

BUILDgreen

Issue 07/2015

Building and Construction Authority

We shape a **safe, high quality, sustainable** and **friendly** built environment.

02 \$52 MILLION BOOST FOR GREEN INNOVATIONS

06 DEMONSTRATING INTERNATIONAL LEADERSHIP WITHIN THE BUILT ENVIRONMENT

09 TENANT ENGAGEMENT – THE NEXT GREEN CHALLENGE



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We would like to hear from you if you would like to share any best practices and latest technologies that could improve sustainability or you would like us to include you in our delivery mail list, please email us at bca_enquiry@bca.gov.sg

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CEO's MESSAGE

2015 is a year of double celebration for BCA as we commemorate Singapore's 50th year of independence and mark ten years of greening our built environment through the BCA Green Mark.

Together with the industry's support, we achieved several key milestones in 2014. A record number of 225 BCA Green Mark awards were given out at the BCA Awards Night and Singapore's 3rd Green Building Masterplan was launched successfully at the International Green Building Conference 2014 (IGBC 2014). These initiatives and achievements have enabled us to reach the 27% mark in 'greening' our built environment, bringing us steadily towards our target of 'greening' at least 80% of all our buildings by the year 2030.

At IGBC 2014, BCA also launched a \$52 million fund, the Green Buildings Innovation Cluster Programme (GBIC), which is devoted to research, development and demonstration of innovative and promising green building solutions. This is another key milestone that brings us one more step closer to being a global leader in green buildings in the Tropics and the Sub-tropics. We encourage building owners and developers to tap on this fund and accelerate green innovations in the built environment.

I am also pleased to see that industry partners such as City Developments Limited (CDL) has also been rolling out new initiatives such as the Green Lease programme. Find out how CDL engaged its tenants proactively in reducing their energy consumption and carbon footprint in this issue.

In the past year, BCA also had the opportunity to exchange best practices at Greenbuild (USA), World Sustainable Conference (Spain) and the Sydney International Summit (Australia). This is indeed a testament of the growing global recognition of our progressive approach in formulating and implementing sustainable initiatives for the built environment.

We would like to thank our stakeholders for the strong support in Singapore's green building movement. We hope to continue this precious partnership with the industry in achieving a Sustainable Singapore, as we strengthen our engagement efforts with the public to obtain greater buy-in for our national green building journey.



Dr John Keung
Chief Executive Officer



\$52 MILLION BOOST FOR GREEN INNOVATIONS



Eight partners showing their commitment for GBIC at the BCA Breakfast talk

THE GREEN BUILDINGS INNOVATION CLUSTER (GBIC) PROGRAMME WILL BOOST THE RESEARCH, DEVELOPMENT AND DEMONSTRATION OF NOVEL TECHNOLOGIES FOR GREEN BUILDINGS.

The new Green Buildings Innovation Cluster (GBIC) Programme is a \$52-million integrated research, development and demonstration hub focused on developing, testing, monitoring and showcasing promising green building solutions. It will consolidate existing research and development efforts and capabilities while providing platforms to demonstrate novel technologies and bring them closer to market adoption.

Mr Lee Yi Shyan, the Senior Minister of State for National Development, announced the launch of the programme at the recent Singapore Green Building Week BCA Breakfast Talk for CEOs.

GBIC was conceptualised when key challenges and priority areas were identified from the Building Energy Efficiency R&D Roadmap in order to meet the desired outcomes of the 3rd Green Building Masterplan. The hub, which is funded by the National Research Foundation, resides within BCA.

To help kick-start the programme, BCA established partnerships with eight Green Mark Champions to validate the performance of promising technologies within their buildings. The aim is to raise the adoption of these technologies across the industry.

“The launch of GBIC underlies our commitment to lead the green building movement and quicken the pace of adoption of green building practices locally and regionally,” said Dr John Keung, BCA’s CEO at the launch. “We are glad to have our partners on board to support us in moving a step closer to translating the results of our research, development and demonstration efforts into actual realisation.”

The eight partners are Ascendas, CapitaLand Limited, City Developments, Housing and Development Board, JTC Corporation, Keppel Land International, Nanyang Technological University and National University of Singapore. The GBIC programme will also engage other stakeholders continuously to push the boundaries of energy-efficient technologies further.



GBIC Focus Areas



GBIC – Building Energy Efficient Demonstrations Scheme (GBIC-Demo)

This activity focuses on the large-scale demonstration of novel energy-efficient technologies in actual buildings. These technologies could come from successfully completed research and development projects or proven technology, either local or overseas, that have not been implemented widely yet. The technology demonstrated should be able to achieve 20-40% improvement over the best-in-class technology.

The GBIC programme will help to offset the risks of demonstrating unproven technology by providing generous co-funding incentives to cover the equipment, installation, commissioning and instruments used for capturing the performance data as well as removing the technology if it does not work. To encourage building owners and developers to host the demonstration of the technology, GBIC will be organising workshops to bring together the academia (including the principal investigator and researchers), the industry (the technology provider) and the host (the building owners and developers) to work together on the demonstration project.



GBIC – National Building Energy Efficiency Repository (GBIC-Repository)

This is a database of information from GBIC-Demo projects, existing buildings and reports from successfully completed research and development projects. Researchers may access the data from the GBIC-Repository to analyse the performance of the demonstrated technology and carry out data analytics. At the same time, BCA would be able to share success stories with the wider public through the GBIC-Web Portal and share the data with BCA's Building Geographical Information System. All the information featured will contribute towards policy formulation and benchmarking across building types.

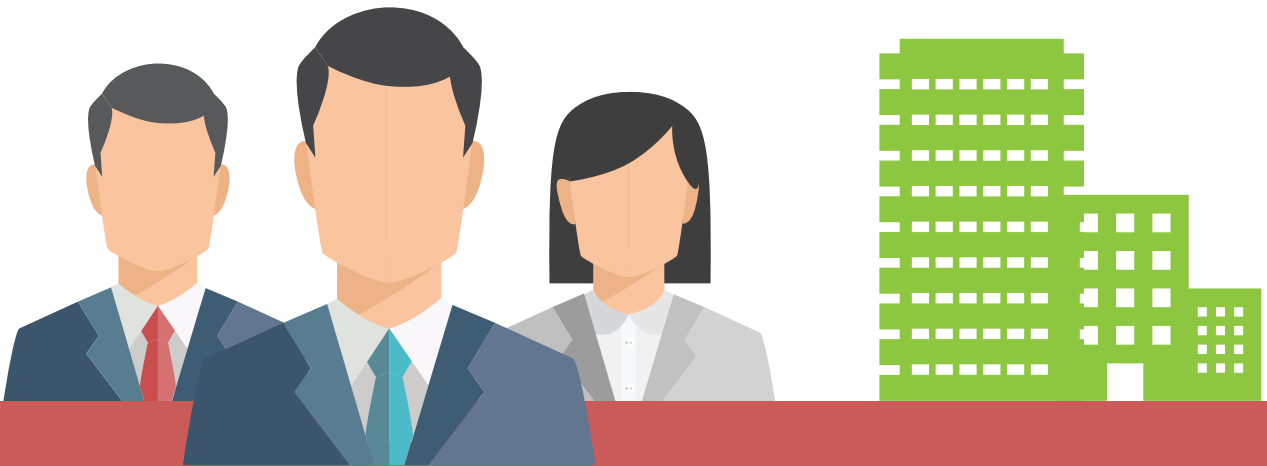


GBIC – Energy Efficiency Research & Development (GBIC-R&D)

Tailored green building research and development programmes will build core capabilities in the key technology clusters identified by the Building Energy Efficiency R&D Roadmap. This can be in the form of direct collaboration projects to support system studies identified in the Building Energy Efficiency R&D Roadmap as ground work to be conducted prior to any technology development. It can also support initiatives to drive BCA's 3rd Green Building Masterplan and new Green Mark versions. The other method is the traditional Grant Call Approach focusing on the areas identified by the Building Energy Efficiency R&D Roadmap.

DEMONSTRATING INTERNATIONAL LEADERSHIP

WITHIN THE BUILT ENVIRONMENT



The Building and Construction Authority is known in Singapore and regionally for its progressive approach to incentivising, regulating, and constantly improving Singapore's built environment. On the wider international stage BCA has won a number of awards and accolades as well as shared our expertise and the expertise of our industry partners. In the last quarter of 2014 BCA and its senior management were involved in a number of international exchanges to both learn from other countries as well as share our own approaches.



World Sustainable Building Conference 2014, Barcelona



The globally-recognised World Sustainable Building 2014 (WSB'14) Conference, one of the largest meetings on sustainable buildings, was held in Barcelona, Spain under the theme "Sustainable Building: Results...Are we moving as quickly as we should? It's up to us!" About 2,200 professionals worldwide attended the WSB'14, which included plenary sessions and 108 parallel sessions, held from 28 to 30 October 2014.

BCA Deputy CEO, Mr Ong See Ho, led a Singapore delegation comprising researchers from NUS, ETH Singapore and Berkeley Education Alliance for Research in Singapore (BEARS), to Barcelona to attend the conference as well as the various technical committee meetings held in conjunction with WSB'14 during that week.

BCA shared and exchanged views with international delegates on construction policies and initiatives at various forums. Mr Ong led by sharing at the Inter-Jurisdictional Regulatory Collaboration Committee (IRCC) meeting about the impact of our regulatory requirements on construction productivity. Jeffery Neng

also discussed at the IRCC session, how our legislative framework under the Singapore Building Control Act helps advance the sustainability concepts in buildings from design to operation. This was complemented by Low Giau Leong's delivery at the main conference session, on BCA's sustainable construction policies shaping the built environment by advocating the best use of Singapore's limited resources including engineered materials from building and construction waste.

WSB'14 focused on sustainable housing for growing population, reducing the ecological footprint in terms of carbon emissions/ energy and building sustainability rating tools for less developed countries. There was much emphasis among the EU community on the use of low-carbon building materials and Life-cycle Assessment (LCA) tools to advance sustainability for the built environment. Such green initiatives are similar to what BCA has identified for adoption under the 3rd Green Building Masterplan. Nevertheless, the inputs gathered from the Learning Journey are useful for fine-tuning the tools and policies to support the Masterplan.

Green Build USA

Green Build is one of the premier international Green Building Conferences in the world along with Eco Build (UK) and IGBC (Singapore). In 2014 Green Build was held in New Orleans, Louisiana. BCA CEO, Dr John Keung, led a 23-person delegation made up of BCA officers, local industry and the Singapore Green Building Council to attend the exhibition and conference that features three days of education sessions, networking opportunities with overseas counterparts, green building workshops and building tours.

BCA organised a pre-conference learning trip led by Deputy CEO, Mr Lam Siew Wah, to visit related government agencies, private organisations and green building sites in Washington D.C.

The delegation visited the District Department of Environment and the Energy Star Portfolio Manager by US Environmental Protection Agency. Washington D.C. has an Energy Benchmarking and Mandatory Disclosure programme, which in many ways is similar to Singapore with BCA's mandatory energy disclosure and Building Energy Submission System (BESS). Both parties benefited greatly from the knowledge exchange of each other's best practices, and more importantly the challenges faced in the implementation of such systems. Going forward, BCA will phase the inclusion of other building types, such as institutions, health-care facilities, for the annual mandatory submission. This will provide a more comprehensive and holistic overview of the building energy performance of Singapore's built environment. BCA will also encourage the voluntary display of buildings' energy certificates for the better energy performing buildings at prominent public locations to encourage more buildings to improve their environmental performance and a greater transparency of our built environment's performance.

The delegation also visited the Microsoft Innovation and Policy Centre and Tulane University to investigate the adoption of open, scalable and interoperable platforms featuring advanced analytics, web-enabled devices and cloud-based servers to monitor their buildings' energy consumption across multiple sites. These systems provide fault detection, energy management capabilities that aim to reduce FM manpower, improve productivity and generate costs savings from better managed buildings. Under the 3rd Green Building Masterplan and upcoming Green Mark version 5, demand-based controls, data analytics and disclosure of energy consumption for building will be key focus areas.



The annual convention was held at the Ernest N. Morial New Orleans Convention Centre. Attendance at the event totaled 17,507, with 552 exhibiting companies participating in 142,000 ft² of exhibit and display space on the trade show floor.



Attendees took a tour of through the Central City neighbourhood of New Orleans to see for themselves how effectively green design has been used in the rebuilding efforts after Hurricane Katrina hit the city nine years ago.



The delegation was briefed on the Microsoft's products and technologies displayed on state-of-the-art exhibit technology and Redmond Operation Centre overseeing facilities across the campus.



District Department of the Environment (DDOE) and US Environmental Protection Agency (EPA).



New South Wales the Bays Precinct, Sydney International Summit

BCA's CEO Dr John Keung was honoured to be an invited panellist by Urban Growth New South Wales on behalf of Premier of New South Wales, The Hon. Michael Baird, and the Minister for Planning and Women, The Hon. Prudence Goward. The aim of the summit was to invite international experts to review, discuss and share best practices in relation to the Bay's Precinct in Sydney which is to be a future key urban growth area for development. In this interactive high-level summit Dr Keung shared how Singapore has successfully used progressive regulation in our key growth areas in Singapore to drive high levels of sustainability which has been proven to be very successful in terms of commercial successes as well as providing places for work, live and play. Parallels can be drawn between the Bay's Precinct and our own Marina Bay as the land is government owned and controlled, thus facilitating the opportunity for a holistic masterplan and development strategy that can build upon Australia's successful community involvement and public management strategies.



A part of BCA's presence in Australia extended beyond the summit and included meetings with our counterparts in the City of Melbourne government, Sustainability Victoria, the Office of Environment and Heritage of New South Wales, as well as the Royal Institution of Chartered Surveyors (RICS) the Australian Life Cycle Assessment Society (ALCAS) and the Green Building Council of Australia. These were platforms

for exchanges for both parties to learn from each other's policies, regulations and public administration programmes. There are great similarities between the two countries' approaches which include financing models, mandatory energy benchmarking and disclosure, the focus on occupants and the use of green building rating tools.



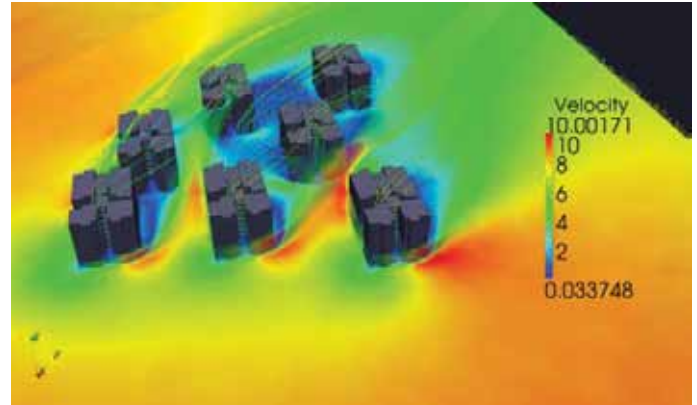
National Bank of Australia – The Village, in Melbourne

Australia's construction industry is notably advanced in embodied energy and life cycle analysis. BCA will continue to study this and develop simplified processes as a part of the on-going revisions to the BCA Green Mark criteria, so as to have a more holistic push for greater resource stewardship within the built environment.

In another notable area, to complement the national and federal governmental efforts, there is strong and active participation by professional bodies, city councils and private sector networks in driving the green building agenda, including in the implementation of complementary programmes, the development of guides and tools to transform market dynamics. Programmes of note include City Switch, the National Australian Built Environment Rating System (NABERS) and Sustainability Victoria's Resource Smart for both schools and businesses. In addition, the RICS developed a mobile and desktop app called 'Leasa' which compares energy, occupancy and lighting costs of a space for lease as well as track energy bills that links to the NABERS database. The strong community partnership between the public and private sectors facilitates innovation and a culture of real environmental stewardship and is something that BCA will strive to work towards with our increasing collaborations with the community.



BUILDING AIRFLOW MODELLING MADE EASY



Airflow modelling and simulation

A NEW SIMULATION TOOL IS AVAILABLE NOW TO HELP IMPLEMENT NATURAL VENTILATION STRATEGIES AT THE DESIGN STAGE.



GrBEST Demonstration to SMS Lee Yi Shyan

Green building practitioners can look forward to a simpler, faster and more cost-effective way to simulate building airflows. BCA has developed a new tool, the Green Building Environment Simulation Technology (GrBEST), jointly with the Institute of High Performance Computing and local industry practitioners, Building System and Diagnostics and RightViz Solutions.

GrBEST is a building airflow modelling tool that combines computational fluid dynamics airflow modelling and simulation with the geometry input from a BIM 3D model. It provides a seamless workflow from the early 3D-centric drawing stage by exporting the BIM Industry Foundation Classes file from a 3D model to the geometry input file for airflow simulation analysis.

“GrBEST is able to provide airflow simulation results of simple estate building geometries with a short turnaround time, from two weeks to potentially less than two days, all in a single graphical user interface, simple enough to be carried out with a few clicks of a button,” explained Petrina Tay, Research Engineer at the Institute of High Performance Computing.

The tool aims to assist green building practitioners meet the computational fluid dynamics simulation requirements for natural ventilation under the Green Mark scheme. It enables airflow simulation over an estate landscape and within the building interior to be conducted as a design optimisation and assessment tool towards achieving a comfortable naturally ventilated environment in buildings in the tropics.

With funding support from the Ministry of National Development, the pilot version of GrBEST was launched for an industry trial in March 2014. Positive feedback was gathered from companies who attended the launch workshop and who tested out the modelling software for their actual projects.

“GrBEST is a user friendly software that reduces the simulation process and lets us try more “what if” scenarios in a shorter time,” said Mr Alan Foo, Principal Sustainable Building Engineer for CPGreen at CPG Consultants.

For more information on GrBEST, please contact Dr Poh Hee Joo, Institute of High Performance Computing, at pohhj@ihpc.a-star.edu.sg and Wong Ngian Chung at wong_ngian_chung@bca.gov.sg



TENANT ENGAGEMENT – THE NEXT GREEN CHALLENGE

Guest-of-Honour Dr John Keung, BCA's CEO, and Mr Chia Ngiang Hong, City Development's Group General Manager, at a special recognition ceremony for 17 CDL Pioneer Green Lease Tenants.



CITY DEVELOPMENTS LIMITED (CDL) SHOWS HOW IT IS ENGAGING COMMERCIAL TENANTS THROUGH ITS NEW GREEN LEASE PARTNERSHIP PROGRAMME TO REDUCE THEIR CARBON FOOTPRINT.

Adopting a holistic approach to building sustainably, City Developments Limited (CDL) has been developing innovative green buildings and implementing green property and facilities management in its buildings.

CDL has retrofitted several of its existing commercial properties, by upgrading chiller plants and installing motion sensors, energy-efficient lighting and recladding facades and has achieved annual energy savings of over 14 million kWh which is equivalent to an average of more than S\$3.6 million in savings annually.

With the green building infrastructure and facilities management in place, the next step to driving further gains in energy efficiency is to achieve sustained user behavioural change among building occupants. The focus on developing collaborative partnerships with building tenants is, a key thrust in the 3rd BCA Green Building Masterplan.

Collaborative Participation from Tenants

Since September 2014, CDL has progressively implemented the CDL Green Lease Partnership programme to engage, encourage and enable its commercial tenants to play a more proactive role in Singapore's sustainable development agenda. As of November 2014, over 65% of its existing tenants had signed the CDL Green Lease Memorandum of Understanding, pledging their commitment to monitor, manage and reduce energy consumption.

To mark the establishment of the CDL Green Lease Partnership, some 65 representatives from 45 companies, including 17 Pioneer Green Lease Tenants, across 11 of the company's commercial buildings, attended a special launch event on 29 October 2014.

Under the programme, CDL introduced a dedicated team of Green Lease Ambassadors to advise its tenants on 'green fit-outs' by making simple adjustments such as using environmentally friendly materials, fittings, equipment and lighting fixtures that will go a long way to achieving greater energy efficiency. Tenants may also approach these Ambassadors for advice on the use of indoor greenery, energy and water conservation measures and waste management.

Another new initiative under the programme is a digital energy monitoring portal that the company had developed and launched jointly with Tuas Power. It is an automated meter reading portal that provides half-hourly updates of the tenant's energy consumption and can be accessed conveniently via mobile devices such as smartphones or tablets. Tenants can also obtain an analysis of their electricity use to understand their energy consumption pattern and find ways to lower their energy use.

Beyond Infrastructure and Hardware

As an extension of its life-cycle approach towards sustainability, CDL is also leveraging its position as one of Singapore's biggest landlords to influence its key stakeholders through such eco-outreach programmes.

Some of its other programmes include 'Project: Eco-Office', a first-of-its-kind green office campaign with the Singapore Environment Council launched in 2002, and '1°C Up' Programme, introduced in 2007, which has achieved a 100% tenant participation rate. Such partnerships will help accelerate Singapore's green building movement.



CALLING ALL GREEN ACHIEVERS



THE BCA-SGBC GREEN BUILDING INDIVIDUAL AWARDS 2015 IS NOW OPEN FOR NOMINATIONS.

Are you a local or international professional who has contributed to the development and management of green and sustainable or Green Mark buildings in Singapore and beyond? Or do you know someone who is?

BCA in partnership with the Singapore Green Building Council (SGBC) is looking for the next slate of green champions for the BCA-SGBC Green Building Individual Awards 2015. The award will be given out for five categories, namely, Advocate, Architect, Engineer, Facilities Manager and Innovator. Nominees below the age of 40 in 2015 will also be automatically eligible for the Young category when they are nominated under any of the five main categories.

Since its launch in 2011, the Awards have recognised 20 outstanding individuals for their strong commitment and conviction in pursuing environmental sustainability in their work delivery. The conviction of these dedicated individuals to protect and improve the environment has injected new purpose and meaning into built environment careers.

The award, to be presented on a biennial basis starting 2015, aims to motivate talented green professionals and individuals to challenge their limits in developing innovative green building and management solutions.

Winners to the award will be honoured at the Singapore Green Building Week 2015 as exceptional green individuals from the built environment who have made consistent contributions and outstanding achievements to sustainable development in Singapore and Green Mark.

For more information on nomination, please visit www.bca.gov.sg/greenmark/gbia.html. Nominations close on 24 April 2015.



MEET OUR 2014 WINNERS



Green Facilities Manager of the Year
Mr Anthony Goh
Senior Vice President of Property and Facilities Management, City Developments Limited (CDL)



Green Facilities Manager of the Year
Mr Lim Tow Fok
General Manager of Property Management & Knowledge Management, Keppel Land International Limited



Green Advocate of the Year
Mr Vincent Low
Vice-President, G-Energy Global Pte Ltd



Young Green Advocate of the Year
Mr Jason Pomeroy
Principal, Pomeroy Studio



Green Architect of the Year
Mr Alan Tan
Director, Environmental Sustainability Research, Housing and Development Board



Green Architect of the Year
Mr Tan Shao Yen
Managing Director, CPG Consultants Pte Ltd



Green Engineer of the Year
Er Patrick Foong
Managing Director, e2green Pte Ltd



Green Innovator of the Year
Dr Sujit Ghosh
Chief Executive Officer, Holcim Limited

WINNERS OF YEAR 2013



Green Advocate of the Year
Mr Mann Young
Head of CLT Business, Asia, Lend Lease Asia Holdings Pte Ltd



Green Engineer of the Year
Er Russell Cole
Director, Arup



Young GBIA of the Year
Dr Kelvin Lee Yang Pin
Senior Technical Manager, Samwoh Corporation Pte Ltd



Young GBIA of the Year
Dr Uma Maheswaran
CEO (India) and Vice President (Sustainable Design), Jurong Consultants Pte Ltd

WINNERS OF YEAR 2012



Green Advocate of the Year
Mr Eugene Seah
Group Managing Director, Langdon & Seah Singapore Pte Ltd



Green Advocate of the Year
Mr Tan Phay Ping
Managing Director, Building System and Diagnostics (BSD) Pte Ltd



Green Architect of the Year
Mr Tang Kok Thye
Associate Partner, ADDP Architects LLP



Green Innovator of the Year
Er Tay Cher Seng
Managing Director, Natflew Pte Ltd

WINNERS OF YEAR 2011



Green Advocate of the Year
Mr Allen Ang
Deputy General Manager, Projects and Head, Green Building, City Developments Limited



Green Engineer of the Year
Er Tan Kiat Leong
Executive Director, Beca Carter Hollings & Ferner (S.E. Asia) Pte Ltd



Green Architect of the Year
Mdm Vivien Heng Cheng Sim
Director, RSP Architects Planners & Engineers (Pte) Ltd



Green Innovator of the Year
Dr Ho Nyok Yong
Chief Operating Officer, Samwoh Corporation Pte Ltd



IGBC 2014 AND BEX 2014

ANOTHER SUCCESSFUL RUN



The International Green Building Conference (IGBC) and the BEX Asia events, now in their sixth edition, ended on another high note. More than 10,000 attendees across 40 countries attended the events in 2014.

The three-day IGBC 2014 featured 25 sessions on diverse and dynamic topics such as green building policies, opportunities, technologies, exemplary designs, innovative materials and green communities, delivered by 102 speakers from 19 countries. The event also saw the launch of a number of new initiatives for the industry.

One of the event highlights, the BCA Breakfast Talk for CEOs welcomed almost 300 C-level and senior management representatives and guest-of-honour Mr Lee Yi Shyan, Senior Minister of State for National Development and Trade and Industry.

Event Scorecard

- ✓ 10,000 attendees
- ✓ 102 speakers
- ✓ 25 sessions
- ✓ >200 media coverage pieces
- ✓ 178 participants at the Green Mark Tours
- ✓ 180 students at the inaugural student workshop

New Initiatives Launched

- ✓ 3rd Green Building Masterplan
- ✓ Inaugural BCA Building Energy Benchmarking Report
- ✓ Green Building Innovation Clusters
- ✓ Green Mark Pearl Award and Green Mark Plaque
- ✓ Green Mark Incentive Scheme for Existing Buildings and Premises
- ✓ ZEB Publication – Leading the Way to Net Zero, 2009 – 2014: Inside SE Asia's First Retrofitted Zero Energy Building

Join us at IGBC 2015!

The International Green Building Conference 2015 will be happening on 2 – 4 September at the Sands Expo and Convention Centre, Marina Bay Sands.

Key Highlights

- ✓ Green Mark Version 5
- ✓ Green Mark 10th Anniversary
- ✓ Latest update of BCA Green Mark Schemes
- ✓ Updates from the Asia-Pacific region on Sustainable Developments
- ✓ Green Building Trends, Technologies & Strategies
- ✓ Converge with 10,000 delegates from over 40 countries
- ✓ Co-located with MCE 2015 and Sustainable Laboratories Conference
- ✓ Green Tours
- ✓ Held alongside the annual BEX ASIA 2015

Organised by



International
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Conference 2015
Singapore

Contact us for more information

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Visit www.sgbw.com.sg for more information.



WIDER COLLABORATION AND ENGAGEMENT



**BUILD GREEN,
LIVE SMART**



International
Green Building
Conference 2015
Singapore

2-4 SEPTEMBER 2015
MARINA BAY SANDS
SANDS EXPO & CONVENTION
SINGAPORE

ORGANIZED BY

Building and Construction Authority



CELEBRATING



CALLING FOR SUBMISSION OF PROPOSALS

BCA IS ANNOUNCING THE CALL FOR PRESENTATIONS FOR THE INTERNATIONAL GREEN BUILDING CONFERENCE 2015 (IGBC 2015) TO BE HELD ON 2 – 4 SEPTEMBER 2015 AT MARINA BAY SANDS, SINGAPORE.

Themed “Build Green, Live Smart”, IGBC 2015 Serves As A Platform:

- To engage and collaborate with the key stakeholders from public and private sectors in Singapore and the Asia Pacific region to create a sustainable built environment that benefits communities and is environmentally friendly and economically rewarding.
- To advance the green building movement using smart solutions to optimise energy efficiency, enhance indoor environment quality and improve users’ comfort and productivity.
- To raise awareness among building occupants on smart and green solutions, thus encouraging adoption of green practices in their everyday lives.

The presentation topics include, but are not limited to, the following areas:

- Topic 1: The Future of Green Buildings
- Topic 2: The Green Building Movement Regionally
- Topic 3: Beautiful Green Buildings
- Topic 4: High-Performance Green Buildings and Infrastructures
- Topic 5: Cutting-Edge Technologies and Materials
- Topic 6: Unique Green Building Solutions
- Topic 7: Renewable and Alternative Energy; Smart Grids
- Topic 8: State-of-the-Art Green Building Research
- Topic 9: Smart and Sustainable Cities
- Topic 10: Smart Green Buildings
- Topic 11: Sustainable and Smart Living



The deadline for abstract submission is 9 March 2015.

For more information, please visit www.sgbw.com.sg

For submission of papers for presentation at IGBC 2015,

Please contact **Mr Eddy Susilo** Tel: +65 6804 4671 Email: eddy_susilo@bca.gov.sg or
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GREEN CREDENTIALS SHOW IT ON A PLAQUE!

The first BCA Green Mark Plaques were presented to the eight BCA Green Mark Champions 2014 at the launch.

ORDER YOUR BCA GREEN MARK DISPLAY PLAQUE TO SHOW YOUR GREEN MARK ACHIEVEMENTS TO VISITORS AND STAFF.



BCA GREEN MARK

The BCA Green Mark Display Plaque was launched in September 2014 to allow building owners, developers and individuals to display the building's achievement in design and operations.

Buildings and tenant premises that have attained Green Mark Award can now display their green credentials prominently. Building owners can apply to purchase and display this unique plaque upon completion of the design and operations verifications.

The plaque, which is made through a moulding process from recycled glass, is designed by renowned glassmaker and artist Ms Jane Cowie from Australia.

For more details on the BCA Green Mark display plaque and application, please refer to www.bca.gov.sg/GreenMark/Green_Mark_Plaque.html



2030 | 80% (Target)

2015 | >27%

2004 | 0%

PERCENTAGE
OF GREEN
BUILDINGS IN
SINGAPORE

AS AT JAN 2015

