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Innovative Green Building Technologies and Solutions Take Centre Stage at the Singapore Green Building Week 2014

The sixth edition of the Singapore Green Building Week with 17 co-located green building events gathers more than 22,000 green building industry practitioners and participants from over 50 countries in a concerted showcase of commitment towards climate change

Singapore, 1 September 2014 – More than just physical structures constructed out of stone and concrete, buildings today are a complex network of structures and systems. With today's proven and advanced technologies, smarter building structures offer the greatest potential to counter climate change. They not only help reduce energy consumption and costs, but also create a more comfortable and healthy environment for its occupants. Increasingly, new building technologies are going beyond the four walls, establishing connections with the smart power grid and interacting with other buildings and infrastructure to enable new levels of energy-efficient performance.

2. Such innovative green building solutions and technologies will be on showcase during the **Singapore Green Building Week 2014** (SGBW). The week-long series of activities dedicated to creating a more sustainable built environment, was officially opened by Minister for National Development, Mr Khaw Boon Wan today at the Marina Bay Sands Expo & Convention Centre in Singapore. Organised by the Building and Construction Authority of Singapore (BCA) in partnership with Singapore Green Building Council (SGBC) and Reed Exhibitions, SGBW 2014 features anchor events, the **International Green Building Conference (IGBC) 2014** alongside the **Build Eco Xpo Asia (BEX Asia) 2014**, and is expected to attract more than 22,000 participants from 50 countries from a total of 17 co-located events.

International Green Building Conference (IGBC) 2014

3. Themed **"Lead, Engage and Sustain",** this year's IGBC will again provide the platform for global green building experts, industry leaders, policy-makers, academics, youths and students to come together to share expertise, exchange ideas and explore

opportunities to drive the adoption of greener and more sustainable building practices. IGBC 2014 will be held from 1 to 3 September 2014 at the Marina Bay Sands Expo & Convention Centre.

4. "As the 'must-attend' green building event of the year, IGBC has become a crucial platform to drive progress in the green building movement in Singapore. Over the years, the industry knowledge sharing and collaboration at the event have helped us make significant inroads into the development of green building practices locally and across the region. This year, we continue to build on these insights and achievements through targeted tracks focused on continued leadership and advanced technology to accelerate green building performance. In addition, there is also a conscious effort to foster greater engagement with the industry and the public, including the youths and students. There are more sessions that feature successful case studies in policy, programme and strategy for empowering communities, enhancing occupant well-being and the management of green facilities. I believe that if the built environment industry including the developers, building owners and even the tenants, can initiate a change in the way we build, manage and use our buildings, we will be able to achieve a significant reduction in energy consumption and secure long-term sustainability," said Dr John Keung, Chief Executive Officer, BCA.

5. In line with the government's push to develop Singapore into a "smart" nation through a greater use of technology and analytics to better manage urban infrastructure, this year's IGBC includes several sessions on next-generation, innovative green building technologies. Industry experts such as ***Cindy Regnier****, FLEXLAB Executive Manager, Leader–Commercial Building Systems, Lawrence Berkeley National Laboratory;* ***Professor Rolf Buschmann,*** *Managing Director, EnEd* and ***Dr Chiung-yu Chiu****, Deputy Secretary General, Taiwan Green Building Council*, will shed light on the latest innovations and development in green building intelligence and smart grid integration.

6. New to the programme this year are specialist Tech-talks, designed to help participants and industry practitioners deep-dive into emerging technologies and discover strategies for future adoption. Topics include explorations on smart buildings of the future as well as new lighting solutions, innovative green building materials and approaches to sustainable construction.

7. The discussions and insights on smart green buildings and tenant engagement will culminate in the BCA Breakfast Talk for CEOs on the third and final day of IGBC 2014. This year's talk is expected to bring together close to 300 C-suite and managerial level personnel from major developers, building owners and tenants to catalyse change through sustainable energy consumption behaviour and practices. *Senior Minister of State for National Development and Trade & Industry,* ***Mr Lee Yi Shyan***, will be the Guest of Honour.

Build Eco Xpo Asia (BEX Asia) 2014

8. Held in conjunction with IGBC is the Build Eco Xpo (BEX) Asia 2014. Themed "**Building Today, Sustaining Tomorrow**", BEX Asia is Southeast Asia's premier business platform for the sustainable built environment. Exhibitors at BEX Asia 2014 include a strong line-up of over 350 exhibiting companies globally, specialising in building technologies and architecture for the future of greener communities. Visitors will get a first look at the cutting-edge technologies poised to set new standards in the Green building industry.

9. One of them on showcase is the "innovative elevator", OTIS GeN2 Switch, by United Technologies. Suited for residential buildings, the OTIS GeN2 Switch can be plugged into single phase 220V main like any other electrical appliance, to transport passengers and generate energy for use in power failures at the same time. Also shaping the green future is Green Koncepts, who will pioneer the Energetix, an intelligent cloud energy management system. It harnesses the power of cloud computing to monitor electricity, water and gas, helping organisations visualise their energy consumption to curtail energy consumption.

10. According to the United Nations[1], more than half of the world's seven billion people live in urban areas. This number is expected to increase to more than six billion by 2045, highlighting the need for a successful urban planning agenda and greater attention to be given to building green and sustainable cities. With the coming together of skilled professionals, key industry practitioners, specifiers and buyers from the region, BEX Asia will provide the perfect platform for networking and Green business opportunities.

11. "Businesses today view energy management as extremely important and are seeing it as a business necessity. We are pleased to see more energy management solutions

[1] World's population increasingly urban with more than half living in urban areas, http://www.un.org/en/development/desa/news/population/world-urbanization-prospects-2014.html

companies on board this year. The collaborative opportunities between key stakeholders and exhibitors will be essential as the industry looks to propel the Green agenda," said Ms Louise Chua, Business Development Director and Project Director of Reed Exhibitions.

12. BEX Asia 2014 also features a stronger international presence with the return of the Japan External Trade Organisation (JETRO) and Taiwan pavilions. The JETRO pavilion will return bigger, featuring various Japanese Small-Medium Enterprises (SMEs) and their respective technologies to maximise business potentials. Delegations from Taiwan and Indonesia, led by Taiwan Intelligent Building Association (TIBA) and Indonesia Institute of Architect (IAI) will also be present at the event.

Co-located Events – Engagement with Youth

13. Similar to previous years, the SGBW makes a concerted effort to engage students through different activities. The BCA-SIA-SGBC International Tropical Architecture Design Competition for Institutes of Higher Learning, jointly organised by BCA, Singapore Institute of Architects (SIA) and Singapore Green Building Council (SGBC), is an annual design competition which focuses on tropical green architecture and sustainable building design solutions. A total of 70 design entries were received from tertiary students across 13 countries for the theme "Our Urban Green Home", with the entries by students from tertiary institutions in Australia, Indonesia and Germany emerging as the top three.

14. A new Engagement Workshop for Tertiary Students was also mooted with the aim of inspiring students, invoking ideas and giving them a first-hand green experience via tours around Green Mark building projects. More than 200 students will get the opportunity to hear from four distinguished speakers from the US, Canada and Singapore and engage in discussion on engineering, architecture, environmental management and other aspects of green building research, development and solutions.

15. More information about the Singapore Green Building Week, International Green Building Conference and BEX Asia are available at http://www.sgbw.com.sg/, http://www.sgbw.com.sg/about-igbc and http://www.bex-asia.com/.

Issued by the Building and Construction Authority on 1 September 2014.

About Building and Construction Authority (BCA) Singapore
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 Reed Exhibitions
Reed Exhibitions is the world's leading events organizer, with over 500 events in 40 countries. In 2013, Reed brought together over six million active event participants from around the world, generating billions of dollars in business. Today, Reed events are held throughout the Americas, Europe, the Middle East, Asia Pacific and Africa and organized by 34 fully staffed offices. Reed Exhibitions serves 43 industry sectors with trade and consumer events and is part of the Reed Elsevier Group plc, a world-leading publisher and information provider. For more information, visit http://www.reedexpo.com.

BCA-SIA-SGBC International Tropical Architecture Design Competition 2014 for Institutes of Higher Learning

What

The BCA-SIA-SGBC International Tropical Architecture Design Competition 2014 for Institutes of Higher Learning (IHL) is a design competition which focuses on tropical green architecture and sustainable building design solutions. It aims to raise the awareness of the green building movement and initiatives amongst the younger generation and encourage them to become future architects and green experts in tropical green designs.

The competition was first launched in 2011 and jointly organised by the Building and Construction Authority (BCA), Singapore Institute of Architects (SIA) and Singapore Green Building Council (SGBC). This is the fourth time the competition has been organised.

Sponsors

This year's competition is supported by CPG Consultants Pte Ltd.

Number of entries received/shortlisted

A total of 70 entries from 13 countries including Australia, Costa Rica, Germany, India, Indonesia, Malaysia, Philippines, Kenya and USA were received this year. Out of which, six finalists were shortlisted.

Eligibility

Open to institutes of higher learning (IHLs) globally, either teams or individuals.

Criteria for entries

The theme for this year's competition is "**Our Urban Green Home**". The design entries are expected to demonstrate the essentials and key constituents of a green residential building in a metropolitan city. Entries should be applicable for the tropical climate and showcase innovative and sustainable designs. They should also show how the proposed home will be able to integrate with the surrounding environment and landscape.

Other requirements include:

- Incorporating both active and passive design strategies, renewable energy (if applicable) and other ecological features
- Demonstrating how the design encompass energy efficient factors
- Ensuring that the design concept allows end-users to cultivate behaviours or actions that will keep the home green in the tropical climate / incorporate design elements meant to guide users towards self-selecting energy-efficient behaviours
- Presenting a practical, feasible direction for future residential buildings, based on resources available in present day
- Incorporating the engineering feasibility of the design solutions proposed
- Using a green assessment tool of choice to validate their sustainable design concepts (E.g. BCA Green Mark scheme)

Judging criteria and scoring

1	Design Concept & Creativity (20%)
2	Relevance to tropical context (20%)
3	Relevance to theme (20%)
4	Feasibility in current context (15%)
5	Design for behavioural change and social capital (15%)
6	Presentation (5%)
7	Reference to green rating (5%)

Judging panel

Building and Construction Authority	Mr Tan Tian Chong Group Director (Technology Development)
Singapore Institute of Architects	Mr Cheong Yew Kee Council Member
Singapore Green Building Council	Mr Ng Eng Kiong President
CPG Corporation	Mr Khew Sin Khoon President & Chief Executive Officer
Housing and Development Board Building Research Institute	Mr Alan Tan Director (Environmental Sustainability Research)

Winners

Award	Country	School	Project Title	Prize
1st	Australia	University of Melbourne	Water Smart Home	$5,000
2nd	Indonesia	Parahyangan Catholic University	Green Modular Housing System	$3,000
3rd	Germany	Bauhaus University Weimar	Green Collectivism	$2,000
Merit	Singapore	National University of Singapore	The Mosaic	$800
Merit	Malaysia	National University of Malaysia	Small Farming, Home Farming	$800
Merit	Indonesia	Parahyangan Catholic University	Kampong Pulo	$800

1st Prize Award: Montague Precinct
Team: Van Anh Hoang
University of Melbourne, Australia

Montague precinct is planned by the Government as the new high density residential area for the Extended Melbourne CBD. Since Melbourne's population is expected to steadily grow to more than 5 million by 2025 and 6.5 million by 2050, the Government opts for a density of 300 dwellings per hectare for the area. Within the 4ha site, the proposition creates a live-connect-work urban community that addresses the challenge of creating higher and denser living community while providing more desirable housing typologies that accommodate more outdoor settings and open green spaces.

With an integrated public transportation system, the development permits higher use of existing infrastructure. The concept also promotes the idea of a sustainable community through the proposal of environmentally sustainable design strategies, both passive and active in the consideration of energy efficiency, rain water harvesting and utilization of solar energy and wind power. By "planting" buildings that function as trees in terms of management and energy self-sufficiency, the design aims to "Greening" Melbourne into a forest, reverse negative effects of urbanization and industrialization. In addition, it proposes to transform urban gardens into 'micro-farms' for vegetables and animals to produce food for residents' needs.

2nd Prize Award: Green Modular Housing System
Team: Antonius Richard Rusli
Parahyangan Catholic University, Indonesia

The idea is to create a new urban housing concept in a metropolitan city. In this project, Jakarta, an unmanaged developing metropolitan city, was chosen to be the target. The dwelling problem in Jakarta appears to be a result of an inappropriate housing system. In order to achieve better urban green homes, an effective, affordable, and eco-friendly method in designing was needed. A new method was hence developed from a modular design system but with more specific characteristics. Based on a modular system, everyone can become the architect of his own home. It is also economically sustainable and allows users to customise their own house, by adjusting their needs and budget.

The idea is to make a C-Module (a module of a certain size that is surrounded by massive walls on three sides) that can provide space that can accommodate the house activities in everyday life. With the dimension of 2.4 x 2.4 x 2.4 m^3, a single block of C-module could provide spaces for a bed room, living room, kitchen, dining room, or even vertical circulation. C-Modules can be mass produced and even reused, just like containers.

3rd Prize Award: Green Collectivism
Team: Tran Hoai Phuong, Bui Xuan Duong
Bauhaus University Weimar, Germany

To build a green home in growing Hanoi, Vietnam needs to go beyond the conventional idea of a mere dwelling. Once a highly water-based city, Hanoi is losing its connection and appropriation with water in the way to become a metropolitan. The proposed house endeavours to reconcile this bond, a development model for the whole city in order to become resilient to flood and climate change.

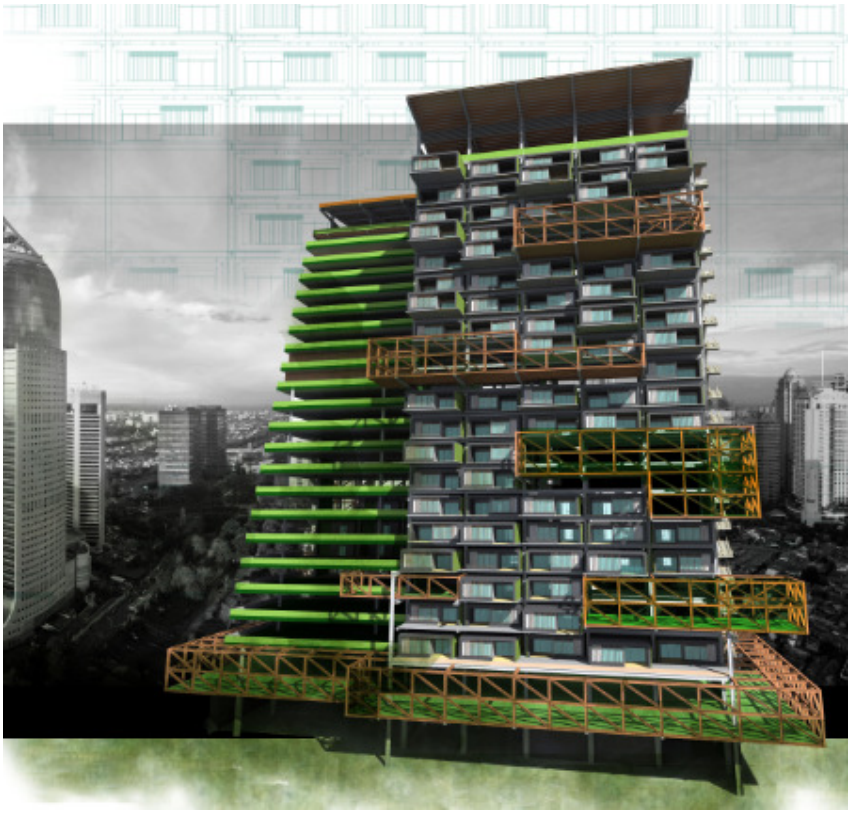
The proposal creates new urban tissue in form of a sophisticated dyke, operating as both infrastructural and landscape elements. It is the mediator between the river and the city, providing more space for water, occasionally floodable mass and concentrating the urban development to strategic location. Urban and landscape elements work together to establish a self-sufficient water management system.

Merit Award: The Mosaic
Team: Ang Jie Min, Ang Yu Qian, Koe Choon Wei, Lee Zhe Min
National University of Singapore, Singapore

The Mosaic is a new generation, green residential home for metropolitan cities. It is the epitome of sustainable metamorphic design. It aims to spearhead future residential development by providing sustainable design with high buildability and configurability, while simultaneously promotes social interaction and consciousness. The design rests on efforts to maintain an equilibrium between sustainable design, construction practices and the needs of residents.

Inspired by Lego, The Mosaic utilises a modular concept suitable for volumetric construction and/or off-sire pre-fabrication. Each apartment unit represents a 'detachable Lego brick' connected to the floor slab at every level. The bricks can be assembled or rearranged and stacked at each platform, supported by a strong core that runs in the middle of the building. This allows for different stacking configurations to suit the site context.

Merit Award: Small Farming, Home Farming (SFHF)
Team: Lee Hao Yan
National University of Malaysia (UKM), Malaysia



The main purpose of the SFHF Project is to provide a better living place for the poor communities in Jakarta and eventually lower the unemployment and poverty rate, as well as to encourage urban farming that is beneficial for a developing city like Jakarta.

The project is a combined housing and farming project, where the residents will live, farm and work in the same building. Working and living within a building helps in saving money and energy which is more economical. The SFHF Project also features a rainwater harvesting system is in place which contributes to the energy efficiency of the building. The rainwater collected at the roof will be channelled to a rainwater harvesting tank and distributed for the farming irrigation and toilet flushing after treatment.

Merit Award: Kampong Pulo
Team: Jonathan Nathania, Raymond San, Laurensia Levina, Shinta Fangoria
Parahyangan Catholic University, Indonesia

Apartments, ‘superblocks’ and other integrated housing are developing rapidly across Jakarta, Indonesia—alongside slums that continue to grow sporadically across the city. About 65 percent of the people living in Jakarta are in slums. The project aims to create a new urban ecosystem to boost the quality of social, physical and environmental spaces through creating a vibrant community housing; building a green housing environment; and introducing a compact vertical living space. It proposes two main types of housing in this new ecosystem: a Vertical Kampong and an Urban Wetland. These housing types will feature sustainable strategies such as climate responsive design and community-oriented design.