

MEDIA RELEASE

BUILT ENVIRONMENT SECTOR LOOKS TO ATTRACT MORE LOCALS THROUGH TECHNOLOGY AND INNOVATION

- Close to 160 students receive built environment scholarships

4 August 2016 – The Building and Construction Authority (BCA), in partnership with industry firms, presented 158 scholarships to undergraduates and diploma students from built environment courses at a scholarship award ceremony today. The scholarships are part of BCA and the industry's initiatives to attract and retain more locals in the sector.

2. Mr Desmond Lee, Senior Minister of State for Home Affairs and National Development was the Guest-of-Honour for the event. Mr Lee highlighted that technology is an enabler in helping us build taller, deeper and better.

3. There are many exciting innovations in the sector and embracing technologies allows us to create good careers for Singaporeans. We also need to design and construct buildings and infrastructure to cater to building users and respond to challenges such as an ageing population and climate change. To do so, we will require young talents to join the sector and contribute as highly-skilled built environment professionals.

4. So far, more than 200 industry firms have participated in the BCA-Industry Built Environment Scholarship and Sponsorship programmes to attract talent. Based on surveys with these industry sponsors, there is consistently higher demand for Architecture, Civil Engineering and Mechanical and Electrical Engineering students.

Notably, females make up about 30% of the scholars. Please refer to **Annex A** for the some of the scholarship recipients this year.

5. “To overcome the tight manpower situation in the built environment sector, firms need to redesign work processes and jobs through a Design for Manufacturing and Assembly approach and move towards lean construction. We also encourage firms to partner us in offering scholarships to locals to build up a strong local core and meet their manpower needs in the long term,” said Dr John Keung, CEO of BCA.

6. “To develop and nurture the next generation of leaders in the built environment sector, we have also recently enhanced the industry Young Leaders Programme (YLP). The YLP provides a platform for young leaders in the sector to network, build on their expertise and develop innovative solutions to strategic challenges, to transform the sector. As the younger generation will be leading future growth of the built environment sector, we are creating more opportunities to engage them on key issues in the sector,” Dr Keung added. Please refer to **Annex B** on the YLP.

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About BCA

The Building and Construction Authority (BCA) of Singapore champions the development of an excellent built environment for Singapore. BCA’s mission is to shape a safe, high quality, sustainable and friendly built environment, as these are four key elements where BCA has a significant influence. In doing so, it aims to differentiate Singapore’s built environment from those of other cities and contribute to a better quality of life for everyone in Singapore. Hence, its vision is to have "a future-ready built environment for Singapore". Together with its education arm, the BCA Academy of the Built Environment, BCA works closely with its industry partners to develop skills and expertise that help shape a future-ready built environment for Singapore. For more information, visit www.bca.gov.sg.

ANNEX A

Two-time Scholarship Recipient Puts her Architecture and Civil Engineering Knowledge into Practice

1. Aqilah's passion for architecture was cultivated since young when her hobby was to use her creativity to build things using Lego. She is also inspired by the beauty and architecture of iconic buildings such as the Marina Bay Sands.

2. Aqilah is from a family of 5 with an elder brother and a younger sister. When she was in secondary school, her father who was the sole breadwinner as a supervisor, had lost his job. Although he managed to find employment as a delivery driver, the salary was lower than his previous job. Hence, when she was pursuing her education in Higher Nitec in Civil & Structural Engineering Design at the Institute of Technical Education (ITE), it was a challenging time for her family financially with her brother in National Service and sister still studying. Receiving the BCA-Industry Built Environment ITE Scholarship provided her family with much needed financial support. Aqilah then enrolled in the Diploma in Architecture in Singapore Polytechnic as she was interested in architectural design. She feels that a

good architect will take into consideration the practicality and feasibility of the building design. Therefore, her foundation knowledge in civil engineering gained in ITE has provided her with an advantage of being able to see designs from both the architectural and engineering perspectives.

3. Seeing the potential in Aqilah, S A Chua Architects Pte Ltd awarded her the BCA-S A Chua Built Environment Diploma Scholarship in 2016. Aqilah has recently completed her 12 weeks internship with her sponsoring firm. During her internship, she had the opportunity to put her design skills into good use for an addition and alteration project for Tekka Centre as well as a covered linkway project. Aqilah supported the architects with on-site inspections and checked if the projects meet the productivity standards. Sharing her internship experience, she said "the internship has been a rewarding experience for me. Working closely with an experienced architect allowed me



Aqilah Binti Alwi,
21 years old

- 2016 BCA-S A Chua Built Environment Diploma Scholar
- Pursuing Diploma in Architecture, Year 3 at Singapore Polytechnic

to comprehend the nature of the job better. Knowledge was shared through clearly delineated processes, integrating systems, routines and a set of procedures. I was also exposed to a problem based and collaborative based approach which are tailored to meet the learning goals.”

4. S A Chua Architects is one of the 221 firms who signed the HR pledge to commit to adopt good HR practices towards a better built environment workplace. Through the post-diploma development programme, S A Chua Architects will provide opportunities to upgrade her skills in the area of architecture and aid her career progression. Aqilah is excited about her career progression pathway in the built environment sector and is looking forward to embarking her career with S A Chua Architects next year.

Making a Switch to Building and Construction - Validating her Career Choice in the Built Environment Sector with a Rewarding Internship Experience

1. During her Diploma studies in Tourism & Resort Management, Pui Yee was exposed to key iconic buildings such as Marina Bay Sands. This spurred her curiosity to learn more about the built environment sector and acquire professional knowledge on building and construction. Coupled with the opportunities in the sector, she made the decision to enroll in the Project & Facilities Management (PFM) course at NUS.

2. During her studies in NUS, Pui Yee found her interest to specialise in Quantity Surveying. She applied for an internship at Langdon & Seah Singapore Pte Ltd this year, which proved to be a fulfilling and enriching experience for her. During her stint there, she was given the opportunity to be involved in cost planning for a few projects, such as the construction of the new Outram Community Hospital. The rewarding internship experience at Langdon & Seah had also helped Pui Yee validate her career choice as a Quantity Surveyor. Sharing her experience at Langdon & Seah, she said “fast-paced, structured and consistent are words I would use to describe this job and myself”. Satisfied with Pui Yee’s internship performance and perceiving her as a good match for the firm, Langdon & Seah partnered BCA to award her the Built Environment Undergraduate Scholarship in 2016.

3. With an outgoing character, Pui Yee is actively involved in sports and working in construction sites has never deterred her from joining the built environment sector. Positive on the future of the built environment sector, she is excited to embark her career in this sector.

4. Given her humble family background, Pui Yee had to support her Diploma and Undergraduate studies on her own. She is grateful that the scholarship award will help to lighten her financial burden so that she can focus on her studies. She is excited to be given the opportunity to work at one of the leading cost and project management consultancy firms in Asia, and believes that Langdon & Seah would be able to provide her with many career progression opportunities as she hopes to grow in the firm.



Chea Pui Yee, 22 years old

- 2016 BCA-LS Built Environment Undergraduate Scholar
- Pursuing Bachelor Degree in Project & Facilities Management, Year 3 at National University of Singapore, for the upcoming academic year

Carving Pathway to a Better Career with an Enriching Internship

1. When Han Zhengguang enrolled in the Civil Engineering course at the National University of Singapore, he learnt how interesting, challenging and rewarding the Built Environment (BE) sector can be. “In my Civil Engineering course, I relish working with people, bouncing ideas off one another and revel in the delight of achieving something I can be proud of. With the transformation of the BE sector, these knowledge and experiences I have gained only leave me to be even more excited for the future,” says the enthusiastic undergraduate.

2. After being awarded the Built Environment Undergraduate Scholarship by BCA and Tiong Seng Contractors (Pte) Ltd, Zhengguang also had the opportunity to undergo internship with his sponsoring firm. His internship proved to be a very enriching and fruitful one as he picked up several skills and gained a more in-depth knowledge of the sector. Zhengguang says, “Within a short span of time, I have experienced and learnt many things outside of classroom. The sector has a broad spectrum and no two projects are similar. I have also been given a structured plan for my 6 months internship right on day one itself and my supervisors have been incredibly helpful and encouraging. The culture and practices of Tiong Seng has definitely affirmed my career choice!”

3. Zhengguang is currently involved in the JTC Space @ Tuas project which is constructed using the game-changing technology, Prefabricated Pre-finished Volumetric Construction (PPVC). PPVC can significantly improve site safety as building modules are constructed off-site in a factory controlled environment before being assembled on-site. It was the first time that Zhengguang learnt about this productive construction method and witnessing it first-hand had been an eye-opening experience for him. In addition to PPVC, Zhengguang also got to witness the adoption of other productive technologies such as precast construction.

4. Zhengguang is now even more inspired and eager to undertake more of such exciting projects upon graduation. He believes that his involvement in such a dynamic and innovative project will benefit him in nurturing his growth, provide him a good transition from an undergraduate to a working adult and allow him to scale greater heights.



Han Zhengguang, 23 years old

- 2016 BCA-Tiong Seng Built Environment Undergraduate Scholar
- Pursuing Bachelor Degree in Civil Engineering, Year 3 at National University of Singapore. for the coming

5. Zhengguang is deeply honoured and glad to be awarded the Built Environment Undergraduate Scholarship by BCA and Tiong Seng. This scholarship has not only lightened his financial burden but more importantly, it will provide him a headstart in his career, with many valuable learning opportunities and eventually a rewarding career with Tiong Seng.

Championing a liveable built environment: BCA-CDL Built Environment Undergraduate Scholar and Industry Young Leader Lim Kah Huay

1. Kah Huay was awarded the Undergraduate Scholarship jointly offered by BCA and City Developments Limited (CDL) in 2008. Her deep passion for environmental issues and desire to contribute to the local environment scene led her to pursue undergraduate studies in Environmental Engineering at NUS and organise activities as a member of NUS' Environmental Engineering Club.

2. Upon graduation, she commenced her career with CDL as an Executive in its Projects division in 2012. Her knowledge and expertise in environmental engineering has been advantageous in her project management role with eco-developer CDL.

3. Beyond active management of project timelines and product quality deliverables, she also seeks to value-add with inputs on green building aspects and implementation of eco innovation in managing the environmental and health aspects of construction. Apart from local development projects, Kah Huay has had the opportunity to be involved in some of CDL's overseas projects in China. She was a key member of the team for CDL's Eling Residences project in Chongqing, which will likely be China's first Green Mark Platinum residential project when it is completed next year. She aspires to use her green building expertise for more overseas projects in the future.

4. Beyond sustainable building design and construction methodology, Kah Huay also counts Universal Design (UD) as another key interest area as she firmly believes that the built environment should be designed for all users. Since 2015, Kah Huay has been a Certified UD Assessor. Within the CDL Projects division, she is a member of its UD committee, and is actively involved in refining in-house UD guidelines for CDL's projects in alignment with industry best practices and the latest Accessibility Code. Using knowledge gained from the conferences she has attended, as well as practices adopted in other developments, she has championed for user-friendly building designs such as the provision of secondary handrails for staircases and specific grading of slip resistance in units and common areas to ensure that developments cater to the needs of all users.



Lim Kah Huay, 27

- Undergraduate Scholarship jointly offered by BCA and CDL in 2008
- Graduated with a Degree in Environmental Engineering from National University of Singapore in 2012
- Assistant Manager, Projects at CDL, since 2016

5. Kah Huay is currently working on two residential projects: Echelon, a 508-unit residence along Alexandra Road and D'Nest, a 912-unit residence at Pasir Ris Grove. Both projects are designed with sustainability in mind and embrace best practices in community-friendly design. Echelon is a Green Mark Platinum and UD Mark Gold (Design) awarded project, while D'Nest is a recipient of the Green Mark Gold^{PLUS} and UD Mark Gold (Design) Awards, and has set record for the 'Largest Solar Panels in a Condominium' in the Singapore Book of Records in 2013.

6. This year, Kah Huay has also been inducted in the Built Environment Young Leaders Programme (YLP), where she looks forward to participating in the policy formulation process, leveraging cross-sector learning opportunities and networking opportunities with public and private leaders in the built environment (BE) sector. She has also been roped into the Green Buildings Taskforce under YLP and hopes to share her green experiences as well as learn from seniors in the Taskforce.

7. With heightened focus on climate change, the BE sector offers tremendous potential for passionate professionals like Kah Huay to actively shape our built environment into a future-ready, climate resilient and user-friendly one.

ANNEX B

Young Leaders Programme 2016

Objective:

14 BCA and 97 Industry YLs

To **retain & nurture a community of young industry leaders** to partner BCA to lead and transform the

Strategic Thrusts to groom the next generation of Industry Champions:

<ul style="list-style-type: none"> • Wide network of peers • Govt & private organisations <p>Develop relationships</p> 	<ul style="list-style-type: none"> • Share knowledge / case studies • Share best practices • Learning journeys <p>Deepen skill sets</p> 	<ul style="list-style-type: none"> • Emerging technologies, practices, ideas • Innovative solutions <p>Create new knowledge</p> 	<ul style="list-style-type: none"> • Career promotion • Mentor young scholars • CSR activities <p>Give back to society</p> 
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New - Formation of 6 Taskforces:

Taskforce	Focus Topics
Taskforce 1	Building Information Modelling/ Virtual Design & Construction
Taskforce 2	Design for Manufacturing & Assembly
Taskforce 3	Manpower Development
Taskforce 4	Green Buildings
Taskforce 5	SG100 / Universal Design
Taskforce 6	Smart Nation

New - Built Environment Speakers' Series

- local and overseas experts
- public and private local leaders



ANNEX C

BCA-Industry Built Environment Undergraduate Scholarship 2016

1 BCA has been offering the BCA-Industry Built Environment Undergraduate Scholarships in partnership with leading industry firms since 1993. The objective of this scholarship programme is to offer young people of high calibre and vision an opportunity to take up the challenge of a career in the built environment sector.

2 Details of the undergraduate scholarship scheme are as follows:

Value of Award and Bond

- Minimum S\$18,000 per year for each scholar who is either a Singapore Citizen or Singapore Permanent Resident with at least 1-year bond with the sponsor company
- Minimum S\$14,000 per year for each scholar who is a foreigner (for engineering courses only) with at least 1-year bond with the sponsor company

Eligibility

- Singapore Citizens and Singapore Permanent Residents
- All other nationalities in relevant engineering courses
- Open to 'A' level, Polytechnic students and undergraduates
- Outstanding academic results
- Excellent CCA records

Courses Available for Application (NUS, NTU, SIT, SUTD, BCAA)

- Architecture
- Building Services
- Civil Engineering
- Construction Management
- Electrical Engineering
- Environmental Engineering
- Mechanical Engineering
- Project & Facilities Management
- Real Estate

<For BCA's internal reference: Number of Industry Sponsors and Undergraduate Scholarships since 1993>

Year	'93	'94	'95	'96	'97	'98	'99	'00	'01	'02	'03	'04	'05	'06	'07	'08	'09	'10	'11	'12	'13	'14	'15	'16
No of sponsors	8	11	12	17	17	16	17	13	15	11	1	0	3	5	5	7	13	20	33	31	41	50	45	50
No of scholars	12	15	16	21	22	19	19	17	21	13	1	0	4	5	6	12	19	34	55	61	96	109	113	99

BCA-Industry Built Environment Diploma Scholarship 2016

1 The Diploma Scholarship is a partnership between BCA and industry firms to offer young people of high calibre an opportunity to take up full-time built environment courses at the local Polytechnics and the BCA Academy.

The programmes are structured in two stages. Stage 1 provides financial incentives during diploma study. Stage 2 provides a clear progression path and attractive salary for diploma graduates.

2 Details of the diploma scholarship scheme are as follows:

Value of Award and Bond for Stage 1 (Diploma Study Phase)

- Annual allowance of \$15,000 per scholar per year with at least a 2-year bond with the sponsoring firm

Minimum Monthly Salary and Incentives for Stage 2 (Post-Diploma Development Phase)

- Sponsoring firm will provide the graduate with a structured On-Job-Training in the first year and enrol the graduate in a part-time Specialist/Advanced Diploma in the second year

Local Diploma Graduate

- First year – Minimum monthly basic salary of S\$2,200
- Second year - Upgrading incentive of up to S\$2,300 on a 6-monthly basis together with a minimum monthly basic salary of S\$2,400
- Sponsoring firm pays for unsubsidised portion of Specialist/Advanced Diploma course fee, after MOE/WDA subsidy (where applicable)

Diploma Graduate of other Nationalities

- First and second year – A minimum monthly basic salary of S\$2,200
- BCA provides up to 40% course fee subsidy for Specialist/Advanced Diploma

Eligibility

- Singapore Citizens, Singapore Permanent Residents, or other nationalities
- 'O' level / ITE school leavers and Polytechnic students taking full-time built environment diploma courses
- Outstanding academic results and excellent CCA records

Courses Available for Application for Stage 1 and Stage 2

Built environment courses at the local Polytechnics and the BCA Academy.

<For BCA's internal reference: Number of Industry Sponsors and Diploma Scholarships since 2012>

Year	'12	'13	'14	'15	'16
No of sponsors	11	5	8	9	10
No of scholars	19	7	9	11	11

Courses Tenable for Diploma Scholarship

Stage 1 (Diploma Study Phase)

- Full-time built environment Diploma courses at BCA Academy and Polytechnics

BCA Academy

1. Architecture (Technology)
2. Construction Engineering
3. Construction Information Technology
4. Design (Interior and Landscape)
5. Electrical Engineering & Clean Energy
6. Facilities Management
7. Mechanical Engineering (Green Building Technology)
8. Quantity Surveying

Nanyang Polytechnic

1. Electrical Engineering with Eco-Design
2. Spatial Design (was Space and Interior Design)

Ngee Ann Polytechnic

1. Clean Energy Management
2. Electrical Engineering
3. Environmental & Water Technology
4. Hotel & Leisure Facilities Management
5. Mechanical Engineering
6. Real Estate Business
7. Sustainable Urban Design & Engineering

Republic Polytechnic

1. Green Building Energy Management

Singapore Polytechnic

1. Architecture
2. Civil Engineering with Business
3. Electrical & Electronic Engineering
4. Energy Systems and Management
5. Environmental Management & Water Technology
6. Hotel & Leisure Facilities Management
7. Integrated Events & Project Management
8. Interior Design
9. Landscape Architecture
10. Mechanical Engineering

Temasek Polytechnic

1. Clean Energy
2. Environment Design
3. Green Building & Sustainability
4. Integrated Facility Management
5. Interior Architecture & Design

Stage 2 (Post-Diploma Development Phase)

- Part-time Specialist / Advanced Diploma

BCA Academy

1. Specialist Diploma in Architectural Technology
2. Specialist Diploma in Building Cost Management
3. Specialist Diploma in Building Information Modeling (BIM)
4. Specialist Diploma in Construction Management
5. Specialist Diploma in Construction Productivity
6. Specialist Diploma in Facility & Energy Management
7. Specialist Diploma in Interior & Landscape Design
8. Specialist Diploma in M & E Coordination

Ngee Ann Polytechnic

1. Diploma (Conversion) in Facility Management

Singapore Polytechnic

1. Advanced Diploma in Building Automation & Services
2. Specialist Diploma in Energy Efficiency and Management

Temasek Polytechnic

1. Specialist Diploma in Energy Management & Sustainable Design