

PILLARS

We shape a **safe**, **high quality**, **sustainable** and **friendly** built environment | JANUARY 2016



STEVEN ANG ON
**BEING A
GREEN
CHAMPION**

GREEN MARK
TURNS
10

UNIVERSAL DESIGN
LEGO VISIONS OF
ACCESS FOR ALL

- 01 FROM THE CEO'S DESK**
Looking forward to the next 50 years as we celebrate innovation, solutions and public involvement.

NEWS ROUNDUP

- 02 LEADING THE CHARGE**
Buildings use large amounts of energy and contribute significantly to emissions. BCA is leading the charge to reduce this.
- 04 BIG ON DESIGN**
Singapore Universal Design Week (SUDW) 2015 was a diverse showcase of age-friendly design.
- 05 HOW TO BUILD MORE PRODUCTIVELY**
The Singapore Construction Productivity Week (SCPW) provided solutions to this question.
- 06 HOW YOU WILL EXPERIENCE GREEN MARK**
Imagine how our lives will change when at least 80% of buildings are 'green' by 2030.
- 08 TROPICAL TESTBED**
What better way to understand the effects of tropical weather than to be right there on a rooftop?

SPOTLIGHT

- 09 GOING GREEN**
DNV GL's Steven Ang takes us on a tour of the company premises – a fine example of sustainable design that works for environment and user.
- 13 MAKING A GLOBAL MARK**
BCA has been steadily building a reputation for global green leadership.

FUTURE READY

- 16 THE BUILDING BLOCKS OF UNIVERSAL DESIGN**
A call for ideas drew innovative concepts from more than 500 Singaporeans and residents.

PEOPLE POWER

- 21 INTO THE DEEP**
For Hussin Bin Osman, heading deep underground to inspect building foundations is all in a day's work.

BCA@WORK

- 23 SHELTER READY**
Inter-agency cooperation paves the way for effective civil defence.
- 24 A BETTER WORKPLACE FOR EVERYONE**
Built environment firms are encouraged to take up the pledge for an improved workforce.

DIARY

- 25 COMING UP @ BCAA**
Learning opportunities at BCA Academy.

PUBLISHER

PILLARS is published
by The Building
and Construction Authority

52 Jurong Gateway Road
#11-01 Singapore 608550
Contact centre: 1800-3425222
For overseas calls: +65 6534 0219
Fax : +65 6334 4287
Website: www.bca.gov.sg

BCA EDITORIAL COMMITTEE

Editorial Advisor

Leong Ee Leng

Editors

Hafiza Yussaini & Rena Pang

Contributors

Christopher Eng, Ryan Hong,
Grace Cheok-Chan, Benjamin Towell
& Michelle Tan

PUBLISHING AGENT

ThinkFarm Pte Ltd

All rights reserved ©2016.
Written permission must be obtained
from BCA to reproduce any part of Pillars.
Printed on environmentally friendly paper.

Log on to www.bca.gov.sg/publications/pillars/pillars.html to read the e-version of Pillars

DEAR READERS,

Last year was a momentous milestone for Singapore and now that the SG50 celebrations have wrapped up with a bang, we, together with the nation, step into the future with optimism, towards the next 50 years.

Building a safe, high quality, sustainable and friendly living environment for the benefit of the community has been BCA's key priority, and propelling the built environment industry to greater heights is one of the ways to achieve that vision.

To this end, BCA continues to work with industry players by encouraging them to innovate and adopt new technologies to improve productivity and change the way we build, thereby developing Singapore as a smart nation.

At the same time, we need to mitigate the impact of climate change and ensure social sustainability for our ageing population.

In this issue, you'll read about some of our efforts in these key areas. BCA celebrated 10 years of Green Mark in 2015 and in the cover story, find out more about the green building that houses multinational company

DNV GL in Singapore, a fine example that ticks all the right boxes in our Green Mark criteria.

For all its efforts, BCA will continue to reach out to the public and students through roadshows, exhibitions and competitions. A recent example is the Project BUILD competition, a showcase of Universal Design using LEGO bricks.

Universal Design is the next big thing in building design and operation, and BCA continues its work in this area, not least because we need to plan ahead to meet the needs of an increasingly diverse and ageing population. The objective is to have workspaces and living spaces that are accessible and designed for all.

Exciting times are ahead. As we further our quest for a future-ready built environment for all, BCA strives to keep innovating and working closely with the industry to meet challenges head on.

Dr John Keung
Chief Executive Officer



LEADING THE CHARGE

Buildings consume large amounts of energy and contribute significantly to global greenhouse emissions. Something's got to be done to change this, and BCA is leading the charge.

One of the most important initiatives to tackle these issues is Singapore Green Building Week (SGBW). This major event reaches out to the industry, students and end-users, and involves close to 30,000 participants from more than 50 countries.



Mr Choi Shing Kwok, Permanent Secretary, Ministry of the Environment and Water Resources, and Dr John Keung, CEO, BCA, at the BCA booth.



Mr Quek See Tiat, Chairman, BCA, giving a speech.



Green Mark Tours showcase exemplary tropical green buildings in Singapore.



The BCA Breakfast Talk for CEOs engaged more than 200 corporate heads on sustainability, Singapore's green journey and the challenges ahead.



Participants of the Build Green: Student Edition team-based game.



From thought leaders, technical workshops and Green Mark tours, to tree planting, an expo for sustainable technologies and materials and a special game for students from Institutes of Higher Learning, the 2015 SGBW saw the largest programme so far and is set to play an important role in promoting the cause of sustainable design.



Top left: BCA CEO, Dr John Keung and Chairman, Mr Quek See Tiat doing their bit at the tree-planting event; Top right: Guest of Honour, Mr Choi Shing Kwok (centre) officiating the joint launch of three key events (IGBC, BEX Asia and MCE Asia) at SGBW 2015.

First-place winners of the BCA-SIA-SGBC International Tropical Architecture Design (ITAD) Competition, from Parahyangan Catholic University, Indonesia.

BIG ON DESIGN

Singapore Universal Design Week (SUDW) 2015 was a diverse and engaging showcase on the importance of age-friendly design.

Now in its second year, SUDW was a multi-faceted event that took place in July and August 2015. In its objective to reach out to as many people as possible, it took to schools, malls, office buildings and conference venues to share information and promote, educate and showcase the concept of Universal Design (UD).

SUDW comprised seven key events including a conference which featured seven speakers like world-renowned architect Moshe Safdie. Professionals and schoolchildren were also brought on tours around buildings that reflect good, user-centric approaches to design.

In addition, there was an art exhibition of works by hundreds of children from 12 primary schools who have been inspired to become UD Explorers by the application of UD in everyday locations.

The launch of SUDW was officiated by Minister for Social and Family Development, Mr Tan Chuan-Jin, while the UD Explorers



Guest of Honour Mr Tan Chuan-Jin, Minister for Social and Family Development (centre), launched the event with Mr Quek See Tiat, Chairman, BCA (right), and Dr John Keung, CEO, BCA (left).

Exhibition was launched by Ms Grace Fu, Minister for Culture, Community and Youth. SUDW 2015 reached out to more than 1,000 participants, including 500 students from schools in Singapore.



More than 500 students from 12 primary schools participated in a UD Explorers Programme and Exhibition.



Left to right: Mr Quek See Tiat, Chairman, BCA, Guest of Honour Mr Tan Chuan-Jin, Minister for Social and Family Development, and Dr John Keung, CEO, BCA, observed a demonstration of equipment at the Universal Design Products Showcase. These allow the elderly and persons with disabilities to lead an active and independent lifestyle.

HOW TO BUILD MORE PRODUCTIVELY

The Singapore Construction Productivity Week (SCPW) provided solutions to this question.



In its fifth edition, the event was focused on the need to fundamentally change the way we build and improve collaboration in the construction value chain in order to reduce the industry's reliance on foreign workers.

This means adopting smart construction methods and technologies, changing mindsets and moving as much construction work off-site as possible.



Guest of Honour Mr Quek See Tiat, Chairman, BCA, and Dr John Keung, CEO, BCA, immersed in a 3D virtual environment and walking through a simulated built-up space as part of the Virtual Design and Construction (VDC) process at the BuildTech Asia Exhibition 2015.



The launch of Singapore Construction Productivity Week (SCPW) 2015 at Max Atria, Singapore Expo, on October 13 by Dr John Keung, CEO, BCA, Guest of Honour Mr Quek See Tiat, Chairman, BCA, Mr Chua Wee Phong, Chairman, Sphere Exhibits, and Ms Elaine Chia, Managing Director, Sphere Exhibits.



Special live demonstration of the construction of a hybrid Cross Laminated Timber (CLT) and Glued Laminated Timber (Glulam) structural module at BuildTech Asia Exhibition 2015.

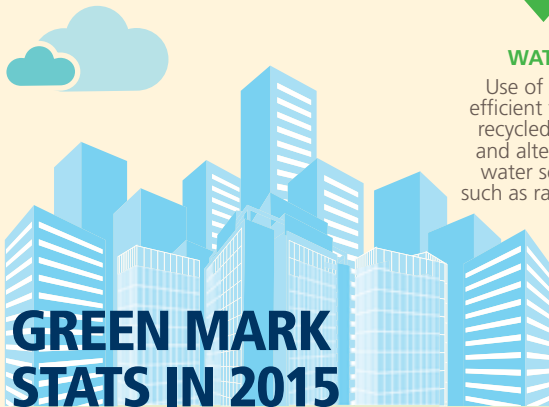
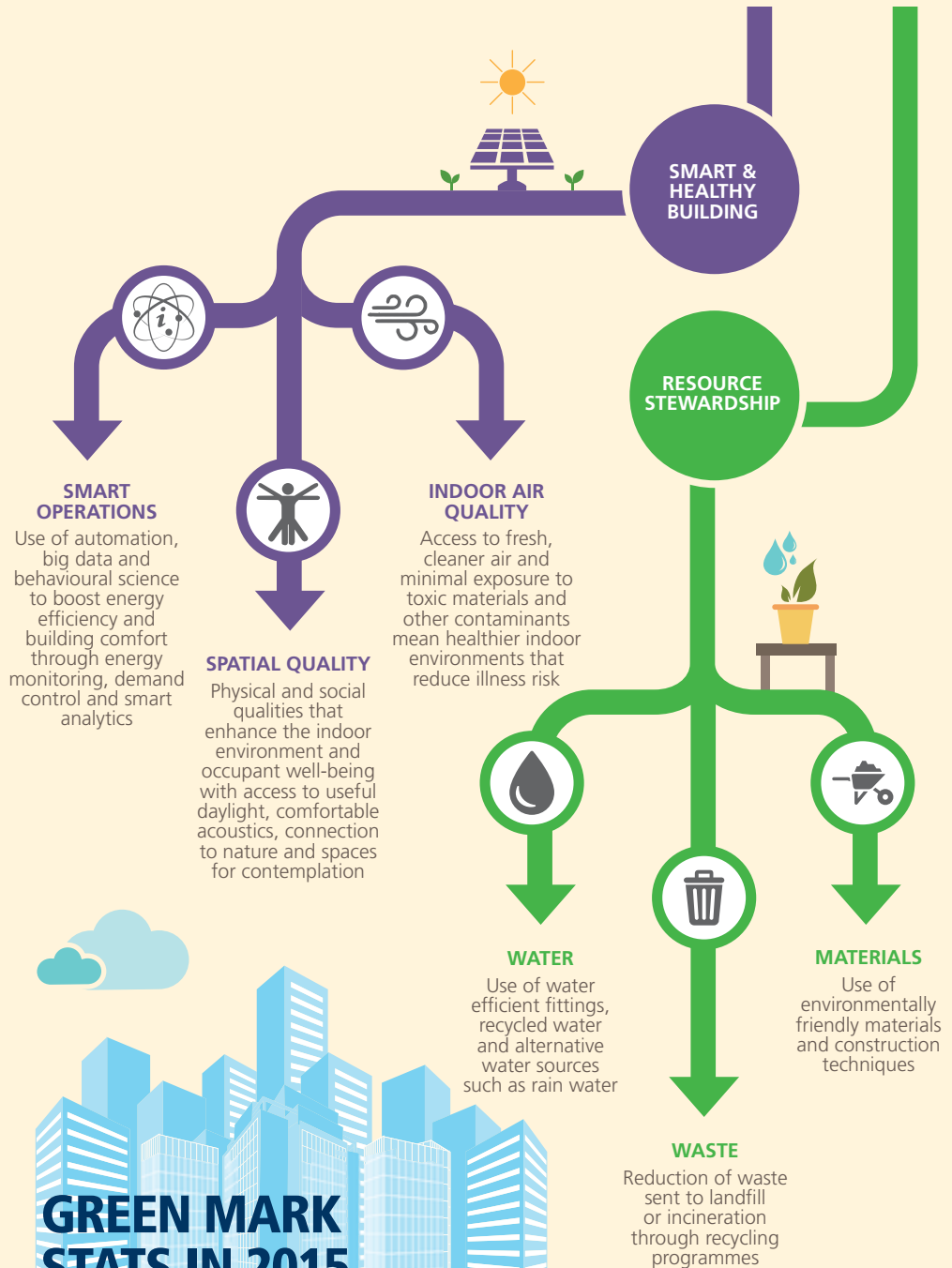
Imagine how our lives will change when at least 80% of buildings are 'green' by 2030.

Launched in 2005, BCA's Green Mark Scheme was designed to promote environmental awareness in the construction and real estate sectors. It was designed as a tool by which buildings can be assessed on various sustainability quotients, namely, energy and water efficiency, environmental protection, indoor environment quality and other green and innovative features that contribute to better building performance.

For industry players – from architects to builders to building owners – it provides a points-based framework from which industry can take reference for sustainability, and guides decisions about every aspect of planning, designing and fitting out a building. Buildings which score the stipulated number of points are conferred Green Mark status, which celebrates companies committed to Singapore's sustainability drive.

As more building owners shift gear toward being Green Mark-certified, what do the various criteria mean to the individuals who live and work in these buildings? How will daily lives be impacted by the reality of so many green buildings? Here are some hints of what to expect.

HOW YOU WILL



GREEN MARK STATS IN 2015

>2,500
green buildings

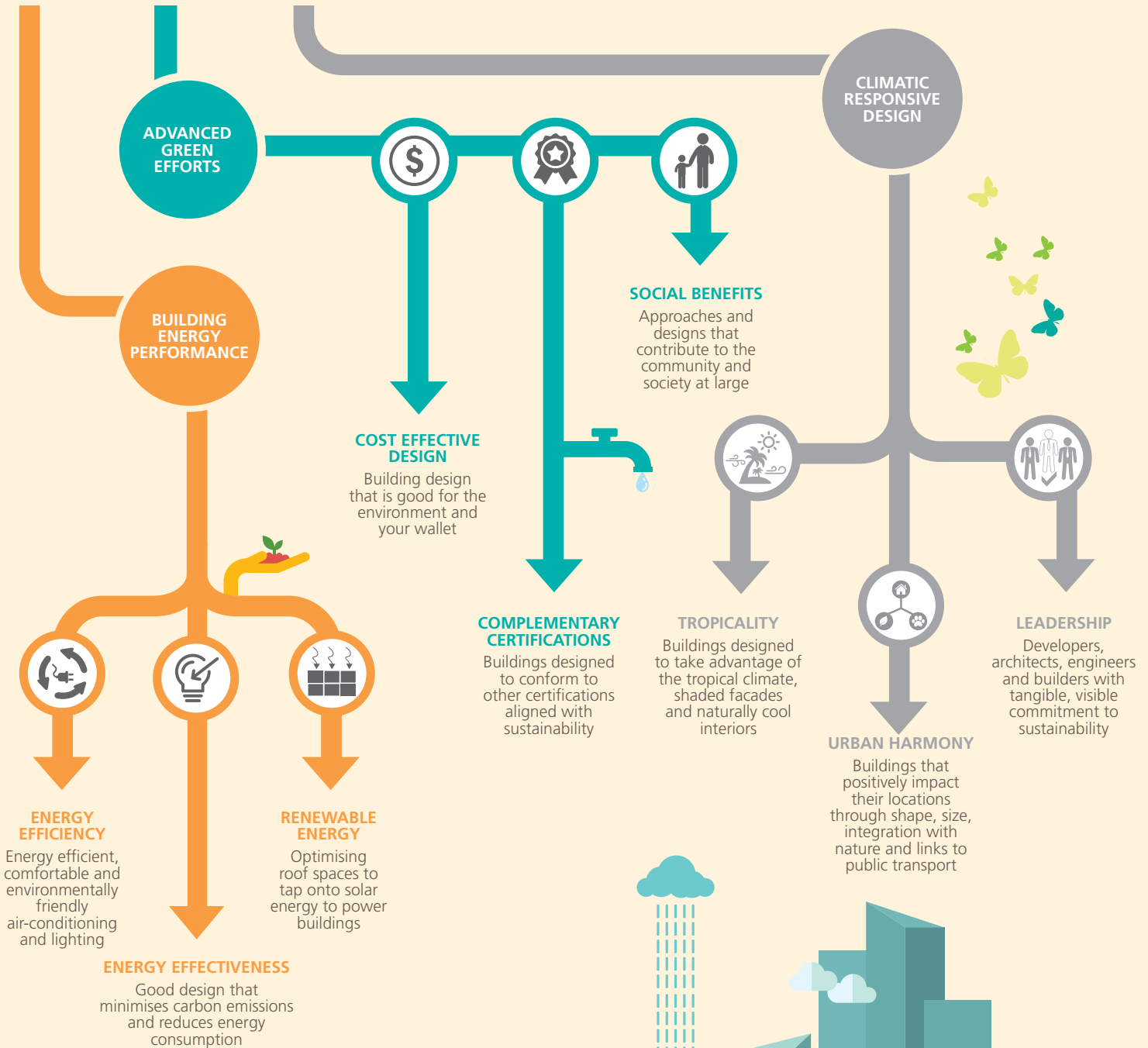
275
Green Mark professionals

3,882
Green Mark Managers

912
Green Mark Facilities Managers



EXPERIENCE GREEN MARK



29%
of Singapore's built environment is Green Mark certified

280
overseas applications from 14 countries

>136mil sqm
of green floor area in Singapore and overseas (based on applications)



TROPICAL TESTBED

What better way to understand the effects of tropical weather on buildings than to be right there on a rooftop in the tropics, exposed to the elements and not blocked by nearby structures?

Introducing BCA's SkyLab, the world's first high-rise rotatable laboratory for the tropics. Located on the rooftop of a new building at BCA Academy at Braddell Road, the 132 sq m SkyLab will offer researchers, technology suppliers, designers, developers, buildings owners and consultants a state-of-the-art test facility for energy efficient building technologies and designs. SkyLab can be used for evaluating the performance and inter-dependency of building components and systems (air-conditioning, lighting, facades and controls). This facility will further boost research and development of emerging technologies that can demonstrate a higher energy efficient potential and suitability for the tropics.

Singapore is a small and densely built-up city state. Being on the top floor – and rotatable – SkyLab is able to testbed building energy efficient technologies in any direction in relation to the sun and the wind. For example, if a building owner would like to install and test

a vertical shade on the east facade, the BCA SkyLab could simulate the conditions required to assess the effectiveness.

Buildings contribute one-third of all global greenhouse gas emissions and consume about 40 per cent of energy, and solutions are needed to bring these levels down. The knowledge gained at SkyLab will benefit not just Singapore but potentially, every country with a tropical climate. Says Dr John Keung, BCA's CEO: "With the BCA SkyLab, we are moving another step closer to the ambitious goal of achieving 'low-energy high-rise' buildings and 'zero-energy low-rise' buildings in the tropics."

SkyLab, developed in collaboration with Lawrence Berkeley National Laboratory in California, is expected to be completed in mid-2016.



ARTIST IMPRESSION OF BCA SKYLAB: BCA



GOING GREEN

DNV GL's Steven Ang takes us on a tour of the company's building – an excellent example of sustainable design that works for both the environment and end-users.

Step into DNV GL's reception and visitors will be struck by the high ceiling – seven storeys above on the top level – and the natural light streaming in. Then there is the centrepiece staircase that runs along the walls, connecting the different floors with an open-concept design that maximises air and light flow.



IMAGES: AHMAD ISKANDAR PHOTOGRAPHY, DNV GL

SPOTLIGHT

Employees are encouraged to use the stairs when possible to get some exercise. The temperature is noticeably comfortable – cool but not frigid like many office environments. This is the result of a variable air volume on-demand air conditioning system that channels cool air to where it is needed, with vents to dispense air in gentle spirals rather than harsh spurts. It is more comfortable, and energy consumption is down by 30%.

DNV GL is an international classification consultancy specialising in industries that include renewable energy, maritime, oil and gas. Its building in Science Park was awarded BCA's Green Mark (Gold Plus) certification in 2013, and for good reason. Steven Ang, DNV GL's Real Estate & Office Manager for South Asia, explains that it was designed to be a sustainable environment.



Top: Vents dispense air in spirals rather than harsh spurts so that it is more comfortable for users. **Right:** Plants add a touch of soothing greenery and also help monitor air quality in the office.



He says: "Sustainability is embedded in our corporate DNA. We advise our clients on becoming more energy efficient, so it was a big thing when we could finally tell our customers that we are also walking the talk by implementing green practises."

Waste management

DNV GL's employees – more than 500 – have to walk about five metres to reach a wastepaper basket; there are no personal bins. This encourages people to get away from their computer screens for a while and saves money from buying more than 500 baskets, says Steven. Janitorial service staff can also focus on more productive tasks.



We advise our clients on becoming more energy efficient, so it was a big thing when we could finally tell our customers that we are walking the talk.



Left: Recycling bins, including one for batteries, are built into the sleek pantry carpentry. Below: Greenery can be found in many areas of the building, whether on feature walls or in planters.

Printing is managed with an access card system. Staff can tap their cards and print on any printer in the building. It's not only convenient, it cuts out "trigger happy" printing. The company now buys 50% less paper than before, even with a more-than-50% increase in staff strength.

Recycling points are fitted into the sleek pantry carpentry. Besides the usual paper, plastic and glass, there is a bin for batteries, because marine surveyors use battery-operated equipment like gas metres, explains Steven. "It's not a huge amount but there is still consumption and we'd like to manage that waste properly."

There are also collection points for used print toner cartridges,



and he is exploring solutions for the disposal of light fittings like fluorescent tubes. "Recycling is done typically for the same few categories, but we try to do more where possible."

Green Mark light up

Steven and his team were "absolutely ecstatic" when they scored the Green Mark stamp of approval from BCA, but he wasted no time dwelling on it. He says: "It

An open-concept staircase connects all the floors while the full glass facade lets in plenty of natural light.



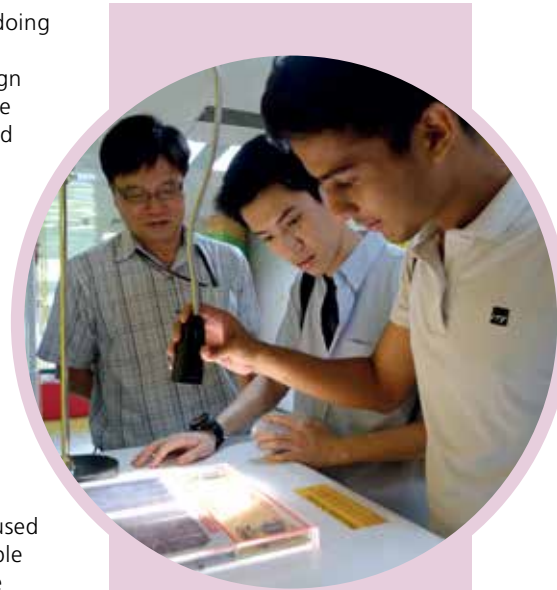
is what we do and continue doing that matters."

Before diving into the design and construction stages of the new building, Steven attended BCA's Green Mark Facilities Manager course, which equips experienced building engineering professionals with deeper knowledge in operating buildings sustainably. He particularly valued the experiences shared by lecturers from different industries, which spurred ideas.

The occupancy sensor task lights – which light up when human motion is detected – used at DNV GL are just one example of an idea hatched during the course. Intrigued by the idea, Steven set out to find a refined version of it. After sussing out more than 10 versions, he settled on one that could be tweaked to his satisfaction. The original model would automatically switch off after 15 minutes of user inactivity, which Steven felt was too long. Because it was a large order, the factory agreed to produce a customised model for DNV GL that cuts it down to five minutes.



These task lamps complement the ambient lighting system that is designed to provide 60% of the lighting in a conventional office environment. The full glass facade of the building also lets in plenty of natural light as well, easing eye-strain and saving on utilities.



A CAREER IN THE GREEN FUTURE

Trained in industrial design, Steven worked as a contractor before he joined DNV GL. "I used to do anything from the ground up to the ceiling, from fabrication work to automation systems," he says. This background has helped in his facilities management role as he knows what to expect from vendors and contractors, having served in that capacity himself.

With the ongoing focus on sustainable living, Steven finds that the built environment industry has gotten much more exciting. The facilities management sector, for instance, used to be focused on getting the building to work, and not on the end-user. It was also a smaller, more confined field. Now, "the sky is the limit," he says. "Students who are into sustainable technology can venture into consultancy, become vendors to help develop new technologies, go into architecture for sustainable urban communities. There are so many avenues and nothing to stop you from joining anyone."

MAKING A GLOBAL MARK

BCA's green building initiatives have placed Singapore on the world green map.

When the World Green Building Council (WorldGBC) conferred its prestigious Chairman's Award 2015 on BCA CEO Dr John Keung in October 2015, it was a clear sign that the agency's efforts were yielding tangible results.

The award honours his energy and passion in advancing the global sustainability movement, and Dr Keung was one of three recipients this year and the first recipient from Southeast Asia since the award launched in 2011. He was nominated by the Singapore Green Building Council (SGBC), a member of the WorldGBC.



COURTESY OF JURONG HEALTH



COURTESY OF NATIONAL LIBRARY BOARD, SINGAPORE

Above: Nearly 2,000 sqm of Ng Teng Fong General Hospital & Jurong Community Hospital's roof is fitted with photovoltaic panels to supplement the hospital's power needs.

Left: Singapore's first Green Mark building, National Library Board, Singapore, is also one of the country's most energy-efficient non-residential buildings.

Dr Keung was cited for the "positive transformations he has engineered in Singapore's building sector and beyond." The citation by WorldGBC reads: *"Thanks to Dr Keung's effort and commitment, the public sector took the lead in driving the Green Building Masterplan...Dr Keung was instrumental in creating the Green Mark rating system for green building certification. Its success has been both high-level and widespread, and has spread as far as Tanzania where it has been successful in providing 200 affordable, energy-efficient homes with higher living standards at a lower environmental impact. Under his leadership BCA earned the United Nations Public Service Award in 2012, with Singapore becoming the first country outside America and Europe to obtain the international Star of Energy Efficiency Award in 2013. Dr Keung also helped to set up and*



Left: Dr John Keung, CEO, BCA, received the WorldGBC Chairman's Award from Mr Bruce Kerswill, Chairman, WorldGBC, and Ms Terri Wills, CEO, WorldGBC, at the WorldGBC Congress Gala Dinner in Hong Kong on 29 October 2015.

What does it mean?

Although conferred on an individual for leadership, the award salutes the initiatives and individuals and agencies which have driven them.

As the country's Green Leader, BCA is responsible for setting the standards and steering the entire built environment industry toward the creation of more green, sustainable, accessible buildings in more productive and cost-effective ways.

To do this, it has to reach out in relevant ways to everyone in the value chain, from building owners to the young person contemplating a career in the built environment industry. To pull off a cause like this on a national level, it also has to inspire, and walk the talk.

grow the Singapore Green Building Council (SGBC). An amazing 29% of floor area in Singapore is now greened, thanks to Dr Keung's dedication to successfully making the business case for building green."

Launched in 2011, the prestigious World Green Building Council Chairman's Awards are given to individuals who have made an outstanding contribution to the global sustainability movement. Award winners have played a critical role in advancing the sustainability movement and raising awareness of the challenges the world faces.

Right: City House, an example of successful collaboration between owner and tenants – the building is a Green Mark award winner and 70% of the lettable space is Green Mark-certified.



COURTESY OF CITY DEVELOPMENTS LIMITED

Among its initiatives and awards are the following:

Green Mark Scheme, 2005

A benchmark scheme for evaluating environmental sustainability in buildings, it formed the backbone of the Green Building Masterplan that was to come the following year. Designed to drive Singapore's built environment industry and raise environmental awareness among developers, designers and builders from concept stage, today it is the leading green building rating system of the tropics and sub-tropics and has been adopted in 75 cities in 14 countries.

Green Building Masterplan, 2006

This was the kickstart needed for Singapore's green building movement, and led to the formulation of the second and third Green Building Masterplans consisting of policy levers, initiatives and incentives to drive the green building movement.

Zero Energy Building, 2009

BCA developed Southeast Asia's first Zero Energy Building (ZEB), retrofitted from an existing building. It also serves as a 'living lab' to test promising energy efficient solutions for the tropics.

Aspen Institute Energy & Environment Award, 2010

BCA was the first government agency outside North America to be conferred this prestigious award for comprehensive policies and programmes in steering the industry towards the development of green buildings and sustainable construction in Singapore.

Centre for Sustainable Buildings, 2011

BCA collaborated with United Nations Environmental Programme

(UNEP) to set up the first centre in Asia to build capacity for sustainable building policy development.

World Green Building Council Award Regional Leadership Award, 2011

BCA received international recognition for its Green Building Masterplan and its efforts in steering the construction industry towards sustainable development in Singapore, and leadership in the green building movement in the Asia Pacific.

First in the world for highest green building activity, 2013

Singapore was ranked 1st for the highest level of green building activity in the world in the McGraw Hill *Construction World Green Building Trends* report.

International Star (I-Star) Award, 2013

BCA was the first government agency outside of the US and Europe to receive this award from US-based energy efficiency coalition, Alliance to Save Energy (ASE). It was in recognition of outstanding achievements in leading the green building movement and energy efficiency improvement measures.

Recognised as a globally-respected agency whose initiatives are used in Asia, Africa and South America, BCA also provides consultancy services on multi-million dollar projects in China, India, Pakistan, the Philippines, Vietnam and the Middle East.



Left: River Safari is home to hundreds of plant and animal species, designed to create natural habitats with minimal disruption.

Below: CapitaGreen was the first building to be constructed using ultra-high strength concrete that requires less concrete to be used.



THE BUILDING BLOCKS OF UNIVERSAL DESIGN

A call for ideas toward an inclusive built environment drew in innovative concepts from more than 500 Singaporeans and residents.

Sheltered walkways, handrails and ramps as an alternative to stairs are just some of the examples of Universal Design (UD), which can be simply defined as 'design for everyone'. It is focused on creating an environment for an inclusive society, where even the young, elderly and those with limited mobility can get around with ease, living among family and friends.

To promote UD, the Building and Construction Authority (BCA) recently held the Project BUILD Competition where participants were encouraged to build their ideal UD built environments using LEGO bricks.





First-prize winner Kenneth Chen, 29, is a game studio artist. A LEGO fan with an interest in architecture, he liked the idea of using LEGO bricks to express his creativity and the significance of UD in our environment.

His design focuses on seamless integration. The key feature is a barrier-free gantry in the train station. He said: "Through automated doors, elevators and barrier-free gantry into the train station, the young, the elderly and people with mobility limitations can conveniently travel around to do what they want and what they love. With a built-in sensor, the barrier-free gantry allows commuters to walk through without obstructions and avoid problems that we have with crowds and EZ Link cards. Shops, restaurants and facilities are also within the vicinity. The perfect environment is one that is very accessible and seamlessly connected."



“
The perfect environment is one that is very accessible and seamlessly connected.
”

Kenneth Chen
Winner, first prize



Eugene Tan, 39 and a self-confessed AFOL (Adult Fan Of Lego), won second prize. His entry focused on accessibility in a polyclinic, an everyday setting which involves people from all walks of life and with different needs and challenges. The social media marketing professional liked the fact that, unlike other Lego competitions, this one combined fun, creativity and the aim to raise public awareness about UD.



We did some brainstorming for an ideal miniature building. The idea and space planning were first done using Lego digital building software before the actual physical building. It took us about two weeks to complete. **Space planning with proper features makes life easy for everyone.**



Eugene Tan
Winner, second prize



For third-prize winner Neo Beng Seng, 39, and his family, the competition was a chance for them to develop greater awareness of and appreciation for the existing UD features in public facilities. Their submission focused on community spaces like playgrounds, exercise corners and roof terraces where families and the community can come together and foster deeper bonds.



The environment created aims to engender a conducive ambience and to facilitate effective engagement of families and community to foster deeper bonds. The challenging part was to select the right Lego pieces to replicate real-life UD features such as wheel chairs, toilet accessories, ramps and handrails. It is also a good platform to educate my children about the importance of inclusiveness.



Neo Beng Seng
Winner, third prize





My son is a Lego fan and has lots of Lego bricks bought over the years, so I thought we could try creating a Universal Design project as a family. We also have elderly parents who have accessibility issues, so we could understand the difficulties encountered by them. **By designing for human diversity, products are easier to use and the built environment is safer, barrier-free and seamlessly connected. We hope Singapore can achieve our vision of a truly inclusive society.**



Hang Loo Ming (and family)
Winner, fifth prize

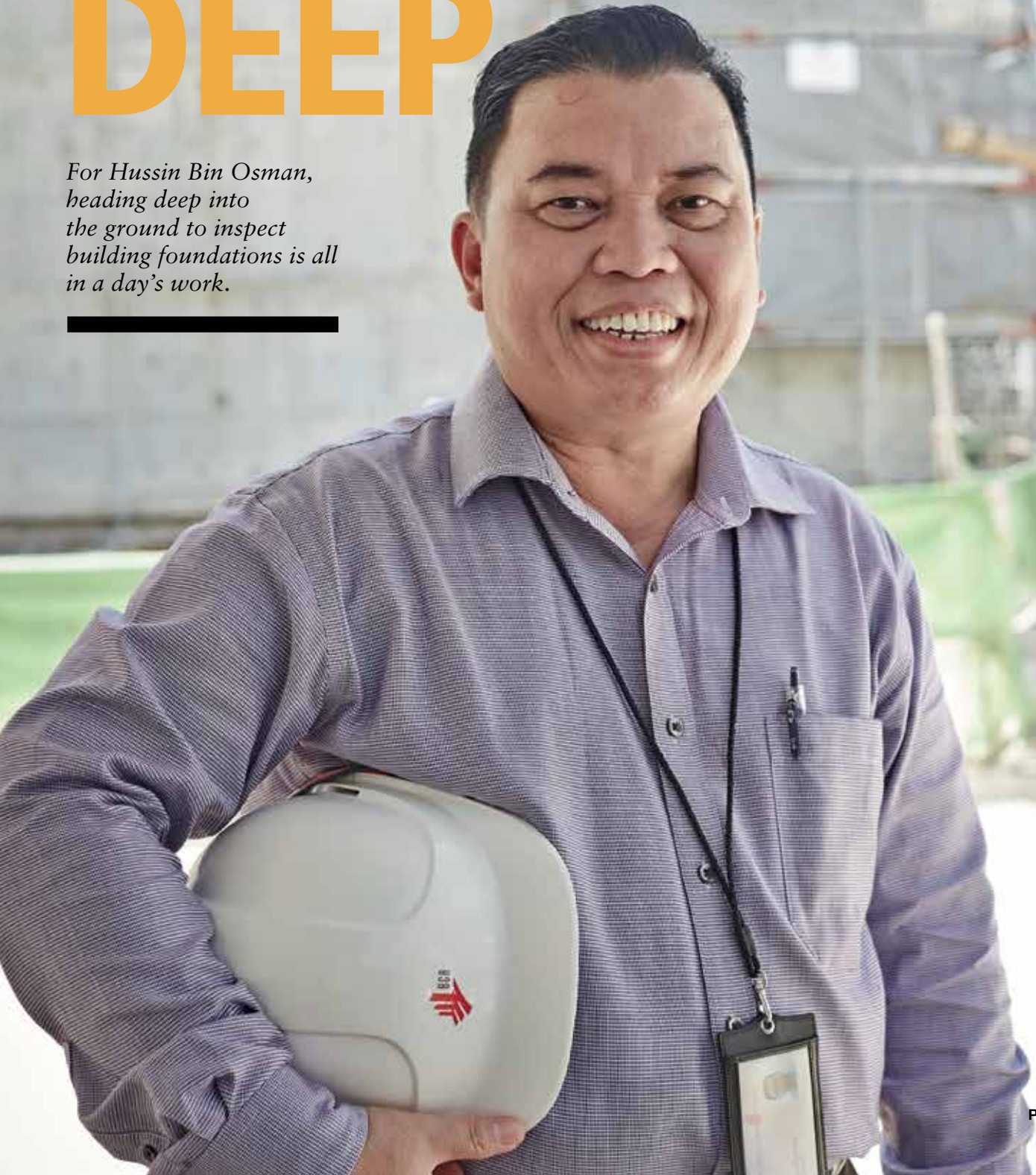


The Hang family clinched the fifth prize with a design that incorporated UD features like a sheltered porch for boarding and alighting from vehicles, wider walkways for wheelchair users and warning tactile indicators at stairs and pedestrian walkways for the elderly and the visually impaired.



INTO THE DEEP

For Hussin Bin Osman, heading deep into the ground to inspect building foundations is all in a day's work.



It starts with examining the documents in the relative comfort of a construction site office. Once Hussin Bin Osman is satisfied with the approved drawings, it's time for him to put on his work boots and hard hat, and to move out to the often hot, sunny site.

The Associate Engineer has been with the Building Construction Authority of Singapore (BCA) for about 30 years, and to this day, finds his work interesting and even exciting.

"The construction industry is never dull," he says. "It keeps changing and things are never static. There's always something new and every day, you are learning.

"I've seen the industry's progress, from way back when there were samui women to now, when everything is done with modern machinery and technology," he adds with a laugh.



“
The construction industry is never dull. It keeps changing and things are never static. There's always something new and every day, you are learning.
”

Hussin Bin Osman
Associate Engineer, BCA

Keeping Singapore structurally sound

Hussin is part of the Bridges and Structural Steel Department team that ensures structural safety of building works. Every month, he has to complete several site audits. This takes him to all sorts of construction projects, ranging from condominiums and commercial sites like Changi Airport Terminal 4 and Singapore Sports Hub, to industrial projects like a data facility centre.

More often than not, he'll be walking around in muddy tracks, approved drawings in hand, asking the site supervisor questions and studying the foundation to superstructure works to make sure that what has been done is according to the BCA-approved plans. It boils down to the checking of many details, such as the boring of depth in different ground conditions. "It is really on the ground work," he says, although there was one time when Hussin had to descend deep into an excavation site to do his inspection.



For his diligence, sense of responsibility and contributions to BCA initiatives, Hussin received an Efficiency Award at the National Day Awards investiture in 2015.

A job well done

The construction industry is a fast-paced one. On the site of a project, Hussin always tries to balance the need to be efficient with the importance of a thorough inspection. It helps that with more than two decades of experience, he can absorb and understand things at a glance. An authoritative attitude combined with good rapport with the on-site employees further ease the work processes.

As part of the continuing education for industry players to understand how paramount safety is, Hussin is also often involved in organising briefings and workshops for them. These sessions lay down the rationale of regulations and specifications that have been put in place by BCA, and are opportunities for the industry players and regulators to further understand each other.

Hussin's passion for his work has not gone unrecognised. Previously a recipient for a Long Service Award and the Excellent Service Award (Silver) in both 2008 and 2009, he was presented with an Efficiency Award at the National Day Awards Investiture held in November last year.

SHELTER READY

Inter-agency cooperation paves the way for effective civil defence.

Transit shelters play a key role in civil defence. Designed to protect against attacks from conventional weapons and war gases, they are life-supporting sanctuaries for the population.

BCA's Transit Shelter and Engineering Department (TSED), in its role in regulating and advising on transit shelters, conducted the 12th Shelter Specialist Course in June last year for 30 Singapore Civil Defence Force (SCDF) shelter officers. The course covered various aspects of transit shelter design, construction, installation, testing and operations.

In the spirit of inter-agency cooperation, BCA officers guided new SCDF officers on civil defence provisions and equipment within the shelters, such as blast doors, blast valves, gas filters and generators. These enable SCDF officers to operate the systems efficiently and effectively in times of national emergencies.

The course also serves as an avenue for BCA to obtain feedback from SCDF on shelter operation and maintenance framework. BCA and SCDF are then able to review and enhance civil defence measures to ensure well-designed and user-friendly transit shelters.

Executive Engineer Wan Kai Hui presenting on the Civil & Structural aspects of shelters.



Executive Engineer Christopher Eng training SCDF officers on the Environmental Control System in Transit Shelters.



Senior Engineer Alex Chan elaborating on the requirements for Testing & Commissioning Transit Shelters.

A BETTER WORKPLACE FOR EVERYONE

Built environment firms are encouraged to take up the pledge to enhance the workplace.



Good human resource practices and a conducive work environment are key to retaining talent and encouraging employee loyalty. The 'Pledge for a Better Built Environment Workplace' is a voluntary commitment for built environment firms, including developers, consultants and contractors. The objective is to transform the sector into a workplace of choice to attract and retain talent.



Signing the Pledge

By taking on the Pledge, firms are committing to adopting good human resource practices based on five principles:

- Performance management and training
- Recruitment and on-boarding
- Staff engagement
- Rewards and compensation
- Wellness and support scheme

BENEFITS TO THE FIRM

Companies that sign the Pledge will enjoy the following benefits.

BRANDING	<ul style="list-style-type: none"> • Positive image to better attract and retain talent • Use of the Pledge logo in firm collaterals
PUBLICITY FOR FIRMS	<ul style="list-style-type: none"> • Featured in Pledge registry on BCA's Building Careers Portal • Selected firms may be profiled in BCA's publicity materials and events
LEARNING OPPORTUNITIES	<ul style="list-style-type: none"> • Access to HR-related resources • Invitations to attend HR-related workshops/seminars



Top: 19 firms from Singapore Contractors Association Limited (SCAL) pledged support to good HR practices in 2014. Left: Singapore Institute of Surveyors and Valuers (SISV) pledged their support in 2015.

PLEDGE NOW!

Visit www.buildingcareers.sg/pledge to download the application form or email BCA_BEcareers@bca.gov.sg

Starting in Jan 2016

WSQ Advanced Certificate in Workplace Safety & Health (7 months - Part-time)

Starting in Jan 2016

WSQ Specialist Diploma in Workplace Safety & Health (10 months - Part-time)

Starting on 12 Jan 2016

WSQ Graduate Certificate in Workplace Safety & Health (6 months - Part-time)

Starting on 5 Jan 2016

Specialist Diploma in Construction Productivity (5 months - Part-time)

Starting on 18 Jan 2016

Specialist Diploma in Facility & Energy Management (9 months - Part-time)

Starting on 18 Jan 2016

Specialist Diploma in Building Information Modelling (5 months - Part-time)

Starting on 25 Jan 2016

Specialist Diploma in Building Cost Management (9 months - Part-time)

Starting in Jan/Feb 2016

Specialist Diploma in Construction Management (9 months - Part-time)

Starting on 15 Feb 2016

Specialist Diploma in Interior & Landscape Design (9 months - Part-time)

Starting on 15 Feb 2016

Specialist Diploma in M & E Coordination (9 months - Part-time)

Starting on 18 Feb 2016

Specialist Diploma in Architectural Technology (9 months - Part-time)

JANUARY 2016**4 - 6 Jan 2016**

Retro-Commissioning and Performance Contracting (2nd Run)

5 Jan 2016

Good Industry Practices (Waterproofing for Internal Wet Areas)

5 Jan - 25 Feb 2016

Advanced Certificate in Construction Productivity (4th Run)

7, 8 & 11 Jan 2016

Solar Modelling (18th Run)

12 Jan 2016

Half-day course on Best Practices for Green and Gracious Builder (20th Run)

12 & 13 Jan 2016

BIM Planning Course (Building Developers and Facility Managers) (16th Run)

12, 14, 19 & 21 Jan 2016

Supervision of Piling Works for Engineers and Supervisory Personnel (24th Run)

13 Jan 2016

Design of Bolted and Welded Joints in Steel Buildings using Eurocode 3 (7th Run)

13 Jan 2016

Good Industry Practices – Drywall Installation including Wet Areas Application (2nd Run)

13 Jan 2016

Basic Concept in Construction Productivity Enhancement (BCCPE)

15 Jan 2016

Built Environment and Property Prospects Seminar 2016

15 Jan - 1 Mar 2016

Certification Course on Construction Law & Contracts (16th Run)

20 & 21 Jan 2016

Develop A Risk Management Implementation Plan (BizSAFE Level 2) (104th Run)

25 & 26 Jan 2016

Energy Efficiency for Electrical Systems (2nd Run)

FEBRUARY 2016**1 - 4 Feb 2016**

Certification Course in BIM Modelling (MEP Track) (9th Run)

15 - 18 Feb 2016

Certification Course in BIM Management (50th Run)

18 & 19 Feb 2016

Energy Efficiency through Management and Audit (2nd Run)

18, 19, 25 & 26 Feb 2016

Develop a Workplace Safety and Health Management System Implementation Plan (BizSAFE Level 4) (8th Run)

25, 26, 29 Feb & 1 Mar 2016

Design and Simulation for Natural Ventilation (3rd Run)

MARCH 2016**1 Mar 2016**

Course on Way-finding & Signage Design (2nd Run)

1 - 24 Mar 2016

Supervision of Deep Underground Construction Works (3rd Run)

28 - 31 Mar 2016

Certification course in BIM Modelling (Architecture Track) (10th Run)

Contact

BCA Academy

Marketing & Business Development

DID: 6730 4503/6248 9824

Email: bca_academy@bca.gov.sg

Web: www.bcaa.edu.sg

Starting in Mar 2016 (Full-time)

Application closing date: 15 Feb 2016

Bachelor of Construction Management (Building) 7th Intake (awarded by The University of Newcastle, Australia)

Contact

Ms Nurhadhinah / Ms Zhuo Xiuyun

Tel: 6730 4503 / 6248 9881

email: nurhadhinah_osman@bca.gov.sg;

zhuo_xiuyun@bca.gov.sg

Starting in Mar 2016 (Part-time)

Application closing date: 15 Feb 2016

Bachelor of Construction Management (Building) 3rd Intake (awarded by The University of Newcastle, Australia)

Contact

Ms Nurhadhinah / Ms Elaine Chow

Tel: 6730 4503 / 6730 4528

email: nurhadhinah_osman@bca.gov.sg;

elaine_chow@bca.gov.sg