In this high-rise laboratory project, the safety and stringent operational requirements of laboratory use had to be fulfilled through energy-efficient design. The project team undertook a robust, multi-disciplinary approach to meet the challenges. Some of the process taken to achieve such outcomes include: The extensive use of computer simulations to test design options, such as façade studies, energy consumption modeling, ventilation studies, etc. This project was also undertaken in multi-disciplinary BIM to facilitate the design process and coordination.
- 3. NTU Learning Hub (2011-ongoing, Green Mark Platinum): Integrative Design, Green BIM & Innovative Construction Modularity**
The NTU Learning Hub is a building housing collaborative tutorial rooms. Through an integrative approach, many of the passive green design strategies were conceived early with the architectural concept design, and are supported by bold, innovative, energy-efficient active solutions. BIM is again used as the process and documentation tool for the Project. It has contributed to the modular construction, despite the project's unorthodox, organic form.

6. Green Engineer of the Year



Er. Patrick Foong Keng Yuen (冯敬源)
Managing Director (董事经理)
E2Green Pte Ltd

His work:

Er. Patrick Foong is a Registered Professional Mechanical Engineer, Registered Inspector (M&E) for Fire Safety and a Qualified Energy Services Specialist. A substantial part of Er. Foong's 32-year career was in the transforming of commercial and office buildings into energy-efficient and environmentally-sustainable ones. Having worked as owner's representative, designer, facilities manager and energy consultant, Er. Foong fully appreciates what the stakeholders need and the difficulties they encounter in taking the "quantum leap" to go green.

Er. Foong is a sought-after speaker at green seminars and conferences both locally and in the region and have published several papers at international conferences. He participates actively in green-related committees and enjoys sharing his experiences in sustainable design & consultancy through teaching part-time.

Currently, he helms an accredited energy services company (ESCO), providing energy auditing & green consultancy, funds energy performance contracting solutions and distribution of eco-friendly products to the building industry.

His projects:

His strong grounding in engineering, coupled with his extensive experience, allow him to develop practical green solutions based on best practices with relative ease. Er. Foong is a strong advocate for reduction of demand, maximising of efficiency, harvesting of site energy, adopting green operations and maintenance practices and seeking out cost-effective renewable energy for long-term sustainability.

Er. Foong has helped many of the older mixed developments and shopping malls retrofit their central chilled water plants with highly-efficient alternatives and put in place reliable measurement & performance verification systems which meet BCA's Green Mark certification requirements. Some of them include: IMM@Jurong East, Tampines Mall, Wheelock Place, Rivervale Mall @Sengkang, Bodynits@Changi, etc.

At the new MOM@Bendemeer, a BCA Green Mark Platinum project, the chiller system plant efficiency was greatly improved as it was augmented by the use of a Thermal Energy Storage System (TES). Fanless Displacement Ventilation was a distinctive engineering feat at the Multi-Purpose Hall and a *grey* water system was employed to reduce the demand for potable water.

The MCST of the 40-year old Golden Mile Tower @Beach Road was glad that the mixed development had recently been awarded the Green Mark Gold certification. It also obtained a substantial grant under BCA's enhanced GMIS-EB Scheme. Similarly, for Bukit Timah Plaza, Er. Foong is now retrofitting the air-conditioning system at People's Park Complex and Sim Lim Square under energy performance contracts.

7. Green Innovator of the Year Award



Dr. Sujit Ghosh

Chief Executive Officer (首席执行官)
Holcim (Singapore) Ltd (豪瑞(新加坡)有限公司)

His work:

When the sand ban crisis hit Singapore construction industry in 2007, material prices shot up and many construction projects faced serious disruption. Dr. Ghosh explored alternative materials to replace natural sand to address this issue, and having understood the properties between sand and copper slag (a waste product from ship repair industry), he championed the utilisation of washed copper slag in concrete production.

The use of washed copper slag in concrete gives it higher resistance against water penetration and improves the durability of the structure. Washed copper slag also has relatively lower thermal conductivity, which decreases the heat flow through the concrete, and eventually reduces energy consumption for air-conditioning. Most importantly, the utilisation of washed copper slag addresses the environmental concern of the large amount of copper slag being landfilled every year in Singapore.

Dr. Ghosh continues to develop application-based solutions for the industry. One of the recent innovations is the new generation self-compacting concrete. He also got involved at the ground level to consult the application of the customized solutions to the needs of local project needs.

He believes that a significant part of sustainability rests in the future generation, and collaboration with academic institutions is the key to accelerate the realisation of sustainable construction. He has been working with NUS, NTU, and Future Cities Laboratories over the years to discuss innovation and its real-life application. It is his aspiration to see new generations of architects and builders embrace sustainable construction in their practices.

His projects:

To drive the application of the new generation self-compacting concrete (named Eascrete), Dr. Ghosh consulted the IES (Institute of Engineers) on the construction of a building wing of their office in Bukit Tinggi area. The area was surrounded by residential built-up area, and they wanted to minimise the noise level from construction activity. Eascrete was introduced as a solution into the site, and the construction work brought minimum disturbance to the neighbouring residences with the absence of continuous vibrating sounds from the vibrator for concrete placement.

In 2012, he initiated a collaboration with EDB in establishing Asia's first Centre of Excellence where energy- and resource-efficient solutions in the region can be further developed. The Centre would provide an excellent test bed platform for new inventions in the industry.

8. Young Green Advocate of the Year



Jason Pomeroy
Principal
Pomeroy Studio

His works:

Jason is the founding Principal of Pomeroy Studio, a firm of designers and thought leaders of sustainable built environments. His studio emphasises on green design from the macro-scale of the city to the micro-scale of the dwelling, and believes strongly in what he calls the 3D's – the ability to “Distil” the lessons from the past, to “Design” for the present, and to “Disseminate” the knowledge for future generations. Jason believes that a sustainable product can only be created if there is a sustainable process of design in place: a process he champions and calls “Evidence-Based Interdisciplinary Sustainable Design” [E-BISD]. Such a process balances a “Creative Vigour with an Academic Rigour” between green design innovation with commercial viability.

In addition to leading Pomeroy Studio, he lectures internationally and publishes widely. He is the author of “Skycourt and Skygarden: Greening the Urban Habitat” and “Idea House: Future Tropical Living Today” and is a special professor at the University of Nottingham, UK. He teaches the BCA Academy/Nottingham University MSc in Sustainable Building Design, and the Nottingham University MArch in Sustainable Tall Buildings. He sits on the editorial board of the Council of Tall Buildings and Urban Habitat and is an active member of the Singapore Green Building Council’s Green Roof Taskforce. Jason was a featured speaker at TEDx Singapore in 2012 and is also the host of “City Time Traveller”, a 12-part architecture travel series on Channel NewsAsia.

His projects:

Prior to establishing Pomeroy Studio, Jason had the privilege of working on landmark projects globally, including the London 2012 Olympic Masterplan, Trump Tower Manila (the tallest residential tower in the Philippines when completed in 2016), Vision Valley – an 80,000 acre network garden city in Malaysia; and the competition winning entry for the National Heart Centre Singapore, in collaboration with Ong & Ong. He also successfully wrote the research methodology and developed landscape guidelines based on the Green Plot ratio – necessitating research of 100 buildings in Singapore in collaboration with National Parks Board, URA, BCA, JTC, HDB and the University of Singapore.

But it was the design of the first carbon zero prototype of dwelling in Asia – the Idea House, that has been the catalyst for further progressive zero carbon developments, and was the first BCA Green Mark Platinum Award overseas for a landed property. He continues to advocate for the homegrown green assessment method's use overseas. The lessons learned from the Idea House have been developed further to create the BCA Green Mark Platinum Award winning B House, the first pair of carbon negative houses in Singapore. The scalability of his green design innovation is similarly reflected in a host of projects overseas in Indonesia, Philippines, Malaysia and Sri Lanka at block and city scale.

Jason believes strongly in giving back to society through education, and provides an opportunity for the best global sustainable design students to gain valuable experience by initiating the annual "Design for a Sustainable Future Award [DFSA] and the Pomeroy Studio Scholarship, as well as global speaking platforms such as at World Architecture Festivals where his design projects have been shortlisted.

9. Green Building Individual Commendation Award



Dr Ng Khee Yang (黄启扬博士)
Managing Director (董事经理)
ECO-Applications Pte Ltd (环保科技应用私人有限公司)

His work:

Khee Yang was trained as a Civil Engineer but ventured into water microbiology studies for his PhD in Civil Engineering. Microbial study was useful in his investigation into the “fate of selected microorganisms in sewage treatment”. This cross-disciplinary work started his interest in Environmental Engineering and the spirit of venture for answers using innovations derived from the multi-disciplinary approach. He had the opportunity to be part of the NEWater R&D team in 2000, and subsequently also principal investigator of several environmental-related industry projects.

Khee Yang thrives on solving real-world environmental issues with innovative and creative use of technology. About his green innovations, he said, “I get my inspiration from various sources. I keenly observe what is happening around me, such as the functioning of natural systems like different body parts, and draw on past experiences to give me ideas. Sometimes, I wake up in the middle of the night to jot down or sketch out some ideas on pieces of paper. Then, I will return to sleep again. Over the next few days, I will go to my workshop to personally fix up a first prototype of my idea, using simple materials such as cardboard, wood, springs, screws, bolts and nuts. From there, I would assess the working principles before proceeding further in my innovations.”

A keen believer in knowledge transfer, Khee Yang had shared his experiences with students in his capacity as a lecturer and Centre Director in Singapore

Polytechnic and now in his capacity as a part-time lecturer in Institutes of Higher Learning such as NTU, UniSIM, RP and SP.

As the Deputy Chairman and Technical Assessor of Singapore Accreditation Council's Singapore Laboratory Accreditation Scheme (SAC-SINGLAS) Technical Committee on Environmental Testing, Khee Yang has the privilege of sharing best Green practices with laboratory staff that he assessed.

His projects:

Khee Yang led a team to develop the innovative glass crusher machine for P&R Resource Management Pte Ltd. The crusher is part of an overall system to revolutionise the way waste glass is collected, processed and transported for recycling into new glass products. This innovation helps to conserve sand, recycle more waste glass so as to reduce the burden on our incineration plants and our limited landfill space at Semakau Landfill.

Khee Yang also worked on a project to demonstrate the feasibility to manufacture sand in Singapore by recovering concreting sand from excavated soil. Currently, soil from Singapore's excavation projects is being disposed of into dumping grounds daily. Under dire circumstances where sand supply is affected, such soil with high sand content can be recovered to augment the sand-scarce situation until the situation stabilises. The success of this project will open up options for alternative sand sources and help ensure the sustainability of our sand supply. However, it is noted that the cost of manufacturing sand from excavated soil is high.

Khee Yang is the lead inventor of the Eco-ffin[®] which was successfully demonstrated in a national emergency exercise. Made mainly of carton paper and a wood base, the Eco-ffin[®] is structurally designed and has been successfully used in cremations in Singapore. The innovative use of paper not only makes it more environmentally friendly, it also provides an avenue for emotional healing and closure as family members and friends pen their last words on the Eco-ffin[®]. His invention is also meant to speed up the cremation time, thereby delaying or avoiding the need to expand on cremation facilities.

In July 2013, Khee Yang took a bold step to leave SP to venture into private practice by using his company ECO-Applications Pte Ltd to work with his project partner, Mr Derrick Tan, on enzymatic solutions for odour treatment. Using natural enzymes produced from plants and fruits, activated natural enzymatic mist is used to break down foul air pollutants, resulting in fresher air over time and improving the Indoor Air Quality in homes, offices, hotels and factories.

Khee Yang also works with GardenV to explore the use of waste sludge (which is currently shipped to Semakau Landfill) in concrete to develop Gabion walls for Green Building Projects that GardenV tenders.

10. Green Building Individual Commendation Award



Lee Boon Woei (李文伟)
Director of DP Sustainable Design 董事（可持续环境设计）
DP Sustainable Design （DP可持续设计）

His work:

Boon Woei has been practising sustainable design since 2006. He believes that green design is not a process; rather, it is the result of a design optimisation process. He is a strong proponent of the adoption of computational simulation tools early in the building design process. As an engineer working in an architecture firm, Boon Woei bridges the two disciplines and strives to ensure a seamless translation of passive design strengths to tangible energy savings in the building energy system.

Under his leadership, DP Architects' Environmentally Sustainable Design Unit evolved into full-fledged company, DP Sustainable Design, in 2013. Heading a team of architects, engineers and building analysts, Boon Woei aims to drive the sustainable design process further by making design-performance simulations an integral part of architecture design.

Boon Woei is an advocate of innovations that push the boundaries of building performance and actively looks out for opportunities to test-bed green innovations. He heads a government-initiated research-and-development focus group that evaluates green technologies and makes recommendations on their application in the Singapore context.

His projects:

Boon Woei has steered numerous projects of varying typologies to achieve the top Green Mark ratings – among them Singapore University of Technology and Design, Singapore Institute of Technology at Ngee Ann Polytechnic and Singapore Polytechnic, MediaCorp complex, SBF Center, Paya Lebar Square, eCO condominium and The Topiary condominium – securing DP Architects' position as one of the leading architecture firms with the highest number of projects rated BCA Green Mark Gold^{PLUS} and Platinum.

He recently completed Singapore's first zero-energy green gallery, CDL Green Gallery at Singapore Botanic Gardens, where he took on dual roles of ESD Consultant and Mechanical Engineer. The gallery's eco-innovations include the use of a prefabricated modular system and hempcrete. It utilises solar power to satisfy its energy needs; and

has an active energy monitoring system that measures the 'eco-pulses' of the gallery's operations.

Boon Woei also participated in BCA's pilot Green Mark Healthcare Scheme where the preliminary evaluation for Sengkang General and Community Hospitals contributed to BCA's development of the relevant assessment benchmarks for the healthcare facility category.

11. Green Building Individual Commendation Award



*Er. Richard Phua Teck Meng (潘德明)
Associate Director (副董事)
Squire Mech Pte Ltd (思迈新加坡)*

His Work:

Er. Phua has great passion and drive in the Green Building movement. He strongly believes that reduced energy consumption is vital to the future evolution of the world and endeavors to contribute to this global objective.

Throughout his career, he has been advocating strongly and fervently sustainability through collaborations with Architects, Contractors and others in the industry. He actively participates, inspires and guides young engineers in the Green Movement through active suggestions and implementations. adopting new energy efficient fittings, lighting control sensors for indoor environment and carpark, efficient air conditioning system using High Delta T, low flow design for chiller plant system, suggestions to improve facade design to reduce thermal transfer into buildings and improving natural lighting provisions, advising optimal location of M&E plants to reduce energy consumptions for development of projects.

His Projects:

Apart from contributing as a Consultant in Projects that obtained Green Mark Gold^{PLUS} and Platinum status, ITE College Central, BCA Academy and Caterpillar Remanufacturing Factory, he also spearheaded the Green Mark Committee within the office. With his involvement in the office Green Mark assessment, Squire Mech had upgraded from Gold to Gold Plus Status.

He is currently spearheading the Green Mark committee and heading the organization's Innovation Committee, researching various sustainable M&E products, System Design, and BIM Implementation.

12. Green Building Individual Commendation Award



Mr. Martin Gui (魏剑璋先生)
Managing Director (董事长)
Facility Link Pte Ltd

His work:

The focus of an interior fit-out specialist is primarily on effective, timely project delivery. In commercial office spaces, these values are never more critical. However, in building a company focused on sustainability, Martin has also inculcated corporate social responsibility as another guiding principle of how Facility Link operates. For his efforts in building a forward-looking and socially responsible organisation, he was awarded several entrepreneurship awards, most recently the Ernst and Young Entrepreneur of the Year Award for Commercial and Industrial Services in 2012.

Apart from the run-of-the-mill CSR events, Martin has also walked the talk on sustainable premises. His office, built as a showcase for clients to visit, is Green Mark Gold^{PLUS} and LEED Platinum certified. This showcase allows Facility Link to better explain the green features that clients can opt for, and provides an overview of how green installations can benefit users in the long run.

The office, located in an industrial enclave, is also the first of its kind to be green certified. The office was also intended to be an example of how sustainable premises can benefit the many SMEs with offices located in such areas. He sees this drive to the small and medium enterprises as the next logical progression for the green building industry, and one that will greatly boost the overall sustainability of the built environment in Singapore.

His projects:

Martin's involvement in green building initiatives started in 2007, with the construction of a sustainable office in Shanghai, which he managed. With that first step in sustainability, Martin spearheaded his fit-out team to participate in the BCA Pilot Project for the Green Mark for Office Interiors. Since those initial projects, his company has constructed over ten high-specification offices that have garnered the BCA Green Mark for Office Interiors award, including the 140,000sqft office for Unilever at Mapletree Business City and the 230,000sqft office for BHP Billiton at the Marina Bay Financial Centre Tower 2. Both were certified Platinum.