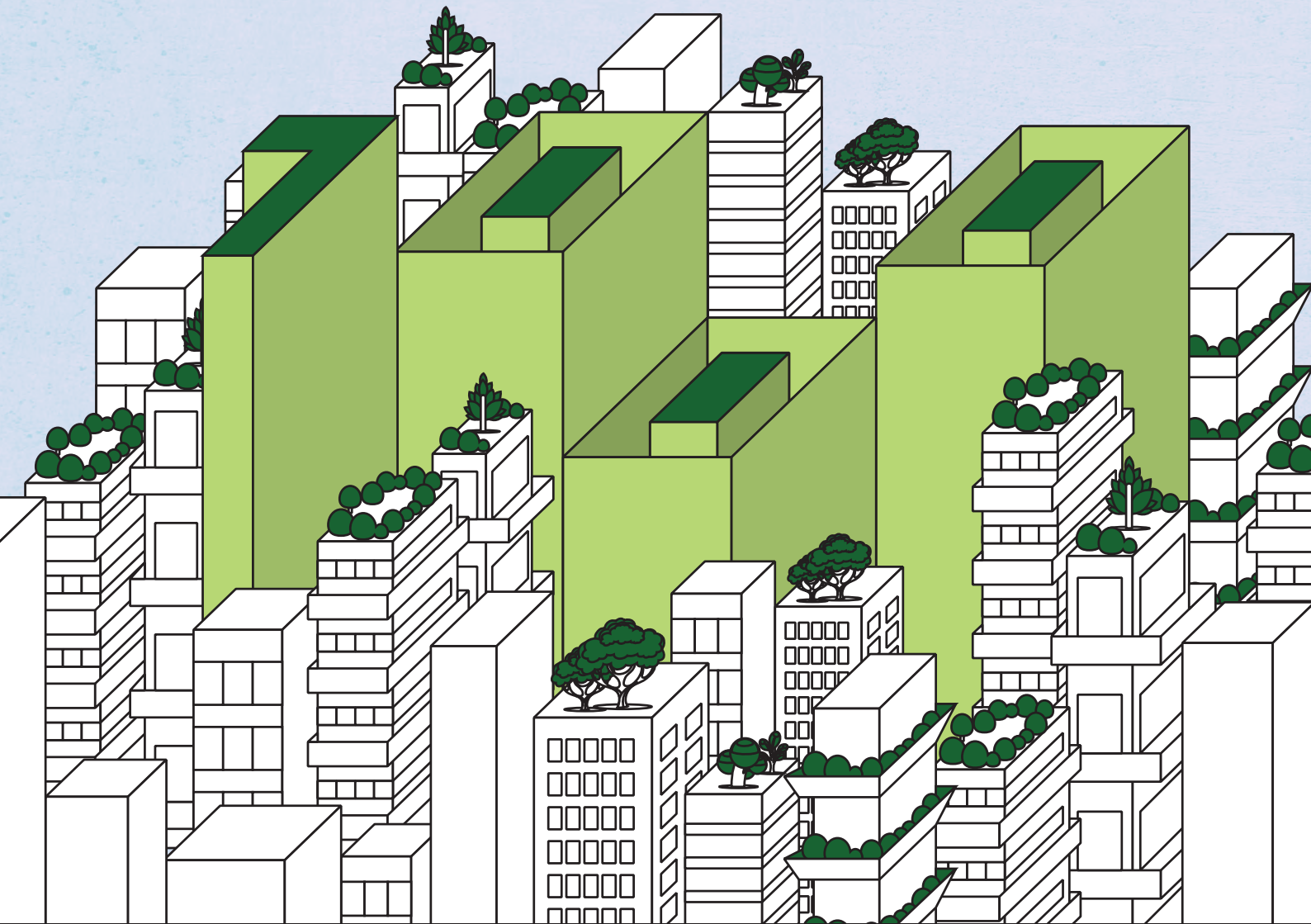


P*il*ars

WE SHAPE A **SAFE**, **HIGH QUALITY**, **SUSTAINABLE** AND **FRIENDLY** BUILT ENVIRONMENT | ISSUE 02/FEB-MAR 2012



BCA CELEBRATES 1000TH GREEN BUILDING MILESTONE

Pillars

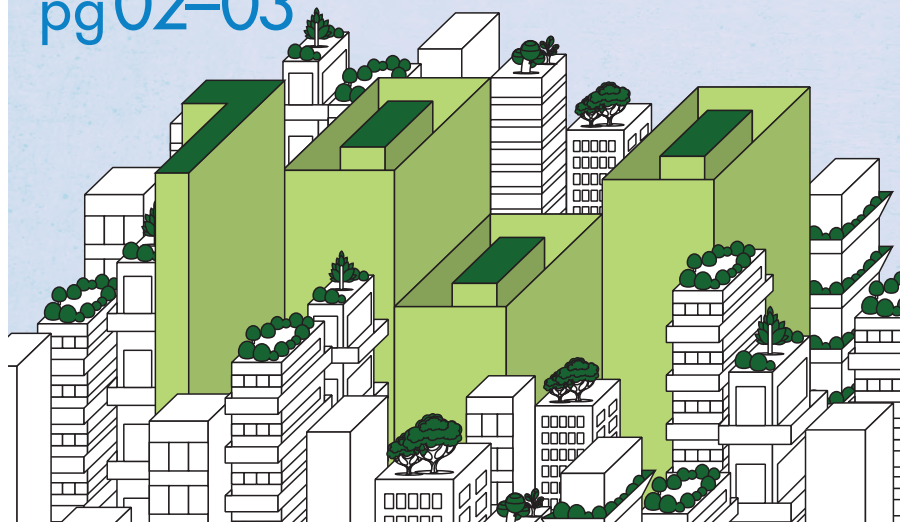
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Editorial Committee:

Chief Editor: Jeanna Das
Editor: Sherlyn Chen
Sub-Editor: Leong Ee Leng

Contributors for this issue:

Tan Li Sirh
Wong Ngian Chung
Matilda Kenanga
Koh Shiang Chi
Kelvin Phua
Irene Ho
Lam Fei Yen

Your views and contributions:

Let us know what you think about Pillars. You are also welcome to contribute an article, subject to our approval. Please attention it to The Editor, Pillars if you send by post or fax to the BCA address stated. Alternatively, you can email to bca_enquiry@bca.gov.sg

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Tel: 1800-3425 222 Fax: 6325 4800
Email: bca_enquiry@bca.gov.sg
Website: <http://www.bca.gov.sg>

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EMBRACING CHALLENGES AND OPPORTUNITIES

Dear Readers,

As the saying goes, great opportunities are usually disguised as unsolvable problems. What we often view as challenges can in fact be opportunities to help us learn and grow.

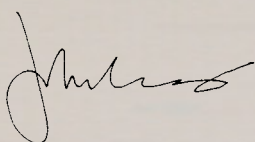
For instance, when we started our green building movement in 2005, there were only a few green building projects in Singapore. One of the challenges then, was to change mindsets and persuade the industry to make environmental sustainability a cornerstone in the design, construction, operation and management of buildings. Now, in 2012, I am pleased to announce that we recently celebrated our 1000th Green Mark building project, an achievement which would not be possible without the industry's concerted effort to green Singapore's built environment.

We have been putting in place various assistance schemes and programmes for companies to take charge of their own progress and to chart the future of our built environment. For example, the Green Mark Incentive Scheme for Existing Buildings (GMIS-EB) and Building Retrofit Energy Efficiency Financing (BREEF) Scheme encourage the industry to chart the way forward for greening existing buildings.

On the productivity front, we launched the new Multi-skilling Scheme recently, to provide an alternative pathway for the industry to upgrade their experienced workers. Workers who are versatile and competent in multiple trades can be deployed for more tasks on-site, thus improving construction productivity.

To develop a capable construction workforce, we not only attract new entrants through promotion of our recently launched apprenticeship, scholarship and sponsorship programmes; we also have in place a range of training and development courses to meet the industry's needs. Read about how the BCA Academy's Master of Science (MSc) in Sustainable Building Design supports Singapore's sustainable development and demand for green professionals.

While we are challenged to improve productivity, upgrade our workers and promote sustainable development in our industry, I urge industry professionals to take this opportunity not just to constantly review and improve the way we build but also to adopt workable new ideas and innovation to transform our industry. **P**



Dr John Keung
Chief Executive Officer





BCA CELEBRATES 1000TH GREEN BUILDING MILESTONE

RESIDENTS 'WALK THE GREEN TALK' TO CELEBRATE SINGAPORE'S 1000TH GREEN BUILDING.

On 26 February 2012, BCA celebrated its 1000th green building milestone since the Green Mark Scheme was introduced in 2005, awarding Pasir Ris Sports and Recreation Centre the BCA Green Mark Gold^{Plus}. About 500 residents from Pasir Ris-Punggol Group Representation Constituency (GRC) participated in BCA's 'Walk the Green Talk' event.

Led by Deputy Prime Minister (DPM) Teo Chee Hean, who was accompanied by other Members of Parliament (MPs) from Pasir Ris-Punggol GRC and Punggol East Single Member Constituency, the walk began at Pasir Ris Elias Community Club and ended with a memorable award ceremony at Pasir Ris Sports and Recreation Centre. **P**

"We are delighted to receive the Green Mark accolade as it recognises the deliberate effort that we have taken to create a user-friendly and eco-friendly Pasir Ris Sports and Recreation Centre. The 'sports in a park' concept with green designs and environmentally friendly features, as well as the seamless connection to the neighbouring park and water body, will not only increase the awareness of environmental sustainability among Singaporeans, but also create a conducive place for families to bond and enjoy sports."

MR LIM TECK YIN, CEO OF SINGAPORE SPORTS COUNCIL



"We are glad that more building owners and developers are coming forward to 'green' their buildings. Moving forward, we want to reach out to building occupants or the consumers, to encourage them to 'walk the green talk' and follow the government's lead in creating the demand for more environmentally friendly buildings in the near future. Our latest Green Mark schemes, which assess office interiors, schools and restaurants, are part of BCA's plan to place more emphasis on users' behaviour and cultivate them to play a greater role in Singapore's green building movement."

DR JOHN KEUNG, CEO OF BCA

“I am delighted that Pasir Ris Sports and Recreation Centre is now the 1000th Green Mark building project. This is a significant milestone in the building and construction industry’s efforts to incorporate green design and practices in new and existing buildings in Singapore. This will also help to mitigate climate change as the building sector contributes 16% of Singapore’s total carbon emissions. Indeed, the BCA Green Mark Scheme is an integral part of our national efforts to reduce emissions, contribute to global climate change mitigation efforts, and create a sustainable living environment for our future generations.”

DEPUTY PRIME MINISTER TEO CHEE HEAN

Since 2005, the number of Green Mark building projects in Singapore has increased exponentially from only 17 in the first year to 1,000 today. Singapore is well on target to ‘green’ at least 80% of all its buildings by 2030. At present, about 13% of the buildings in Singapore have achieved the BCA Green Mark standard, translating to a gross floor area of 29 million m².

Previous page

Left Below | DPM Teo received the Green Mark Award from Mr Quek See Tiat, Chairman of BCA and Dr John Keung, CEO of BCA.

Right Above | DPM Teo, MPs from Pasir Ris-Punggol GRC and Punggol East SMC, as well as CEOs of BCA and SSC, flagged off the brisk walk.

Right Below | About 500 residents from Pasir Ris-Punggol GRC participated in BCA’s ‘Walk the Green Talk’ event.

KEY GREEN FEATURES OF PASIR RIS SPORTS AND RECREATION CENTRE



Energy and water efficient fittings

- Extensive use of energy efficient LED lighting in key areas such as the foyer, offices, meeting rooms and corridors.
- Majority of the water efficient fittings were selected from the Water Efficiency Labeling Scheme (WELS).

Ventilation in common areas

- The building is designed to reduce reliance on air-conditioning by having most of the common areas naturally ventilated.

Irrigation system

- Rainwater is harnessed to irrigate the landscaping, therefore reducing consumption of potable water.

Greenery

- Extensive use of greenery to reduce heat island effect. Greenery provides a seamless transition to the adjoining Pasir Ris Town Park.

Rain garden for storm water management

- Rainwater is channelled into the rain garden. The rain garden acts as a natural filter prior to releasing the water into the public drainage network.

Photovoltaic system

- Installation of about 2,400m² of solar energy (photovoltaic) panels on the roof to tap on the sun’s energy.

Human powered energy

- Active engagement of community – gym equipment allows gym users to generate energy to power up the television.

Sun-shading

- Materials reclaimed from the old National Stadium’s timber seats are recycled as louvers, acting as a sun-shading feature on the external facade.



ATTRACTING FRESH TALENTS TO THE BUILDING AND CONSTRUCTION INDUSTRY

PROMOTION OF NEW APPRENTICESHIP, DIPLOMA SCHOLARSHIP AND SPONSORSHIP PROGRAMMES

In an effort to attract new entrants to the building and construction industry, BCA promoted the newly launched Apprenticeship, Diploma Scholarship and Sponsorship programmes at the Built Environment Scholarship, Training and Career Fair 2012, as well as the various open houses at BCA Academy and local polytechnics. Read on to find out more!

BUILT ENVIRONMENT SCHOLARSHIP, TRAINING AND CAREER FAIR 2012

On 14th January 2012, BCA organised the 4th Built Environment Scholarship, Training and Career Fair at BCA Academy, in conjunction with the BCA Academy's Open House. BCA promoted built environment courses and careers to jobseekers and students, in partnership with 28 leading industry firms and associations, as well as academic institutions.

The event attracted students and jobseekers who are interested in pursuing built environment related courses and careers. The



Above | Talks on the Singapore Sports Hub project and Building Information Modelling.

Fair was an effective platform for organisations' corporate branding and outreach, with some conducting talks on scholarships, in-company career development, professional training and upgrading, corporate introductions, iconic projects, and construction information technology.

BCA conducted tours to the BCA Gallery and Sensory Garden, BCA's Zero Energy Building (ZEB), and the Centre for Construction Information Technology (CCIT), to create awareness on the latest industry developments and what the built environment entails.

BCA also actively promoted built environment careers and programmes such as the BCA-Industry Built Environment Undergraduate Scholarship, as well as the recently launched Built Environment Apprenticeship and BCA-Industry Built Environment Diploma Scholarship and Sponsorship.



Left | Guided tour of the BCA Gallery.

Below | Career booth of Dragages Singapore at the Built Environment Scholarship, Training and Career Fair 2012.



OPEN HOUSE AT BCA ACADEMY AND POLYTECHNICS

Besides the career fair, BCA also promoted the Diploma Scholarship and Sponsorship programmes at the open houses of BCA Academy, Singapore Polytechnic, Temasek Polytechnic and Ngee Ann Polytechnic. These were targeted at 'O' Level and ITE graduates who are taking up built environment diploma courses.

Overall, the outreach efforts were successful as they laid a strong foundation for BCA's future collaborations with the academic institutions. Students and parents were also exposed to the programmes that BCA offers. **P**

Above & Left | BCA introduced the Diploma Scholarship and Sponsorship programmes to students at the polytechnics' open houses.

JOHNSON CONTROLS SINGAPORE GREEN TIE AFFAIR

SECOND SINGAPORE GREEN TIE AFFAIR – AN EDUCATIONAL GREEN BUILDING NETWORKING EVENT



On 3 February 2012, Johnson Controls held the second Singapore Green Tie Affair, which was graced by Dr John Keung, CEO of BCA. The educational and networking event is a platform for information sharing on the latest in local and global energy management, legislation, practices, trends, as well as services and solutions.

In his keynote address, Dr Keung emphasised how “green” events like these serve as a good platform to share information and insights on green building developments, and spur each other to green our built environment. Dr Keung and Mr Toh Eng Shyan, one of BCA’s Deputy Directors

of the Green Mark Department, also spoke on the importance of greening existing buildings, as well as various incentive schemes to support building owners to carry out energy efficiency programmes.

Other speakers at the event included Professor Lee Siew Eang, Technical Advisor to the Singapore Green Building Council (SGBC), and Johnson Controls’ speakers – Mr Clay Nesler, Vice President, Global Energy and Sustainability; Mr Rob Moulton, Vice President, Marketing and Solutions–Asia; and Mr Terence Tan, Director, Integrated Building Services.

Topics covered include the importance of green building products, a systematic approach to energy and sustainability management, as well as the operations of smart buildings. In addition, speakers elaborated on chiller plant optimisation and management systems to improve energy performance. **P**

Left | From left to right: Mr Clay Nesler, Mr Rob Moulton, Prof Lee Siew Eang, Ms Helen Wu, Mr Toh Eng Shyan and Mr Terence Tan.

Right | Dr John Keung, CEO of BCA, delivered the keynote address at the Singapore Green Tie Affair.

▶ Building Retrofit Energy Efficiency Financing (BREEF) Scheme

The BREEF Scheme helps commercial building owners, Management Corporation Strata Titles (MCSTs) and Energy Services Companies (ESCOs) finance the upfront costs of energy efficiency retrofits and achieve the minimum Green Mark certified rating.

▶ Green Mark Incentive Scheme for Existing Buildings (GMIS-EB)

The S\$100 million GMIS-EB incentivises owners of existing buildings to carry out energy efficiency audits of their air-conditioning systems and retrofit their buildings. BCA co-funds up to 35 per cent, or a maximum of S\$1.5 million, of the costs of energy efficient equipment installed. It also bears half the cost of conducting an energy audit on buildings.


BCA SERVICE EXCELLENCE DAY

TO PROMOTE COMMITMENT TO QUALITY CUSTOMER SERVICE, BCA RECOGNISES THOSE WHO HAVE GONE THE EXTRA MILE

BCA's Excellent Service Stars

(Front Row from Left): Chua Beng Leong, Doris Teo, Adelbert Ngui, Mary Siow

(Back Row from Left): Jamal Hashim, Chuang Siok Cheng, Tan Hoon Wee, Motalif bin Mohamed

On 13 February 2012, BCA celebrated its 6th Service Excellence Day recognising staff for their high standards of customer service, as well as emphasising the need and importance of service excellence for our customers. 



"I am very happy to win this award, but this is not the end. I will continue doing my best to serve my customers. You have to put yourself in the shoes of the customers and understand their needs."

MS DORIS TEO, BCA'S SERVICE EXCELLENCE SUPER STAR.



BCA'S ACHIEVEMENTS IN SERVICE PERFORMANCE

- Following the Singapore Quality Award (SQA) assessment in October 2011, BCA achieved a major milestone in our SQA journey and was awarded the Singapore Quality Class (Star). We also achieved the new Service Class as well as the renewal of the Innovation Class with an improved score.
- In the Pro-Enterprise Ranking Survey 2011, BCA secured the fourth position out of 26 government agencies in two successive years.
- BCA also received the Action Community for Entrepreneurship (ACE) Awards for pro-enterprise agencies.
- 53 BCA staff received the Excellent Service Awards (EXSA) in 2011

"Service Excellence is not only about 'going the extra mile'. It is also about anticipating the needs and anxieties of our customer, be it relating to legislation or on a personal level, even before they are aware of them."

DR JOHN KEUNG, CEO OF BCA

PUSHING THE FRONTIERS OF GREEN BUILDINGS

BCA IS ON TRACK TO GREEN 80% OF SINGAPORE'S BUILDINGS BY 2030, WITH RESEARCH AND GREATER ADOPTION OF GREEN BUILDING TECHNOLOGIES.



Above | Chairman of the Green Building R&D Workgroup, Mr Lam Siew Wah shared the Green Building R&D Framework at the International Green Building Conference 2011

Having set the target to green 80% of buildings in Singapore by 2030, BCA is constantly seeking new and better ways to green buildings. Research and Development (R&D) has been central to BCA's strategy to encourage greater adoption of green building technologies. BCA is also charting the way forward for green building R&D, creating greater collaboration between the agencies, academia and industry.

GREEN BUILDING R&D FRAMEWORK

Charting the way forward

To champion and coordinate green building R&D, an inter-agency Green Building R&D Workgroup was formed, chaired by Mr Lam Siew Wah, Deputy CEO, BCA, and comprising senior representatives from key agencies such as HDB, URA, A*STAR, EDB, JTC, EMA, NEA, NParks, IDA and SPRING. To determine the scope of green building R&D, the Workgroup developed the Green Building R&D Framework. Various stakeholders were consulted in a series of brainstorming workshops and roundtable discussions involving the industry, research community and government agencies. The draft framework was also presented at two major

events in 2011 – the Urban Sustainability R&D Congress and the International Green Building Conference (IGBC), as part of efforts to gather views from a wide spectrum of stakeholders.

The Framework will serve as a guide for R&D grant calls on green buildings, focusing on developing high-impact, cost-effective solutions for green buildings in the tropics.

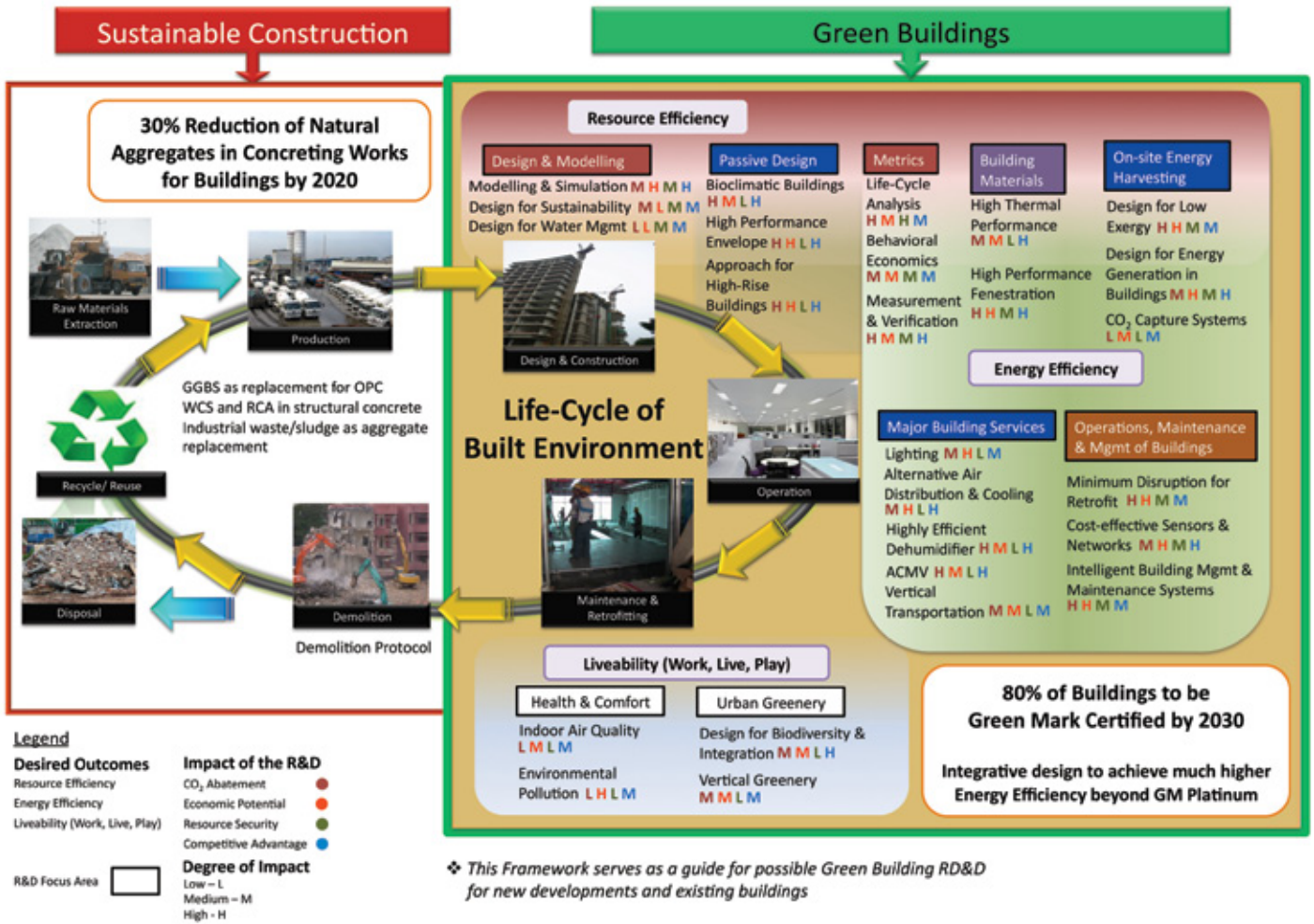
For more information on the Green Building R&D Framework, please refer to

http://www.bcaa.edu.sg/greenbldg_rnd_framework.aspx

For enquiries on Green Building R&D Framework, please contact

Ms Tan Li Sirh or Mr Wong Ngian Chung at bca_research@bca.gov.sg

Green Building R&D Framework (over the next 5 years)



A*STAR-MND GREEN BUILDING R&D GRANT CALL A Public Private Partnership Model for R&D Collaboration

BCA worked closely with MND and A*STAR to roll out a pilot joint grant call for green buildings in April last year. The grant call adopted a Public Private Partnership (PPP) approach to encourage industry and research institutes to collaborate and submit joint R&D proposals. Through such collaborations, it would help ensure that solutions developed also address challenges faced by the industry.

A total of nine research projects in the areas of energy efficiency and building facade materials have been selected for the award. Moving forward, BCA will continue to work with MND and A*STAR to roll out similar PPP R&D grant calls, with reference to the Green Building R&D Framework.

“A novel desiccant/ nano-woven membrane air dehumidification to enhance building energy efficiency” is one of the nine projects that will benefit from the A*STAR-MND Joint Grant Call on green buildings. The project is led by Professor Ernest Chua Kian Jon from the School of Mechanical Engineering, National University of Singapore, and Dr. Richard Kwok, from ST Kinetics Ltd. They will look into the development of a dehumidification system that will relieve the latent load cooling of chillers. A highly effective moisture removal system will improve the cooling of the air supply to buildings, which will result in a significant improvement to the energy efficiency of the chillers by at least 40%.



“BCA’s sponsorship of the Joint Call for Proposals in Green Building R&D is important given their key role in setting the standards and requirements for energy efficiency in Singapore’s built environment. In addition, BCA brings an awareness of the technology issues affecting building owners who are looking to improve the energy efficiency of their properties.”

CHRIS CRAWLEY,
MANAGER, SKYCOOL PTE LTD

Left | Roundtable discussion with the industry, research community and government agencies.

In the area of building materials, a project led by Dr Han Ming-Yong from the Institute of Materials Research and Engineering, A*STAR, in collaboration with Dr Uma Maheswaran from Jurong Consultants Pte Ltd, will also receive funding. The project looks at the “Development and Testbedding of Nanostructured Phase Change Materials (PCMs) in Window Blinds for Glazed Buildings”. The team will explore designing and engineering state-of-the-art window blinds incorporating nanostructured PCMs capable of reducing solar heat gain. This is suitable for tropical climates, like Singapore, where solar heat gain through glass windows is a major concern throughout the year.



INNOVATION CLUSTER FOR ENERGY EFFICIENCY

Optimising Building Clusters

In a number of developed countries, the focus of green building R&D is starting to shift towards the clustering of buildings and optimisation of systems and networks, which could provide the next quantum leap in project delivery and energy performance. In 2012, the United States Department of Energy awarded over US\$100million of funding to a consortium led by Pennsylvania State University for the Greater Philadelphia Innovation Cluster (GPIC) project. The consortium comprises representatives from local regulatory bodies, economic development agencies, universities and global technological companies like IBM and PPG.

On 12 January 2012, BCA organised the “Energy Efficient Innovation Cluster Workshop”, to raise awareness among

various stakeholders of developments for building clusters. Over 60 participants from public agencies, industry and research institutes attended the workshop.

At the workshop, Prof Lam Khee Poh from Carnegie Mellon University shared his thoughts on the GPIC project. Mr Tsoi Mun Heng, Director, Energy National Innovation Challenge, also talked about the priorities of the National Research Foundation (NRF) and the R&D landscape in Singapore.

Moving forward, BCA will organise more workshops and focus group discussions to improve the engagement with various stakeholders and organise learning journeys to USA to study the Greater Philadelphia Innovation Cluster. **P**



“The session was very informative and useful for the industry to understand the direction and intention of the authorities in this area. It is great that the industry has the endorsement and sponsorship from authorities to work together with institutions to develop potential technologies. I look forward to more opportunities this year for similar schemes, in order to build up local capability and generate further momentum so that we can start seeing meaningful developments sooner rather than later.”

BENJAMIN HO
HEAD, ENERGY & POWER
CHIEF TECHNOLOGY OFFICE, ST KINETICS LTD



Top | Presentation by Prof Lam Khee Poh, Carnegie Mellon University.

Left Above | Presentation by Mr Tsoi Mun Heng, National Research Foundation.

Left Below | Panel Discussion facilitated by Mr Ang Kian Seng, Director of Research, BCA.

For more information on the A*STAR-MND green building grant call and Innovation Cluster for Energy Efficiency, please contact:

Ms Matilda Kenanga at
Matilda_Kenanga@bca.gov.sg

Mr Wong Ngian Chung at
Wong_Ngian_Chung@bca.gov.sg

R&D IN GREEN BUILDINGS

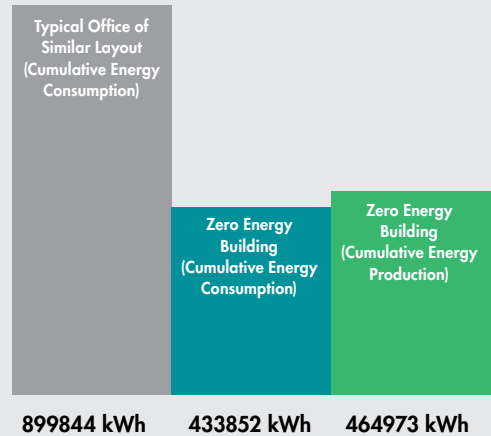


Zero Energy Building @ BCA Academy

BCA's Zero Energy Building (ZEB @ BCA Academy), is South-East Asia's first Zero Energy Building that was successfully retrofitted from an existing building. The building has achieved a net zero energy consumption for two consecutive years, despite its load increasing year on year. The ZEB @ BCA Academy is 50% more efficient than a conventional office building of similar space usage and operating hours, and is a platform for test-bedding new and innovative green building technologies.

From Oct 2009 to Feb 2012

The ZEB produces more energy than it consumes for two consecutive years.



241,786kg
CO₂ REDUCED

"The successful completion of this research project has brought more than 4000 local and overseas visitors to visit the building. I hope this will help to promote sustainable construction especially to the younger generation and encourage our stakeholders to embrace the use of RCA in their development projects."

DR HO NYOK YONG,
SAMWOH CORPORATION PTE. LTD.



Samwoh Eco-Green Building

SamWoh's Eco-Green Building is the first of its kind to be constructed using 100% Recycled Concrete Aggregates (RCA) for various structural concrete applications.

SUSTAINING FUTURE "GREEN" TALENT

AS THE BUILDING AND CONSTRUCTION INDUSTRY GROWS, SO DOES THE NEED FOR TALENT TO HELM THE GREEN MOVEMENT OF THE FUTURE. BCA ANSWERS THE CALL WITH VARIOUS PROGRAMMES THAT HELP FILL THE GAP.



BCA developed a holistic training framework to support Singapore's sustainable development and meet the industry's increasing demand for green professionals. BCA's education arm, the BCA Academy (BCAA), currently offers two Master programmes – the Master of Science (MSc) in Sustainable Building Design and MSc in Facility and Environment Management.

In this issue, we interview some students to hear what they have to say about the MSc in Sustainable Building Design. **P**

For more information about the programme, please visit www.bcaa.edu.sg/MScSBD.aspx

ABOUT THE MSc IN SUSTAINABLE BUILDING DESIGN

The MSc in Sustainable Building Design is a two-year part-time programme, jointly organised by the University of Nottingham and the BCAA. It aims to build up a talent pool of green building professionals with expertise and capabilities in the area of green building design, a key component of sustainable development.

The curriculum emphasises the importance of adopting an integrated approach to sustainable building design and its associated technologies, therefore addressing the needs of the green building profession. This includes passive / bioclimatic design, urban design, renewable energy technologies and solutions, energy efficient services and systems, computer modelling and simulation, and total building performance solutions.



"The course has equipped me with knowledge on sustainable design strategies, sustainability in tall buildings, considerations and design parameters for engineering, as well as green building technologies for the tropics. If your

passion is on sustainable design and strategies, and you are interested in energy efficient design and green building technologies, this course is for you. I have benefitted immensely from this course and would definitely encourage everyone to attend."

MR EUGENE SEAH

JOINT MANAGING DIRECTOR
DAVIS LANGDON & SEAH SINGAPORE PTE LTD
AND ASSISTANT PROFESSOR (ADJUNCT),
DEPARTMENT OF REAL ESTATE, NATIONAL UNIVERSITY OF SINGAPORE



"The programme is structured to encourage students to adopt a first principle approach to the climate and environment, allowing discourse on suitable and innovative approaches to solving environmental issues.

In this programme, students are not taught solutions but instead, learn how to find creative answers to problems. Such programmes are important in upgrading the industry's knowledge and expertise because it builds a sound foundation for the industry. Without such foundations, the green building industry would be unable to engage in deeper discourse on sustainability issues."

MS ANNIE YIM

SENIOR MANAGER, PRODUCT & TECHNICAL SERVICES
THE ASCOTT LIMITED



"It's a well-balanced course that helped me recognise and understand the multi-dimensional issues surrounding green building design and how various mitigation and adaptation strategies could be explored to enhance sustainability

in our built environment. It also increased my awareness and appreciation of integrated building design from a holistic perspective, including both passive and active environmental technologies and strategies. As part of the course, I also learned to use simulation tools to help appraise and explore optimal building design solutions. The opportunity to learn from this course is tremendous."

MR TERENCE TAN

DIRECTOR, INTEGRATED BUILDING SERVICES
JOHNSON CONTROLS (S) PTE LTD



"The programme allows industry players from all fields, with different objectives, to come together and align themselves towards the same goal – to achieve sustainability in a project. The dynamics generated from this

process can be carried through individuals and in their future projects, creating a positive influence on fellow project peers to improve our built environment."

MS CARRIE CHAN

SENIOR ENGINEER
T.Y.LIN INTERNATIONAL PTE LTD



"This programme is one of the platforms to generate and share ideas to push the boundaries in improving our built environment. At the same time, there is a need to prepare the industry to plan for sustainable development and adopt integrated design

processes, methodologies and tools. I hope that this programme is only a start, and that there will be more of such courses to meet the industry's needs in the future."

MR TAN SHAO YEN

EXECUTIVE VICE PRESIDENT (ARCHITECTURE)
CPG CONSULTANTS PTE LTD



"The programme has given me the opportunity to come in contact and work closely with professionals from other facets of our industry and gain invaluable knowledge in integrated design."

MR OWEN WEE

ASSISTANT VICE PRESIDENT
(ARCHITECTURAL)
SURBANA INTERNATIONAL
CONSULTANTS PTE LTD

NEW MULTI-SKILLING SCHEME FOR CONSTRUCTION INDUSTRY

RAISING CONSTRUCTION PRODUCTIVITY THROUGH WORKFORCE UPGRADING

On 1 July 2011, BCA and MND implemented a construction skills framework to encourage construction firms to retain and up-skill their workers. Under the framework, better-qualified workers with at least four years of local construction experience and acceptable qualifications qualify for the “Higher Skilled” category and lower foreign worker levy. Currently, a majority of the workers qualify through BCA’s Construction Registration of Tradesmen or CoreTrade skills route.

BCA is introducing a new Multi-skilling Scheme to provide an alternative pathway for the industry to upgrade their experienced workers. The Multi-skilling Scheme complements the CoreTrade Scheme, which caters to workers specialised in key construction trades. It aims to build up a pool of workers who are competent in multiple construction trades to carry out more than one type of work tasks on-site. Employers will have greater flexibility in deploying multi-skilled workers on-site, reducing the downtime and improving their productivity.

This move to enhance the quality of the construction workforce through the retention of skilled and experienced workers is part of the overall Construction Productivity Roadmap launched last year. In line with the Government’s push for productivity-driven economic growth, the roadmap charts the transformation of the construction industry and aims to realise the vision of a highly integrated and technologically advanced construction sector led by progressive firms and supported by a skilled and competent workforce in 2020. **P**

“Contractors with multi-skilled workers will find it easier to deploy them according to the projects’ manpower needs, as they can perform two to three different types of work throughout the construction process. This can help us reduce time required to mobilise workers, which would otherwise result in time loss to projects. This recognition also provides an avenue for workers to attain the “Higher Skilled” status apart from CoreTrade.”

Dr Ho Nyok Yong
President of Singapore Contractors
Association Limited (SCAL).



BCA will start to register construction workers for the Multi-skilling Scheme, from 1 July 2012. Registered workers will have to meet the following stipulated criteria:-

- Four years of construction experience in Singapore; and
- Two acceptable certifications. The first certification can be a Skills Evaluation Certificate (SEC) or Skills Evaluation Certificate (Knowledge), SEC(K), conducted by BCA; or Sijil Pelajaran Malaysia (SPM) certification for Malaysian work permit holders. The second certificate must be a SEC(K) in a different trade from the first certification.

Briefing sessions on the Multi-skilling Scheme have been conducted for industry firms since March 2012.



ENSURING THE STRUCTURAL SAFETY OF OLD BUILDINGS

MEASURES TO MITIGATE DANGERS IN OLD BUILDINGS



The mandatory Periodic Structural Inspection (PSI) scheme came into effect in 1989. All buildings in Singapore have to be subjected to mandatory PSI, under the Building Control Act.

DETERIORATION OF BUILDINGS



Top | Serious spalling of concrete.

Above | Cracks on non-structural and structural members e.g. brick wall or reinforced concrete walls, beams, columns or slabs.

Common structural defects reported during PSI include spalling concrete as well as cracks on columns, beams and slabs.

Causes for these defects include lack of maintenance, overloading, natural deterioration, construction errors, accidental impact, or ground settlement. Such defects, if found on certain critical columns in void decks of old residential buildings, can lead to serious safety implications if left unattended.

As buildings age, regular inspection, proper usage and maintenance by building owners are important to ensure that these buildings remain structurally safe.

To ensure older building structures are properly maintained, BCA issued a circular to Professional Engineers (PE) on 20 January 2012, advising them to pay special attention to small, slender columns in void decks of old residential buildings built before 1 January 1989, using grade 20 concrete.

Building owners are ultimately responsible for the structural safety of their buildings. They are advised to be vigilant and ensure that their buildings undergo proper maintenance with no overloading due to unauthorised usage. This will prolong the life span of buildings and keep them safe.

IF YOU OWN A BUILDING, YOU SHOULD:

- i. Carry out regular and proper building maintenance
- ii. Look out for potential structural defects (e.g. concrete spalling, cracks, signs of external impact)
- iii. Engage a PE for advice if early signs of deterioration or distress are discovered
- iv. Promptly carry out remedial works as recommended by the PE

CONTINUE



A supplementary inspection checklist was introduced to guide PEs in identifying early signs of defects, and to recommend full structural investigations if they sense any potential danger. **P**

- THE SUPPLEMENTARY CHECKLIST INCLUDES:**
- a) Design grade
 - b) Small or slender columns
 - c) Columns subjected to bi-axial bending or bending in minor axis
 - d) Columns un-braced along minor axis
 - e) Vehicular impact on columns at void deck car parks

A complete checklist for periodic structural inspection of existing buildings can be downloaded at:
http://www.bca.gov.sg/PeriodicStructuralInspection/others/PSI_PE.pdf



“With this new checklist, I am reminded to be extra careful in assessing defects on key structural elements of old buildings. It helps me to inspect older buildings thoroughly.”

ER. MAH SEONG WEE, PSI PE

GRECO AND BECO SPREAD THE GREEN MESSAGE AT UNITED SQUARE MALL!

DROP BY LEVEL 1 OF UNITED SQUARE MALL AND CHECK OUT THE EDUCATIONAL WALL DISPLAYS THAT ARE PART OF BCA’S OUTREACH INITIATIVE. THEY WILL BE ON DISPLAY TILL JUNE 2012.

What is a BCA Green Mark Building?

BCA GREEN MARK

The BCA Green Mark is a rating system for green buildings.

A BCA Green Mark building consumes less energy and water, and is designed and built with more environmental friendly features than non-green buildings.

Building and Construction Authority
 We shape a safe, high quality, sustainable and healthy built environment.

EVENT LINE UP

Workshop on Material Recycling for Sustainable Construction (4th Run)

25 & 26 APR

1/2 day seminar on "Ensuring Safe Design and Construction within Residential Estates – Challenges Affecting Neighbouring Properties" (NEW)

26 APR

Geotechnical Instrumentation for Engineers

02, 04, 09 & 11 MAY

Certification Course for Green Mark Facilities Manager

03 MAY–13 JUN

1-day Course on Design of Bolted and Welded Joints in Steel Buildings using Eurocode 3 (NEW)

03 MAY

Leadership in green building – Lecture series 08 Green BIM in Planning, Design & Construction (NEW)

04 MAY

1-day Geotechnical Seminar on Site Investigation & Soil Properties for Geotechnical Engineering Design (NEW)

10 MAY

BMSMA for Building Management Personnel

14–15 MAY



Certification Course in Measurement & Verification of Central Chilled-Water Plant Efficiency

14–16 & 23 MAY

2-day Build Smart Conference (NEW)

16–17 MAY

CONQUAS Training for Developers & Consultants

17 MAY

Certification Course in BIM Modeling (Structure Track)

21–22 MAY

05 JUN

Workshop on Preparing and Defending Loss and Expense Claims

22 MAY

Pile Foundations Design and Construction for Engineers

22, 24, 29 & 31 MAY

Course on Building Control Regulations for Site Supervisors

24 MAY

Understanding the Green Mark Criteria for Existing Building and Office Interior

30 MAY

International Conference in Workplace Safety & Health For the Construction Industry (NEW)

04–05 JUN

Workshop on Managing Project Teams Effectively

07–08 JUN

Site Investigation for Engineers

19, 21, 26 & 28 JUN

3-day Course on Project Management

21–22 & 25 JUN

Essential Knowledge in Construction Regulations & Management for Licensed Builders (English)

25–27 JUN

Internal Audit (QEHS) Course based on Quality ISO 9001, Environmental 14001 & Health & Safety OHSAS 18001

26 & 28 JUN

3, 5, 10 & 12 JUL

World Workplace Asia Conference & Exhibition 2012 (NEW)

25–27 JUL

Master of Science in Facility & Environment Management

SEP 2012 (REGISTRATION CLOSES ON 25 MAY 2012)

CONTACT:

BCA ACADEMY – BUSINESS DEVELOPMENT UNIT

DID: 6248 9843/824

EMAIL: bca_academy@bca.gov.sg



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For more details, please call **6248 9824** or visit www.bcaa.edu.sg/MScSBD.aspx.

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