

Pillars

WE SHAPE A SAFE, HIGH QUALITY, SUSTAINABLE AND FRIENDLY BUILT ENVIRONMENT | ISSUE 03/JUNE-JULY 2011

TIONG SENG BAGS THE MOST AWARDS

BUILDING EXCELLENCE

TIONG SENG LETS IN ON THE WINNING BUSINESS PHILOSOPHIES BEHIND THEIR RECENT MULTIPLE-AWARD WIN AT THE BCA AWARDS 2011

Adopt new technology

Tiong Seng's strategies

1995

Invested in advanced formwork system



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ISSUE 03 • JUNE–JULY 2011 • CONTENTS

pg 01 CEO'S MESSAGE

SPOTLIGHT

IN THE BUSINESS OF BUILDING EXCELLENCE



ROUND UP

- 10 AN EYE FOR GREEN DETAILS
- 12 ECO-CITY R&D
- 14 GREEN STEWARDS, FUTURE LEADERS
- 15 TOWARDS SUSTAINABLE CONSTRUCTION
- 15 AIMING FOR ZERO

TALKING POINTS

- 16 SPEAKING OUT ON INSPECTION

FEATURES

- 06 ALL SET TO "BUILD GREEN, ACT NOW"
- 08 IGBC SPONSORS' MESSAGES
- 18 BRINGING CHEER TO OTHERS

TAKE NOTE

- 19 NEW AMUSEMENT RIDES REGULATIONS
- 20 QUALITY ASSURED

HAPPENINGS

- 21 EVENT LINE UP

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RECOGNISING EXCELLENCE

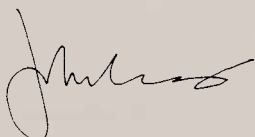
Dear Readers,

How time flies. We have stepped into the second half of 2011. Starting from this issue, we will be embarking on a series of cover stories featuring the companies and individuals who have clinched outstanding awards from the recent BCA Awards 2011 in May. This is, of course, to give them due recognition for their displays of excellence in the built environment, but most importantly, by doing so, we hope to provide valuable insights into the qualities that go into the making of a BCA Award winner.

For a start, we will hear from Tiong Seng, a multiple award winner including the prestigious BCA Built Environment Leadership Platinum Award. Besides utilising technologies to improve productivity such as precast and BIM, Tiong Seng is also investing S\$26 million to build an "Integrated Hub" facility to create a conducive working environment for its workers while achieving higher productivity and quality. This is a commendable effort indeed, and I would like to congratulate Tiong Seng for clinching BCA's Green Mark Platinum Award even before the Hub is due for completion later this year.

BCA was recently involved in the inaugural Urban Sustainability Research and Development (R&D) Congress held from 27 – 28 June 2011. This Congress is significant as Singapore, like many other cities, must step up to confront and find innovative solutions to meet the increasing land and resource constraints, and to address sustainable development challenges. The good news is that the government is pumping \$400 million into the urban sustainability R&D cause, which will allow more funds to be channelled to developing home-grown urban solutions and future capabilities. I am also proud to say that BCA's Zero Energy Building was conferred the Distinguished award for the Minister for National Development R&D Awards.

Lastly, I would like to extend an invitation for you to join us at the International Green Building Conference (IGBC) to be held from 13 to 16 September 2011 at the Suntec Singapore International Convention and Exhibition Centre. This year, the theme is "Build Green. Act Now." which is a strong call-to-action for building industry stakeholders to develop more sustainable built environments globally. The IGBC 2009 drew close to 1,000 participants from 23 countries worldwide and I am confident that we can expect high levels of local and international participation from our overseas partners and members of APEC and ASEAN as well this year. Come join us for an exciting week of learning and exploring as we ride on this sustainability wave. I look forward to seeing you there. 



Dr John Keung
Chief Executive Officer



Right | One of Tiong Seng's many notable projects included Singapore's iconic Integrated Resorts at Sentosa. (Joint venture with Kajima).



IN THE BUSINESS OF BUILDING EXCELLENCE

MR PEK LIAN GUAN, EXECUTIVE DIRECTOR AND CHIEF EXECUTIVE OFFICER OF TIONG SENG HOLDINGS LIMITED, LETS US IN ON HIS BUSINESS PHILOSOPHY THAT LED TO ITS MULTIPLE-AWARD WIN AT THE RECENT BCA AWARDS 2011, INCLUDING THE PRESTIGIOUS BUILT ENVIRONMENT LEADERSHIP PLATINUM AWARD.

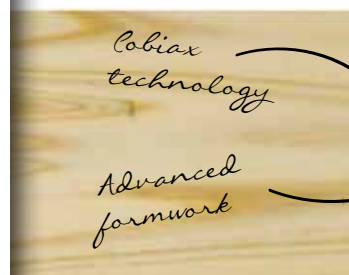
Having come a long way since it was first established in 1959, Tiong Seng has grown from strength to strength to emerge as one of the leading builders in Singapore's building construction and civil engineering industry. Mr Pek credits the company's success to its strong resolve to become an innovator and champion of good practices in shaping a safe, quality, sustainable and productive and built environment. Not one to rest on its laurels, Tiong Seng also actively engages its stakeholders, including clients, staff, consultants, sub-contractors, suppliers and other business partners, for a more collaborative effort towards construction excellence.



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Left | An example of BIM model.





UTILISING NEW TECHNOLOGIES TO IMPROVE PRODUCTIVITY

Tiong Seng has invested in a wide range of machinery and equipment over the years. Their first investment in advanced formwork systems was initiated in 1995.

Another niche technology the company has been developing over the years is automated precast capability, a highly efficient construction method that reduces construction time and required labour, as well as assures timelier deliveries while maintaining quality consistency.

Tiong Seng has also begun pilot trials with Building Information Modelling (BIM) technology - a 3D parametric technology that allows designers and constructors to streamline information sharing across the entire construction value chain - and is already seeing great potential in identifying potential clashes of services before the construction stage.

Recognising the growing importance of environmentally sustainable solutions, Tiong Seng has adopted Cobiax technology for its projects since 2009. Cobiax is an internationally-patented construction method which reduces carbon dioxide (CO₂) emissions and improves structural efficiencies by removing unnecessary deadweight of concrete slabs by up to 30% without modifying flexural strength.

“Adopting new technology is vital in promoting efficiency and driving higher levels of productivity in the construction industry. To date we have invested approximately S\$63 million in construction technologies. These investments have helped us ensure higher productivity and better quality.”

MR PEK LIAN GUAN

UPCOMING: A S\$26-MILLION “INTEGRATED HUB” FACILITY

The Prefab Hub is designed with a clear objective: To create a sustainable development and provide a conducive working and living environment for workers, while achieving better production quality and higher productivity.

Developed by Tiong Seng’s subsidiary Robin Village Developments Pte Ltd, the upcoming \$26-million facility incorporates pre-cast production capabilities, formwork assembly and maintenance as well as workers’ living quarters all under one roof.

To boost productivity, the Prefab Hub boasts two automated production lines incorporating state-of-the-art automated equipment from Germany as well as a centralised computer system, which reads information from computer-aided drawing (CAD) data files to control the manufacturing process as well as maintain production data and records.

Even though construction of the Prefab Hub is ongoing and is only expected to be completed later this year, it has already won this year’s Building & Construction Authority (BCA) Green Mark Platinum Award. >



Above | Artist impression of Tiong Seng’s upcoming \$26-million Prefab Hub.

Utilising new technologies to improve productivity

Building Information Modelling technology

Automated precast capability

DRAWING ON STRENGTHS AND DIVERSIFYING

Tiong Seng’s winning combination of a strong and established track record, wealth of experience spanning 50 years and A1 Grading from BCA, has led to its success in securing notable projects such as the Marina Bay Financial Centre, Sentosa Integrated Resorts, Capella Hotel, St. Regis Hotel & Residences, and private residential projects such as Parc Emily, Sky @ Eleven, Wilkie Studio, as well as addition and alteration works for Raffles City’s basement and underground linkway.

Many of these projects have gone on to win awards with the latest being the inaugural Construction Productivity Award (Platinum) awarded to Parc Emily and St. Regis Hotel & Residences. Its recent completed project, Shelford Suites, topping the CONQUAS scoring is another testament of Tiong Seng’s commitment in construction excellence.

Apart from commendations towards its drive for productivity, Tiong Seng continues to be recognised for its unrelenting commitment to workplace safety. This year, Tiong Seng bagged eight awards for Workplace Safety and Health from the WSH Council. The United Kingdom-based Royal Society For The Prevention Of Accidents (RoSPA) also named Tiong Seng as the Sector Winner (for the Housebuilding & Property Development Sector) in its Occupational Health & Safety Awards 2011 - the highest achievement in the category.

In recent years, Tiong Seng made its maiden foray into the medical sector by clinching a contract to build Singapore’s first integrated healthcare and hospitality hub, Connexion, through a joint venture with Samsung C&T Corporation.

At the same time, Tiong Seng also undertook MRT construction, with one of its major ongoing projects being a joint venture project with GS Engineering & Construction Corporation for the design and construction of stations and tunnels at Hillview and Cashew under Phase 2 of the MRT Downtown Line.



Above | Utilizing advanced formwork systems.

Right | Shelford Suites is one of Tiong Seng’s projects to have achieved a STAR rating under the new Tiered Rating for Quality Mark.



Left | Cobiax is an internationally-patented construction method which reduces carbon emissions and improves structural efficiencies.



UPCOMING PROJECTS AND DEVELOPMENTS

Tiong Seng was recently awarded CDL's "Glyndebourne" and HDB's "Waterway Terraces" projects. "Glyndebourne" is an exclusive 150-unit freehold luxury condominium located off Dunearn Road in the prime District 11 located on the present Copthorne Orchid Hotel Singapore site. "Waterway Terraces" is an award-winning "First Waterfront Housing" project situated along the Punggol Waterway.

Both projects are designed with eco-friendly features, and Tiong Seng is committed to implement green and environmentally sustainable solutions, while focusing continually on driving productivity, excellence and workplace safety.

FORECASTING THE BUILDING INDUSTRY'S FUTURE

Rising construction cost will continue to concern construction companies in Singapore. To meet these challenges ahead, BCA has laid out a roadmap that aims to help the construction industry raise productivity and launched financial incentives to encourage firms to adopt technology and upgrade workforce skills. **P**

"Builders should consider embracing advanced technology and build capabilities while capitalising on government grants to mitigate rising costs. While technology and training would be able to raise builders' productivity, there is a limit to how much they can achieve unless the industry is prepared to revolutionise conventional ways of doing things."

MR PEK LIAN GUAN



Above | Tiong Seng is the first builder to receive the prestigious Built Environment Leadership Platinum Award.

Left | Sky 11, one of Tiong Seng's many notable projects.

To boost productivity

Two automated production lines using state of the art automated equipment

ALL SET TO "BUILD GREEN, ACT NOW"

THE BUILDING INDUSTRY CAN LOOK FORWARD TO THE SINGAPORE GREEN BUILDING WEEK (SGBW) IN SEPTEMBER THIS YEAR FOR A SERIES OF REGIONAL EVENTS ON SUSTAINABLE DEVELOPMENT SOLUTION.

The annual SGBW, which was conceived in 2009, highlights Singapore's achievements in developing a tropical sustainable city on the international scene.

With two prior successful runs, BCA will be hosting the third SGBW comprising the second biennial International Green Building Conference (IGBC) alongside the Build Eco Xpo Asia (BEX Asia) at the Suntec Singapore International Convention and Exhibition Centre from 13 to 16 September 2011.

IGBC 2011

"Build Green. Act Now." The theme for IGBC 2011 is a strong call-to-action for building industry stakeholders to develop more sustainable built environments globally. Key areas covered by leading international experts include the immense challenge

of greening the built environment, particularly the large stock of existing buildings. Participants can also look forward to engaging in forums to share pertinent issues and solutions on sustainable developments.

New at this year's IGBC is a series of symposiums, such as the Tropical Sub-Tropical Green Building Councils Alliance Symposium and the Sustainable Infrastructure Symposium. To be held in collaboration with international partners such as the Green Building Alliance of Tropical and Subtropical Regions and the American Society of Civil Engineers (ASCE), they will offer greater insights into what sustainability entails.

Other key programmes include the World Green Building Council (WGBC) Asia Pacific Network Meeting, where Asia Pacific governments will discuss

Build Green. Act Now.
13 - 16 Sept 2011 • Suntec Singapore

Register Now @ www.sgbw.com.sg

how to work more closely with the private sector to accelerate the green building movement in their own countries. BCA will also be partnering the Waste Management and Recycling Association of Singapore (WMRAS) to organise a Sustainable Construction Symposium to explore strategic and innovative approaches to reduce the reliance on conventional building materials and methods.

BCA Green Mark Eco-tours, a well-received highlight in 2009, will return this year for Conference participants to visit exemplary green buildings and offices that won BCA's Green Mark Platinum Award, a day ahead of the actual Conference.

BEX ASIA 2011

Besides the Conference and workshops, BEX Asia will exhibit the latest green building products and services and is expected to attract about 8,000 professionals and decision-makers from the region. Last year, the exhibition saw more than 7,000 professionals and decision-makers during the three-day event, an increase of 20% over 2009. P



"This year's SGBW will be an even more extensive platform for government officials, decision-makers and green practitioners from all over the world to discuss the key issues on sustainability of the built environment and the solutions. With the high level of international participation expected from our overseas partners as well as from members of APEC and ASEAN, IGBC 2011 will be a premier green building conference in the Asia Pacific."

DR JOHN KEUNG
CEO, BCA

Top | IGBC 2011 will provide an extensive platform for participants to hear from leading international experts.

Below right | Close to 1,000 participants from 23 countries world-wide attended the inaugural IGBC 2009.



▶ Visit the official website at www.sgbw.com.sg for more information on the International Green Building Conference. Programme brochures and Conference registration forms can be downloaded from the official website.

IGBC SPONSORS' MESSAGES

DIAMOND SPONSOR:

“IGBC 2011 calls for “Build Green. Act Now” and this is in line with Lend Lease’s belief that “Every Action Adds Up”. For over 50 years, Lend Lease has been driving sustainability, turning our aspirations to reality through our commitment to act. Lend Lease has always been actively involved in collaborations with industry partners, stakeholders and government bodies in achieving our common goal towards sustainable developments; and we see our sponsorship of BCA’s 2011 International Green Building Conference as an important platform to facilitate that goal in Singapore and across Asia. Every action from like-minded stakeholders at IGBC 2011 will add up to take the industry’s sustainability goals to greater heights. ”



Rod Leaver,
CEO Asia, Lend Lease

PLATINUM SPONSORS:

“For over 125 years now, Johnson Controls has been committed to Sustainability. Since our founder, Professor Warren Johnson invented the electric Room Thermostat back in 1885, we have been the global leader in advocating efficient use of energy in buildings. Johnson Controls actively supports all Green Building Council initiatives and this pinnacle event in Singapore, the prestigious IGBC 2011. We will be showcasing some breakthrough technologies for the first time, at IGBC-BEX Asia 2011.

Building Efficiency is Our Name and Our Cause! ”



Helen Wu,
Country General Manager &
Managing Director,
Johnson Controls (S) Pte Ltd

“At Philips, we strongly believe in the need to drive the construction of Green Buildings and the green retro-fitting of existing buildings. With the commitment to share and reach out to like-minded industry players, we have participated in IGBC 2009 and sponsored WGBC 2010. Continuing with our efforts to inspire change in the industry, Philips is pleased to be a platinum sponsor at IGBC 2011. ”



Laura Ashton,
Head of Marketing, Vice President,
Philips Lighting Emerging Markets

GOLD SPONSORS:

“ As a leader for green sustainability and driving green architecture, Asia Square is proud to be the gold sponsor for the BCA International Green Building Conference 2011. Specially designed to incorporate innovative and cutting-edge green technologies, Asia Square, also known as the “Human Building”, is in full support of the conference’s agenda in discovering and adopting leading-edge solutions and global trends in sustainable architecture in Asia. Through this sponsorship, Asia Square seeks to advocate the importance of using design and technology to develop green buildings and further advance long-term sustainability. ”



Mark Rada,
Project Director,
Asia Square

“ Trane has been the premier provider of HVAC Equipment, Controls & Systems for Building Owners; creating and sustaining safe, comfortable and efficient environments. This event presents a great opportunity for Trane to showcase capability in providing energy efficient solutions that contribute to sustainable built environment. ”



Liew Kwong Chin,
Business Development Director
(SE Asia Region)

SILVER SPONSORS:

“ IGBC is a great platform for Carrier to extend the message of conservation and protection. Preservation of the environment and protecting our finite natural resources is a central tenet of Carrier’s business. Carrier has consistently demonstrated our adherence to these values by creating environmentally sound products that consume less energy and incorporate innovative materials. Our participation as a sponsor for BCA’s International Green Building Conference 2011 reflects our desire to spread the message of energy conservation and environmental protection. ”



Oon Wee Chin,
Director,
Carrier South East Asia

“ As a leading property developer, CDL has been a keen advocate and champion of the drive towards sustainable developments in Singapore for the past decade. Conserving as we construct, environmental and social responsibility is an integral part of our business and we are committed to finding eco-solutions to raise our environmental performance. As such we are pleased to support IGBC in developing a platform for the industry to share pertinent issues and innovative eco-solutions for sustainable built environments. ”



CITY DEVELOPMENTS LIMITED

Mr Chia Ngiang Hong
Group General Manager,
City Developments Limited

“ It is our desire that with our contribution as a sponsor, we will be able to strengthen this push for the “Green” message so that it can be widely propagated and more fellow industry players will come onboard to do their part for the sustenance of our fragile environment. ”



Tan Zhi Yong,
Managing Director,
China Jingye Engineering Corporation Limited
(Singapore Branch)

AN EYE FOR GREEN DETAILS

THE GREEN BUILDING EXHIBITION CONTINUES EDUCATING PEOPLE ABOUT GREENING THE BUILT ENVIRONMENT IN A FUN AND EFFECTIVE WAY.

BCA's roving Green Building Exhibition took place from 1–3 July 2011, this time at West Mall. Currently seventh in a series of eight roving exhibitions, the Green Building Exhibition aims to motivate Singaporeans to make a difference in creating a sustainable living environment for current and future generations.

Two of BCA's latest initiatives to engage the public on 'green issues' were unveiled at the launch of the Exhibition, with Mr David Ong, MP for Jurong GRC, as Guest-of-Honour. **P**



Limited edition 'Beco and Greco' water bottles were given out to shoppers who presented cut-out coupons as advertised in the local print media.

"A photo competition is an ideal way to celebrate the progress of green building developments in Singapore. We hope to bring out the essence and impact of green buildings on people in the community, as more and more green buildings fill up our built environment, through the eyes of photography enthusiasts and the camera lens,"

DR JOHN KEUNG,
CEO OF BCA.



"GREEN SHOTS", BCA GREEN MARK PHOTOGRAPHY COMPETITION 2011

A first-of-its-kind photography competition in Singapore, the BCA Green Mark Photography Competition 2011 is organised by BCA, in partnership with the Photographic Society of Singapore. Aptly titled 'Green Shots', the competition invites interested photography enthusiasts to choose a BCA Green Mark certified building of their choice in Singapore and to head down to the actual site to take photographs.

Shortlisted photo entries will be presented in an online mosaic format where participants and the public can view them easily.

THE PRIZES FOR THE PHOTOGRAPHY COMPETITION ARE:

- 1st prize: \$3,000
- 2nd prize: \$2,000
- 3rd prize: \$1,000
- 10 merit prizes of \$200 each

Log on to www.greenshots.bca.sg for more competition details.



BCA "BUILD IT GREEN CLUB"

Another initiative to engage the youth, the "Build it Green Club" is a place where youths aged 16 – 24 will be groomed into green building advocates and encouraged to explore careers in the green building industry. Young budding green advocates will enjoy exclusive invitations to a host of green building related talks and workshops, internship opportunities, as well as learning trips to Green Mark project sites in Singapore.

Sign up for a free membership at www.greenmark.sg/builditgreen today!



Touring the exhibits.

ECO-CITY R&D

THE FIRST CONGRESS ON URBAN SUSTAINABILITY R&D IS SERIOUS BUSINESS FOR THE FUTURE OF SINGAPORE AS A CITY-STATE.

The inaugural Urban Sustainability Research and Development (R&D) Congress held from 27-28 June 2011 at the Biopolis drew 800 participants ranging from government agencies, research institutes to private sectors to discuss R&D responses to national urban sustainability challenges as well as the collaboration of projects in 'living labs' such as Punggol Eco-town, CleanTech Park, Jurong Lake District and Marina Bay.

A key announcement was made on the government's commitment of S\$400 million to advance urban sustainability R&D as a strategic area of focus. The funds will go to building home-grown urban solutions and developing future capabilities, creating new economic opportunities, tackling Singapore's resource constraints and addressing sustainable development challenges.



Left | Minister of State for National Development and Manpower, BG Tan Chuan-Jin, in his opening speech as Guest-of-Honour at the opening ceremony of the R&D Congress.

"Like many other cities in the world, we will need to grapple with fresh challenges, from climate change, competition for resources and opportunities from megacities, changing demographics, and growing demands on urban services. The next chapter of the Singapore Story must be about us confronting these challenges with the same human ingenuity as we did before. I think Singapore has to blaze this trail to find our own innovative solutions. R&D, which this Congress seeks to foster, will be key to helping us solve this innovation challenge.

BG TAN CHUAN-JIN, MINISTER OF STATE FOR NATIONAL DEVELOPMENT AND MANPOWER, SINGAPORE



Left | Professor Peter Newman, one of the keynote plenary speakers at the Congress, commenting on R&D collaborations to meet key challenges.

"The world is in a race against time as it tries to wean itself off fossil fuels before climate change and peak oil wreck our economies. Cities are the engines which must bear the brunt of the required changes. Research must focus on reducing urban footprints whilst continuing to provide social and economic opportunity. This is the historic calling of urban sustainability researchers. Most of all, they need opportunities to demonstrate how to do this. Besides providing a national platform, the Congress aims to foster collaboration between stakeholders, which is important so that our achievements can be more than the sum of our parts."

PROFESSOR PETER NEWMAN, PROFESSOR OF SUSTAINABILITY, CURTIN UNIVERSITY OF TECHNOLOGY




DISTINGUISHED AWARD:
BCA'S ZERO ENERGY BUILDING



DISTINGUISHED AWARD:
HDB'S TREELODGE @ PUNGGOL

FIRST MINISTER FOR NATIONAL DEVELOPMENT'S R&D AWARDS

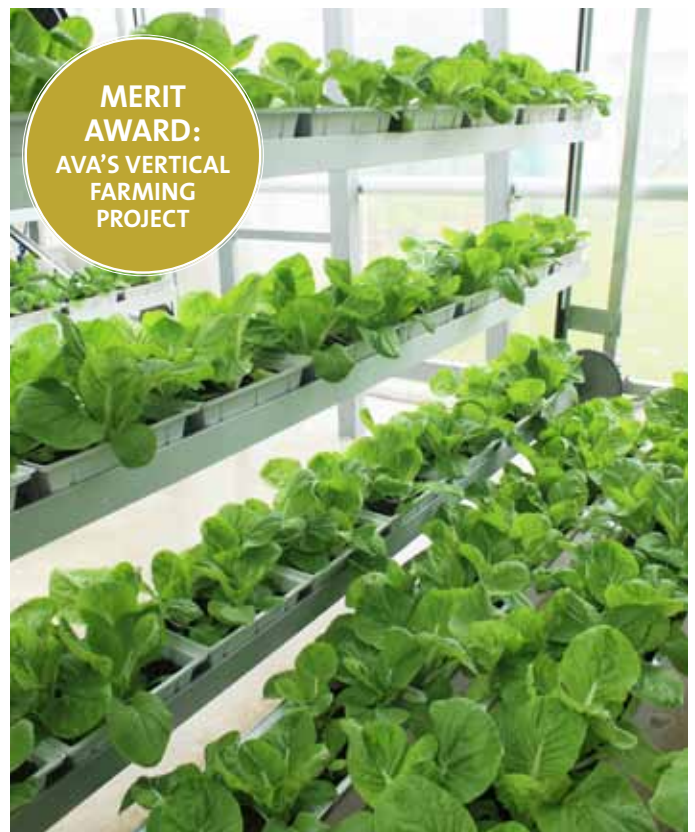
For the first time, Minister of State, Tan Chuan-Jin presented the Awards to three MND statutory boards to recognise and support technological innovations within the MND family. 

WHERE THE S\$400 MILLION WILL GO TO...

S\$300 million to drive 'Energy Resilience for Sustainable Growth' to develop cost-competitive energy solutions deployable in 20 years' time to improve energy efficiency, reduce carbon emissions and increase energy options.

S\$50 million to top up the Ministry of National Development's (MND) Research Fund to \$100 million, which will go to supporting research to address other aspects of urban sustainability, beyond energy.

S\$50 million to develop Singapore's food supply resilience and sustainability under the National Research Foundation's (NRF's) Competitive Research Programme (CRP) Call on 'Meeting Future Food Demands for Singapore', complementing MND's current S\$10 million Food Fund to enhance food supply resilience.



MERIT AWARD:
AVA'S VERTICAL FARMING PROJECT

GREEN STEWARDS, FUTURE LEADERS

GROOMING EXECUTIVES INTO GREEN STEWARDS, PRIMING FUTURE LEADERS IN ENVIRONMENTAL SUSTAINABILITY.



Above | The third batch of participants for the CMU-BCA Executive Development Programme on Leadership in Environmental Sustainability held at Carnegie Mellon University, Pittsburgh, US.

The third run of the CMU-BCA Executive Development Programme on Leadership in Environmental Sustainability was conducted from 18 to 23 April 2011 at the Carnegie Mellon University's campus in Pittsburgh, followed by site tours to Philadelphia in the United States. A highlight of the programme was the opportunity to visit and learn about the Greater Philadelphia Innovation Cluster for Energy-Efficient Buildings project, which aims to achieve national energy independence, and simulate private investment and quality job creation for the region. **P**

WHAT THE PARTICIPANTS HAD TO SAY:

"The trip serves to endorse some of the designs and technology that we plan to introduce in our upcoming Bendemeer Service Centre project. I was encouraged by the enthusiasm of the post-graduate students – a very committed group of students under the guidance of Prof Lam – in their research work on different methods to harness energy and different technologies to help conserve energy. I was also impressed that our architects have taken a keen interest in M&E systems, recognising that this is an essential part of creating a sustainable building."

NOEL CHIN, SENIOR ASSISTANT DIRECTOR,
NATIONAL HUMAN RESOURCE DIVISION,
MINISTRY OF MANPOWER

A LOOK AT SOME OF THE SITE VISITS TO PHILADELPHIA AND PITTSBURGH

These LEED project visits provided opportunities for participants to familiarise themselves with the technologies applied, as well as to interact with the building owners and facility managers.



Top | Robert L Preger Intelligent Workplace (a living laboratory at CMU)

Middle | Phipps Conservatory (LEED Silver Certification) & Center for Sustainable Landscape (Living Building Challenge)

Bottom |

- Greater Philadelphia Innovation Cluster (GPIC) for Energy Efficient Buildings, The Navy Yard
- One Crescent Drive, The Navy Yard (LEED Platinum Certification for Core & Shell)
- Three Crescent Drive, The Navy Yard (LEED Gold Certification for Core & Shell)

TOWARDS SUSTAINABLE CONSTRUCTION

BCA and the Waste Management and Recycling Association of Singapore (WMRAS) jointly organised a seminar on Sustainable Construction on 19 May 2011 as part of an on-going effort to promote sustainable construction in Singapore.

The speakers shared their experiences in implementing sustainable construction initiatives in local projects. Among the topics covered were updates on the implementation of SS 557 Code of Practice for Demolition, manufacturing of concrete with 100% M-sand, recycling of metal waste in Singapore, and the use of precast planks for site access. **P**



Above | The seminar attracted almost 150 participants from different industry sectors.

Right | Professor Jim Baird spoke on UK's initiatives in promoting sustainable construction such as the Site Waste Management Plan.



THE PANEL OF SPEAKERS

- Prof Jim Baird, Caledonian Environment Centre (CEC), Glasgow Caledonian University
- Er. Chew Keat Chuan, Director of Building Engineering Division, BCA
- Mr Loh Chee Keong, Quality Control Manager, YTL Cement Marketing Singapore Pte Ltd
- Mr Sugawara Fumitake, Director, Nakayama Crushing Services (S) Pte Ltd
- Mr Joseph Yong, Chief Operating Officer, NatSteel Holdings Pte Ltd
- Mr Benjamin Lee, Project Manager, Teambuild Construction Pte Ltd

AIMING FOR ZERO

THE 7TH LEADERSHIP IN GREEN BUILDING LECTURE CAST THE SPOTLIGHT ON "SUSTAINABLE DEVELOPMENTS THE WAY FORWARD – STRIVING FOR LOW AND ZERO CARBON BUILDINGS".

BCA Academy hosted the 7th Leadership in Green Building Lecture on 23 May 2011. This lecture series aims to advance Singapore's efforts in promoting sustainable development in the built environment. Organised by BCA, Autodesk Asia Pte Ltd and the Singapore Green Building Council (SGBC), the latest run saw three international experts sharing their experiences working on low-carbon buildings. **P**



Above | Mr Tai Lee Siang, President of the Singapore Green Building Council, delivering the opening address.

Right | Mr Paul Stroller sharing a case study on Singapore's Gardens by the Bay.



Mr. Paul Stroller, Director at Atelier Ten and the leader of the firm's global benchmarking practice shared how new methods and computational tools have enabled projects to approach and sometimes even achieve zero carbon emission.

Professor Li Dexiang, a Professor for the School of Architecture in Tsinghua University spoke on various approaches for achieving green building and low carbon cities.

The last speaker, Mr. Ulf Meyer, one of the world's leaders in sustainable architecture, discussed the evaluation of the architectural goal of getting rid of air-conditioning in office buildings. He also shared the design of sustainable buildings and how these concepts could be applied in different cultures and climates, such as Japan and Australia.



Above | During the session, Ong Chan Leng, BCA's Director (Special Functions) spoke out on the need for regular structural inspections.

SPEAKING OUT ON INSPECTION

BCA HOLDS A DIALOGUE WITH PROFESSIONAL ENGINEERS TO REINFORCE THE NEED FOR REGULAR STRUCTURAL INSPECTIONS.



DURING THE SESSION, ONG CHAN LENG, DIRECTOR OF BCA, SHARED THESE IMPORTANT REMINDERS:

- ▶ Not to take safety of buildings for granted;
- ▶ To take mandatory periodic structural inspection seriously;
- ▶ Be vigilant in inspection of critical structures; and
- ▶ Detect and rectify structural defects expeditiously.

Professional structural engineers play an important role during periodic structural inspections to ensure defects are found and rectified early. BCA engages these professional engineers through half-yearly dialogue sessions to gather valuable feedback from them, and also to keep them abreast of latest developments.

During these dialogues, BCA explained the rationale behind the stringent requirements on periodic structural inspections, which were made mandatory in 1989, and the critical role professional engineers play in ensuring building safety in Singapore.

This year, the first dialogue session was held on 9 May 2011 and 50 professional engineers who conduct regular periodic inspections attended.

Before the end of the session, participants were reminded to maintain the structural robustness and soundness of buildings, which should not be allowed to deteriorate over a building's service lifetime. Building safety should also not be undermined by overloading and unauthorised use or unauthorised additions and alterations that can lead to catastrophic collapse. **P**

Left | Ong Chan Leng, BCA's Director (Special Functions).

KEY LEARNING POINTS

Professional engineers drew valuable lessons from BCA's presentation of three case studies during the dialogue session.

CARELESS ADDITIONS AND ALTERATIONS CAN LEAD TO CATASTROPHIC COLLAPSE.



CASE STUDY 1

Defects were found in the steel roof truss of a light industry building. The case highlighted the importance of inspecting concealed structures regardless of constraints such as high ceilings.

CASE STUDY 2

A buckled RC column was found at the void deck of an old apartment. The case highlighted the special attention required when inspecting old buildings built before 1986. Professional engineers were encouraged to recommend strengthening whenever necessary.

CASE STUDY 3

BCA also presented on the risk of unauthorised structures such as mezzanine floors or platforms in factories and the importance of obtaining plan approvals from BCA.





BRINGING CHEER TO OTHERS

BCA staff brought some cheer to about 100 of the elderly residents at the Asian Women's Welfare Association (AWWA) on 16 June 2011 as part of BCA's Corporate Social Responsibility (CSR) day. **P**

Top | Celebrating the birthdays of the June babies together.

Middle | A game of Bingo, with a very happy winner.

Right | Lots of singing and dancing!

Bottom | BCA's CEO Dr John Keung and Director for Corporate Development Mr Cheng Tai Fatt checking out the newly renovated kitchen.



BCA raised funds for AWWA last year to renovate their kitchen. The kitchen is now more spacious and equipped with proper cooking stoves.



NEW AMUSEMENT RIDES REGULATIONS

FROM 1 JULY 2011, THERE WILL BE A NEW REGULATORY FRAMEWORK FOR AMUSEMENT RIDES SAFETY, WHICH AIMS TO PROTECT THE SAFETY OF RIDE-GOERS IN SINGAPORE AS MORE LARGE-SCALE THEME PARKS ARE BEING DEVELOPED AND MORE COMPLEX AMUSEMENT RIDES INTRODUCED.

PUBLIC SAFETY IS PRIORITY

The Amusement Rides Safety Bill 2011 was passed by Parliament on 14 February 2011 and the Amusement Rides Safety Act and Regulations 2011 were gazetted on 1 July 2011. The new regulations will apply to new as well as existing amusement rides.

For the first time, a risk-based regulatory approach will be used to ensure that amusement rides are designed, installed, operated and maintained according to recognised international safety codes and standards. The rides will require permits for their installation, modification and operation, among others, and have to be inspected annually by a specialist professional engineer.

Under the new regulations, new roles and statutory responsibilities will be introduced for key stakeholders and they will be held accountable for the maintenance and safety of rides:

Person Responsible

- Operating permit holder
- Overall-in-charge, management and control of the ride
- Must ensure ride's safe operation, good working condition, and public liability insurance coverage of minimum S\$1 million
- Required to submit a fire and rescue management system for the issuance of a Certificate of Compliance

Ride Manager

- Appointed by operating permit holder
- Responsible for overseeing, managing and supervising the operations and maintenance of the ride

Qualified Person (QP)

- Appointed by operating permit holder
- Specialist Professional Engineer registered with the Professional Engineers Board in amusement ride engineering
- Responsible for carrying out technical duties such as certifying compliance of design codes of the ride, supervising the installation and conducting annual safety inspections

The new regulations will also require the holder of the operating permit to submit a fire and rescue management system to the Singapore Civil Defence Force for the Commissioner of Civil Defence's approval. Upon approval,

Commenting on the introduction of the new regulations, BCA Chief Executive Officer Dr John Keung said,

"For public safety reasons, BCA takes our role as the regulator of amusement rides in Singapore very seriously. Our priorities are to administer the robust system that has been put in place and work together with the professionals and companies involved in amusement rides to ensure the safety of ride goers."

the Singapore Civil Defence Force will issue a Certificate of Compliance to the amusement ride operator.

There will be a grace period of six months, from 1 July, given to all existing operators to comply with the new requirements.

PREPARING THE INDUSTRY

Since 2009, BCA has worked on developing a new regulatory framework for amusement rides based on international regulatory practices, codes and standards. From March to April 2011, BCA met up with the ride operators and owners individually to seek feedback on the new regulations and offered guidance on how they could comply with the upcoming requirements. After the Act and Regulations come into force, BCA will continue to have regular meetings with the amusement ride industry to ensure smooth implementation of the new regulatory system.

Following the introduction of the regulations, BCA will continue to work on building up the industry's capabilities and expanding the pool of specialised professional engineers in amusement ride engineering and conducting regular meetings with the amusement rides industry. **P**

QUALITY ASSURED



EVEN BETTER QUALITY BUILDINGS WITH REVISED RATING SYSTEM.

Developers and builders can now look forward to special recognition under the new *Tiered Rating System for Quality Mark*. Launched in October last year, it recognises developers and builders that have achieved quality excellence beyond the high standards required in Quality Mark (QM) residential projects. This new three-tiered rating system applies to new QM project applications received and all current QM projects completing on or after 1 November 2010. **P**

Above and Right | Star-rated QM projects: (right) W Residences and (above) Cascadia.



Qualifying Criteria:

QM Category (Rating)	*Average QM Unit Score	*Overall Waterponding Test Passing Rate
STAR	85 Points and above	100%
EXCELLENT	83 to < 85 Points	99% & above
MERIT	80 to < 83 Points	98% & above

*Result of initial assessments for the entire project

Qualified Projects:

S/N	Project	Developer	Main Contractor	QM Rating
1	Shelford Suites	City Developments Limited	Tiong Seng Contractors Pte Ltd	Star
2	W Residences	City Developments Limited	Dragages Singapore Pte Ltd	Star
3	The Cascadia	Allgreen Property Ltd	Woh Hup (Pte) Ltd	Star
4	The Orchard Residences	CapitaLand Residential Singapore Pte Ltd & Sun Hung Kai Properties Ltd JV	Penta-Ocean Construction Co. Ltd	Excellent
5	Charlton Villas	Hoi Hup Pte Ltd	Straits Construction Singapore Pte Ltd	Excellent
6	Orange Grove Condominium	Ho Bee Developments Pte Ltd	Kim Seng Heng Engineering Construction Pte Ltd	Merit

EVENT LINE UP

Project Management
15 & 16 AUG

Seminar on Infrastructures
in Soft Ground - Challenges
and Solutions
16 AUG

bizSAFE Level 4 - Workplace
Safety and Health
Management System
16, 18, 23 & 24 AUG

Workshop on Material
Recycling for Sustainable
Construction
17 & 18 AUG

Behavioural Safety for the
Construction Industry
22 & 23 AUG

Good Governance for
Management Corporation
22 & 23 AUG (EVENINGS)

Retrofitting & Strengthening
of Building Structures
25 AUG

Good Industry Practices
(Waterproofing for
External Wall)
01 SEP

2-Day Workshop on Cost
Estimating for Productive
Construction Technologies
01 & 02 SEP



Indoor Air Quality
(IAQ) Solutions for
Sustainable Buildings
05 & 06 SEP

Good Industry Practices
(Marble/Granite/
Geramic Tiling)
07 SEP

Good Industry Practices
(Timber flooring)
13 SEP



Delivering Winning
Presentations for
Building Professionals
15 & 16 SEP

Understanding the Green
Mark Criteria for Existing
Buildings and office Interior
21 SEP (AM)

buildingSMART BIM
International Conference 2011
- The BIM-finitive Way to
SMART Construction
21 SEP

Seminar on Good Practices
of Pile Load Testing and Use
of Pile Load Test Results to
Improve Pile Design
27 SEP

Contract Drafting - The
Technicalities and Legalities
29 SEP

Construction
Contract Administration
29 & 30 SEP

Certification Course on
Construction Law & Contracts
04 OCT-15 NOV

CORENET e-Submission
System Training
06 OCT

SMU-BCA-WDA Productivity
and Leadership Development
Programme
06 OCT-19 NOV

BMSMA for Building
Management Personnel
10 & 11 OCT

Workshop on Site
Management of Precast
Concrete Construction
10, 13 & 18 OCT 2011

HFT Stuttgart-BCA Executive
Development Programme
2011 : Innovations in
Sustainable Design &
Technology
IN OCT 2011

Tsinghua University-BCA
Advanced Management
Programme: Real Estate
Development & Management
in China
IN OCT 2011

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buildingSMART BIM International Conference 2011

The **BIM**-finite Way to SMART Construction

Jointly organised by BCA Academy and buildingSMART Singapore Chapter, the seminar aims to heighten the awareness of BIM among all stakeholders in the construction value chain.

Through the seminar, participants will hear and learn from overseas and local practitioners on how BIM can help improve productivity significantly as well as learn about the challenges and issues involved in the adoption of BIM. You will learn more about the business case in using BIM and the positive ROI from the various speakers.



TOPICS COVERED IN THE CONFERENCE

• SMART Construction overseas

International speakers from US, Netherland, South Korea and Middle East will share the BIM strategies and implementation in the various countries.

• SMART Construction in Singapore

Industry practitioners from RSP, Arup, Woh Hup, BYME and CPG will share the challenges and learning points of their BIM journey. SIA and DLS will also be sharing the usage of BIM as a productivity tool. You will hear from the architect, engineers and contractor about their BIM journey and how they overcome barriers to achieve a breakthrough in using BIM for their projects.

FEE (inclusive of GST)	
Full Fee (For public participants who register after 22 Aug 2011)	S\$214.00
"Early Bird" Fee (For early bird participants who register on or before 22 Aug 2011, 8pm)	S\$171.20
Discount Fee (For members of associations/ organisations affiliated to buildingSMART Singapore)	S\$128.40

Note: Online registration is only available for participants who are paying full fee and early bird fee. Participants who are eligible for member fee need to download the application form and fax your application to: 62580558. Cheques with original application should be mailed to: BCA Academy, 200 Braddell Road, Singapore 579700.

21 September 2011 • 9.00am - 6.15pm • Swissotel Merchant Court, Singapore

Visit www.bcaa.edu.sg for more details.

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