# **TOMORROW IS IN OUR HANDS**

BUILDING AND CONSTRUCTION AUTHORITY

**ANNUAL REPORT** 2016/17



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# MISSION

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

## VISION

A future-ready built environment for Singapore

## STRATEGIC THRUSTS

In line with our mission and vision, our strategic thrusts are:

- A Caring and Innovative Organisation
- A Safe and High Quality Built Environment
- A Friendly and Sustainable Built Environment
- An Advanced and Productive Built Environment Sector
- Effective Partnerships with Our Stakeholders

## **CORE VALUES**

#### **WE CARE**

We care for our staff, our customers, the community and the environment

#### **WE DARE**

We dare to be innovative in transforming BCA and the built environment

#### **WE CAN**

We can overcome all challenges with courage, confidence and commitment

## CHAIRMAN'S MESSAGE

"As the agency for Singapore's built environment, our goal is for our industry to become one of the most advanced and progressive in the region, if not the world."

The Building and Construction Authority (BCA) has come a long way since we were formed in 1999. We have grown with Singapore as our country progressed through the decades, contributing to the safety of our built environment and the development of the industry. The built environment is special, and we are always mindful that what we do today will have an enduring impact on the physical and social landscape of our country for many generations to come.

As the agency for Singapore's built environment, our goal is for our industry to become one of the most advanced and progressive in the region, if not the world.

We must continue to uphold high safety standards while ensuring that our regulatory regime remains relevant even as our projects grow in size and engineering complexity. BCA is conducting several regulatory reviews to strengthen building safety and maintenance. The reviews cover lift and escalator safety, building maintenance and strata management, façade and exterior features. Although our built environment has achieved a good safety record, even when ranked against the best first-tier cities of the world, we would still want to make it safer.

To chart the way forward and help the industry meet new challenges, BCA is developing the Construction Industry Transformation Map (ITM) following the recommendations of the national Committee for Future Economy. Demonstrating our close working relationship, the Map will be developed with industry players, trade associations and business chambers, and unions. The Ministry of National Development and BCA have already embarked on a series of consultations. We will continue to work closely with all our stakeholders in changing the way we build.

To enhance productivity, BCA will continue to implement the measures under the 2nd

Construction Productivity Roadmap. We will continue to encourage the industry to pursue productive construction technologies and enhance the quality of the construction workforce.

Design for Manufacturing and Assembly (DfMA) is one such technology that BCA will seek to introduce to the industry. The Government will take the lead in productivity with a strong pipeline of public sector projects requiring the use of DfMA and therefore, creating demand for it. This will be supported by the new S\$150 million Public Sector Construction Productivity Fund (PSCPF). Another advanced construction method is prefabrication and BCA will be launching more sites for development of Integrated Construction and Prefabrication Hubs (ICPHs). BCA will also introduce the requirements for mandatory native Building Information Modelling (BIM) submissions, with the phased development of the Automated Checker to help Qualified Persons improve the quality of BIM models.

BCA will promote the adoption of Integrated Digital Delivery (IDD) to the industry. IDD aims to connect various industry parties involved in building and construction projects through shared digital information. The shared information, created through BIM, will allow the integration of the entire project delivery process from design, fabrication in factories, assembly on-site and eventually, operations and maintenance of buildings. IDD and BIM will improve the accuracy of plans, better co-ordinate the production and delivery of factory-produced building parts, speed up construction, and reduce noise and disamenities to neighbours around the construction site.

Research and innovation will play a key role in developing the next wave of building technologies. We have been testing energy efficiency technologies for buildings at the BCA SkyLab. These tests cover air-conditioning and mechanical ventilation (ACMV), lighting, façades, plug load and control strategies. To strengthen our expertise in greening buildings in the region, BCA will be developing a Research, Development and Demonstration Roadmap to achieve BCA's target of "positive energy lowrise buildings, zero energy medium-rise buildings and super-low energy high-rise buildings in the tropics". At the BCA Academy, the existing Zero Energy Building will be retrofitted with new green technologies.

As we continue to develop our infrastructure, we are also mindful that they should serve the diverse needs of our people and community. With changing demographics, it is timely to review our Accessibility Code. BCA will engage the industry together with stakeholders such as Voluntary Welfare Organisations, government agencies and building owners to gather their views on the Code's next review.

Despite the current challenging economic conditions, we - the industry, the Government and relevant stakeholders – will continue to work hand-in-hand to transform our built environment sector into an advanced, high quality and highly productive industry which can generate greater value, foster inclusiveness, and offer good jobs for our people. With the support of our industry in changing the way we Build Singapore, we can transform the built environment sector into one that is brimming with opportunities which our children can aspire to be a part of.

Mr Lee Fook Sun Chairman

BUILDING AND CONSTRUCTION AUTHORITY

## BOARD MEMBERS

### Chairman 1 Mr Lee Fook Sun

Board Member
C Mr Frankie Chia
Soo Hien
Managing Partner, BDO LLP

#### CEO 3 Mr Hugh Lim

Chief Executive Officer, Building and Construction Authority

#### Board Member **4 Er Lai Huen Poh**

Managing Director, RSP Architects Planners & Engineers Pte Ltd

#### Board Member 5 Dr Lim Jui

Chief Executive Officer, NTU Innovation & Chief Executive Officer, NTUitive Pte Ltd

#### Board Member 6 Mr Kenneth Loo

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Executive Director and Chief Operating Officer, Straits Construction Group Pte Ltd

#### Board Member 7 Mr Han Fook Kwang

Editor-at-Large, The Straits Times, Singapore Press Holdings Ltd

## Board Member Board Member Image: Mr Ang Wee Gee

Chief Executive Officer, Keppel Land Limited

#### Board Member 9 Mr Terence Ho

Divisional Director, Manpower Planning and Policy Division, Ministry of Manpower

### Deputy Chairman Image: Image: Deputy Chairman Image: Im

Chairman, WBL Corporation Limited Group Managing Director, United Engineers Limited

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Board Member 11 Mr Yong Tiam Yoon Deputy Chairman, Woh Hup Pte Ltd

Board Member Description: Board Member Mr Tang Kok Thye Associate Partner, ADDP Architects LLP

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#### Board Member Board Mohamad Saiful Saroni

Partner, PricewaterhouseCoopers LLP

Board Member Ms Kala Anandarajah Partner, Rajah and Tann LLP

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## SENIOR MANAGEMENT

#### **1** Mr Ang Lian Aik

Group Director, Construction Productivity and Quality Group

#### 2 Er Chew Keat Chuan

Group Director, Building Engineering Group, Commissioner of Building Control

#### 3 Mr Neo Choon Keong

Deputy CEO, Industry Development

#### **4 Mr Hugh Lim**

Chief Executive Officer

#### **5 Mr Chin Chi Leong**

Deputy CEO, Building Control, Commissioner of Buildings, Commissioner of Amusement Rides Safety

6 Mr Choo Whatt Bin Executive Director, Services

7 **Ms Jeanna Das** Group Director, Corporate Development Group

#### 8 Er Thanabal Kaliannan

Deputy Managing Director, Built Environment Technology Centre Group Director, Special Functions Group

#### In Teo Orh Hai

Group Director, Building Plan and Management Group

#### 10 Mr Tan Tian Chong

Deputy Managing Director, Built Environment Research and Innovation Institute

#### 11 Mr Tan Chee Kiat

Group Director, Business Development Group

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# 19 Mr Ang Kian Seng

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Group Director, **Environmental Sustainability** 

#### 20 Mr Koh Lin Ji

#### **21 Er Ong Chan Leng**

Deputy Managing Director, Built Environment Technology Centre

#### **Mr Teo Jing Siong**

Group Director, Strategic Planning Office (Appointed on 21 Aug 2017)

#### 12 Er Ong See Ho

Managing Director, **Built Environment Technology** Centre

#### **13 Mr Benedict Tan**

Senior Advisor

#### 14 Dr John Keung

Dean BCA Academy

#### 15 Er Lam Siew Wah

Managing Director, **Built Environment Research** and Innovation Institute

#### **16 Er William Tan**

Senior Project Director and **Managing Director BCA** Academy

**17 Mr Cheng Tai Fatt** Deputy Managing Director, **BCA Academy** 

#### **18 Er Grace Mui**

Group Director, Manpower Strategy and Planning Group

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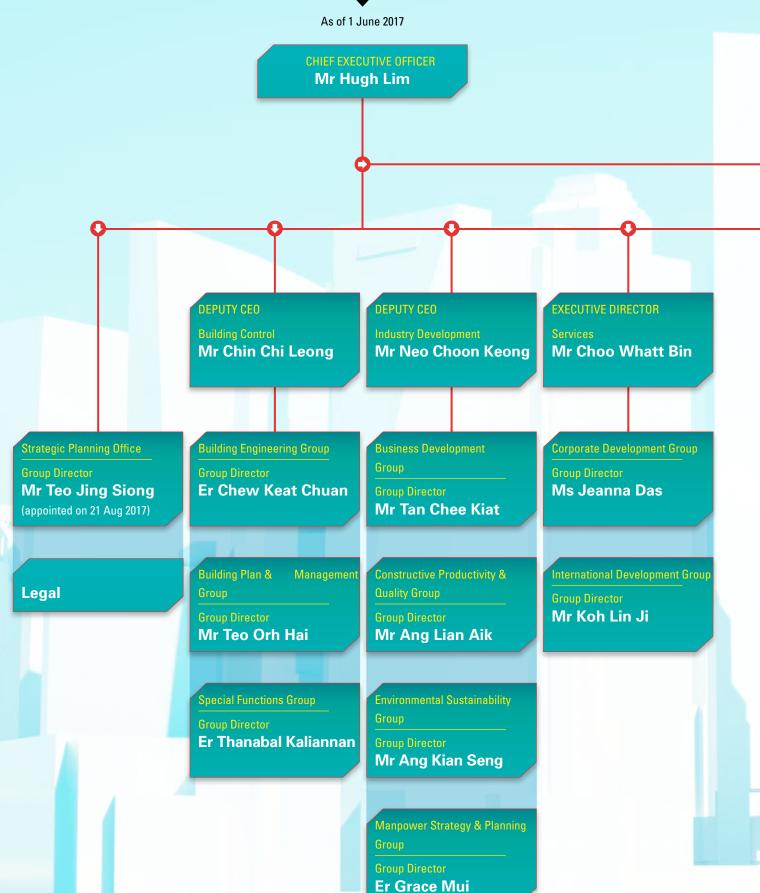
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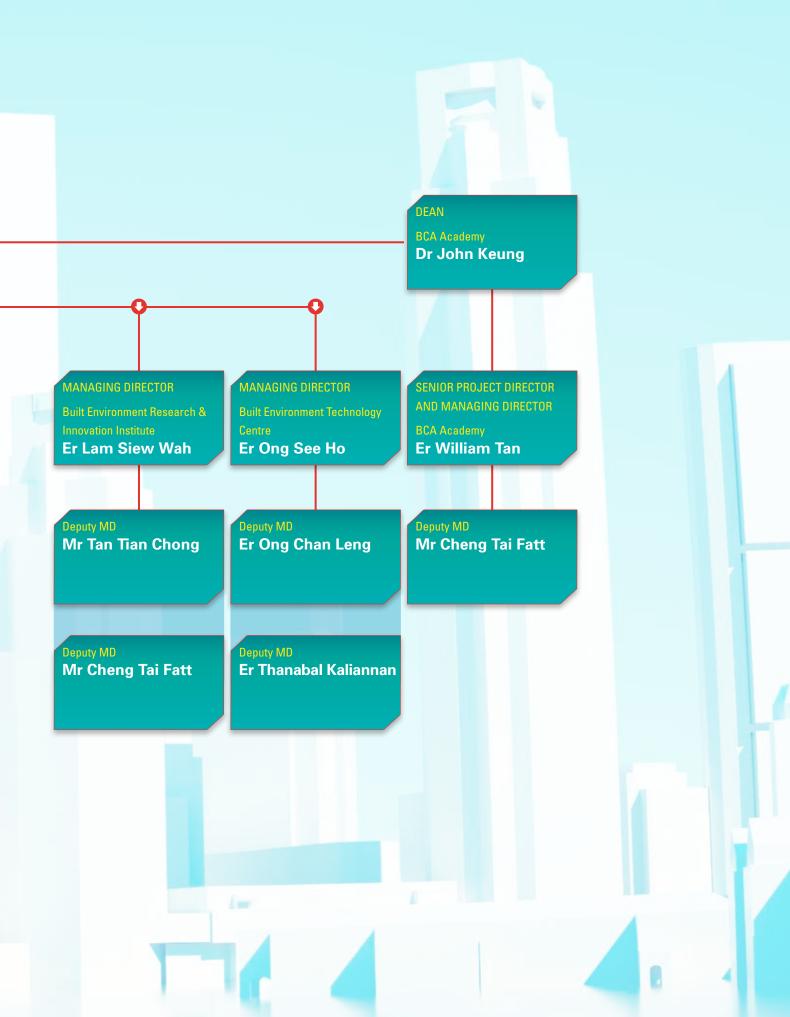
Group Director, International **Development Group** 

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## BCA ORGANISATION STRUCTURE





## CORPORATE GOVERNANCE

BCA is committed to good corporate governance. We have put in place a Code of Corporate Governance to formalise the principles and practices of governance within BCA to ensure accountability, responsibility and transparency.

#### **BOARD MEMBERS**

The Board currently comprises 14 members. All are non-executive members, except Mr Hugh Lim who is BCA's Chief Executive Officer. The Board comprises representatives from the industry, academia and ministries. The diverse representation on the Board provides an appropriate range of experience, skills, knowledge and perspectives to enable it to play an active role in guiding BCA to achieve its mission and vision. The Chairman provides strategic leadership and guidance to the management of BCA, and ensures that discussions are fairly, objectively and independently conducted.

The Board meets at least six times a year to evaluate, approve and monitor the plans and budgets of BCA. It also oversees the work and performance of the Management and assesses the financial health of BCA.

The BCA Act empowers the Board to form committees from among its members to support the work of the Board.

#### **FINANCE AND AUDIT**

#### **Internal Controls**

The Board ensures that the Management maintains a sound system of internal controls to safeguard the interests and assets of BCA. It also ensures that reviews of BCA's key internal controls in finance, operations and compliance are conducted annually through internal and/or external audits according to the direction of the Audit Committee.

#### Audit Committee

The Audit Committee reviews the audited financial statements with external auditors, as well as reviews audit plans and observations of the external and internal auditors. It also ensures that the Management takes appropriate action for audit observations and the Audit Committee's recommendations. The Audit Committee also provides guidance for BCA's Fraud Reporting policy. All members in the Audit Committee are non-executive members.



Section 1

# MAKING OUR BUILT ENVIRONMENT SAFER

#### **1.1. CONDUCTING TIMELY REVIEWS TO ENHANCE REGULATIONS**

To ensure its acts, regulations and codes continue to remain relevant and effective in today's fastpaced environment, BCA conducts periodic and timely rules reviews to promote a progressive yet safe built environment.

BUILDING CONTROL	BUILDING MAINTENANCE	ENHANCED REGULATORY
ACT AND BUILDING	AND STRATA	FRAMEWORK ON THE
CONTROL (INSPECTION OF	MANAGEMENT ACT	SAFETY OF BUILDING
BUILDINGS) REGULATIONS	(BMSMA)	FACADES
<ul> <li>Latest cycle was completed in end-2015:</li> <li>25 existing rules revised</li> <li>23 existing rules removed or relaxed 4 new rules introduced</li> </ul>	<ul> <li>Provides a self-regulatory framework for the management and maintenance of strata-titled developments</li> <li>Being reviewed with public consultation conducted to solicit feedback on 33 proposed amendments</li> <li>Proposed amendments include:         <ul> <li>tightening of proxy system</li> <li>consent of nominees required for election of council members</li> <li>expansion of Commissioner of Building's monitoring powers</li> </ul> </li> </ul>	<ul> <li>Ensures public safety in Singapore's high-rise and densely built-up environment</li> <li>Review conducted to ensure facades and exterior features of older buildings are well-maintained, regularly inspected and properly secured</li> <li>Regulatory framework being finalised</li> <li>Review includes benchmarking our framework against similar jurisdictions in major overseas cities</li> </ul>

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#### **1.2. ELEVATING LIFT AND ESCALATOR SAFETY TO GREATER HEIGHTS**

- Implemented the Enhanced lift and escalator (L&E) regulatory regime on 25 July 2016
  - Aimed at tightening downstream maintenance requirements
  - New regulations are:
    - » Escalator maintenance will become part of the regulatory regime.
    - » The amended BMSM (Building Maintenance Strata Management) Regulations 2016 requires registered lift contractors to meet 20 maintenance outcomes when they maintain lifts and 10 outcomes for escalators.
    - » Owners must apply for a permit to operate (PTO) and it must be displayed in the lift cabin from 1 September 2017 and escalators from 1 March 2018.
    - » Lift and escalator owners and contractors must notify BCA of safety-critical incidents.
    - » Lift and escalator contractors are required to put in place adequate barriers when a lift or escalator is not in operation, such as during repair or maintenance works.

BCA engineers conducting audit checks on lifts and escalators



- Recommended eight retrofitting items to improve reliability and performance of existing lifts, following a review of standards in foreign jurisdictions, including European and US standards, and our audit and investigation findings from major lift incidents
- Introduced a new branch of Specialist Professional Engineers for lifts and escalators in January 2017
- Introduced a new five-day course on lifts and escalators, conducted at the BCA Academy
- Produced two short videos that were screened on various public platforms, including cinemas, MRT platform screens, online social media advertisements and retail buildings; each highlighted the Do's and Don'ts when using lifts and escalators.
- BCA has been working with shopping complexes, transport operators, community centres and cinema theatres to screen our "Safe Use of Escalators" videos and disseminate our lift and escalator safety posters in four languages to raise awareness on the safe use of lifts and escalators. About 140,000 posters were distributed to lift owners including Town Councils, commercial buildings and MCSTs (management corporations strata titled). More than 10,000 posters were distributed to train stations, hospitals, institutes of higher learning, and shopping complexes, among others.

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## **1.3. PROMOTING THE IMPORTANCE OF MAINTENANCE**

#### Window Maintenance

- No. of fallen window cases in 2015: 34
- No. of fallen window cases in 2016: 46
- To raise public awareness on the importance of window safety, BCA distributed 450,000 mailers and flyers as well as 60,000 posters to public and private residential estates:
- BCA also conducted 10 window safety roving exhibitions, where homeowners, residents and foreign domestic workers learned simple window maintenance tips from demonstrations at our Window Safety booth.

BCA officer showing Minister Lawrence Wong what to check for window safety during his visit to Limbang Estate on 25 March 2017



#### 1.4. IMPROVED OUR CENTRAL DEPOSITORY FOR UNDERGROUND SPACE PLANNING AND DEVELOPMENTS

BCA is continually building up a centralised depository of geological and underground information in Singapore to support underground space planning and developments.

2012 ▼	Geo-survey works started. 31 boreholes have been drilled and 1,079 core boxes collected.	
2013 ▼	Geo-data in electronic format AGS (SG) was standardised and implemented for the industry's use.	
2014 ▼	Preliminary three-dimensional geological model was created after the 2012 geo- survey works had completed.	
2015 ▼	Geo-survey works started at the western and north-western parts of Singapore. 65 boreholes have been drilled and 2,119 core boxes collected.	
2016 ▼	<ul> <li>Geo-survey works started at the central parts of Singapore. To date, 18 boreholes have been drilled and 574 core boxes collected.</li> <li>Prelim three-dimensional geological model was updated according to the new data from the 2015 &amp; 2016 geosurvey works.</li> <li>Plans of two building substructures of two buildings (One Raffles Quay &amp; Marina Bay Financial Centre) were converted into a BIM (building information modelling) format.</li> </ul>	
2017	Tender called to convert plans of buildings at Marina Bay area into BIM models.	

#### **1.5. ENFORCING SAFER CONSTRUCTION OF LANDED PROPERTY DEVELOPMENTS**

BCA has:

- Mandated in February 2017 that contractors involved in landed development projects must develop and implement a communications plan. With this plan, project parties must engage the owners of neighbouring landed properties at the early stage of a project's development so that effective communication channels are established and communication between the parties and the neighbours can be improved, minimising the potential for disputes in future.
- Imposed new conditions in the Permit to Commence Structural Works to minimise damage to an existing party wall. Project parties are required to take additional measures to protect the existing common party wall when carrying out construction works.
- Advised the industry to appoint a single Qualified Person (QP) for landed property development. This is to minimise any safety gaps which can develop when the scope of an individual QP was not clearly demarcated.



Section 2

## TRANSFORMING THE INDUSTRY

#### 2.1 INCREASED ADOPTION OF DESIGN FOR MANUFACTURING AND ASSEMBLY (DfMA) AND INTEGRATED DIGITAL DELIVERY (IDD)

#### 2.1.1 HIGH QUALITY AND PRODUCTIVITY

#### QUALITY

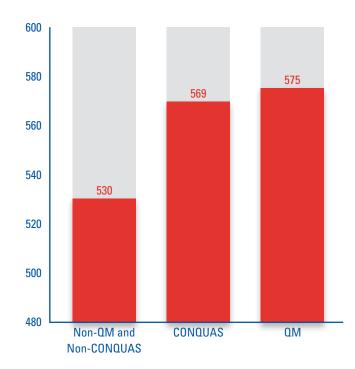
#### **Promoting Quality Workmanship**

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BCA has been promoting the use of Construction Quality Assessment System (CONQUAS) as the de facto national yardstick for measuring the workmanship quality of building projects.

#### **Overall Satisfaction with Quality of** Workmanship



Note: Score ranges from 100 to 1,000 points; The lower the score, the higher the quality

	PP100/Sqft
QM	<b>0.94</b> (Lowest number of problems per 100 units)
CONQUAS	1.11
Non-QM and Non-CONQUAS	1.75

- PP100 = Number of problems experienced per 100 units for that property/developer/market.
- The lower the score, higher is the quality.

#### CONQUAS:

- **95%** of private residential and commercial projects have undergone or applied for CONQUAS assessment
- 88.7 Mean Score (All Buildings)
- 91.2 Mean Score (Private Residential)

#### **BCA Quality Mark:**

- 50% take-up rate
- 82,254 units committed till 31 December 2016
- 81 projects awarded tiered rating

As part of the CONQUAS Enhancement Series, which promotes good practices in workmanship quality of building projects, BCA introduced the 16th Good Industry Practices Guide (GIPG). It features the use of Agglomerated Stone Tiling, a good alternative to natural stones as it has fewer tonality issues and eliminates time-consuming and labour intensive dry laying. It is also harder and less porous than most natural stones.

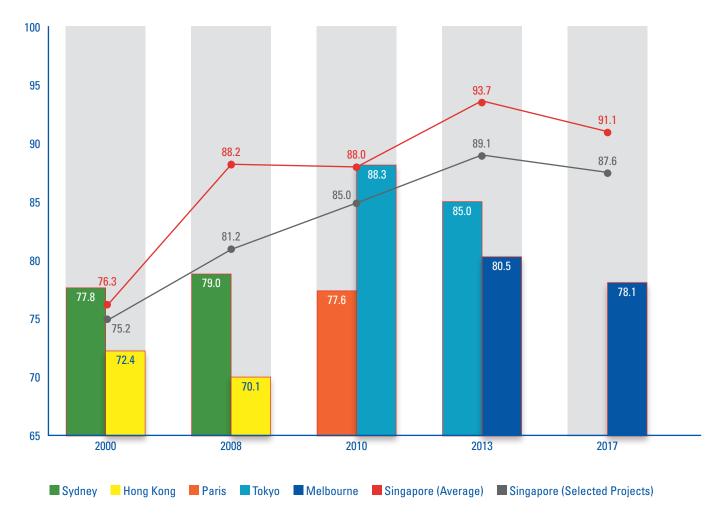
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#### Singapore Building Quality Compares Well With Similar Buildings In Other Cities

In 2016, BCA conducted a benchmarking study to compare Singapore's architectural workmanship quality of private residential buildings and examined our standards and practices against similar buildings in Melbourne and London. From the study, Singapore had performed well in the quality of architectural workmanship compared to Melbourne and London.

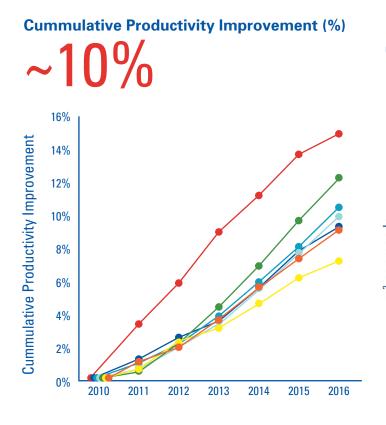
In addition, the past benchmarking studies revealed that Singapore's CONQUAS scores are on par with similar buildings in other major cities.

#### Comparison of benchmarking results for 2000, 2008, 2010, 2013 and 2017 (High-end Projects)



#### PRODUCTIVITY

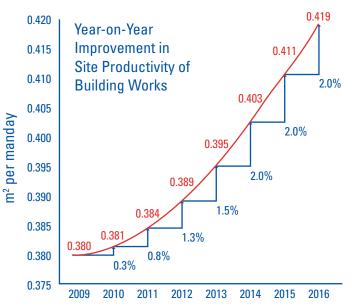
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HDB Residential (Landed) Residential (Non-Landed)

Industry Site Productivity (m<sup>2</sup>/manday)

CAGR<sup>1</sup>: **1 4 1 6** 2009 - 2016



Number of projects completed in 2016:

445 Projects

Total number of projects tracked via ePSS<sup>2</sup>:

1,058 Projects

<sup>1</sup> Compound Annual Growth Rate <sup>2</sup> Electronic Productivity Submission System (ePSS)

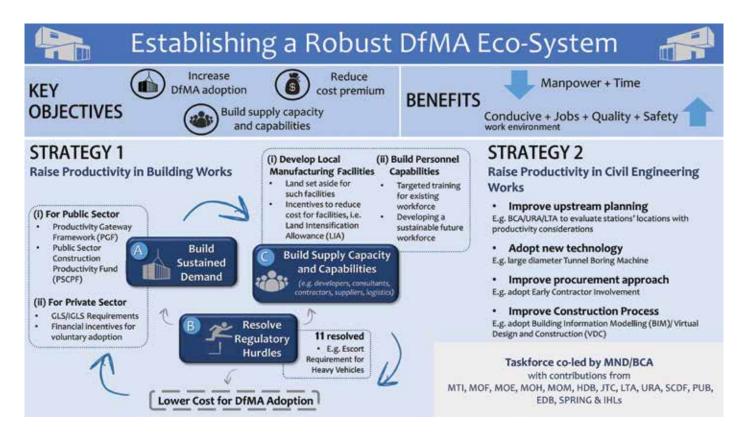
#### Design for Manufacturing and Assembly (DfMA)

BCA identified key productive technologies and organised them into a comprehensive DfMA continuum where the technologies are grouped in a matrix under the categories of Structural, Architectural and MEP (mechanical, electrical and plumbing) systems. In the different categories, technologies are further grouped according to the degree of DfMA:

- fully integrated system e.g. PPVC (Prefabricated Volumetric Construction)
- fully integrated sub-assemblies e.g. MET (mass engineered timber), SS (structural steel) with innovative connections, steel-MEP floor system, PBU (prefabricated bathroom unit), prefinished wall with MEP, prefinished ceiling with MEP and prefab MEP modules with integrated platform or catwalk
- advanced prefabricated systems e.g. structural steel, unitised curtain wall, prefinished wall, slab or ceiling, prefabricated MEP modules and prefabricated MEP plant modules
- prefabricated components

DfMA can help to achieve our target of cumulative 20 to 30% improvement in construction productivity by 2020. Labour intensive onsite work is shifted offsite into factories as much as possible. More extensive prefabrication in factories will result in higher quality and productivity, while onsite installation becomes more efficient.

In March 2016, an inter-agency DfMA taskforce was formed to look into ways to build a robust ecosystem for DfMA technologies.



To build supply capacity in DfMA, BCA encouraged firms to set up local DfMA facilities through various initiatives. The Land Intensification Allowance (LIA) scheme gives firms tax relief on capital expenditure incurred in the construction of Integrated Construction and Prefabrication Hubs (ICPHs). In addition, more sites have been set aside for the development of ICPHs to support local DfMA production.

#### Initatives

Tender for new Integrated Construction Prefabricated Hubs

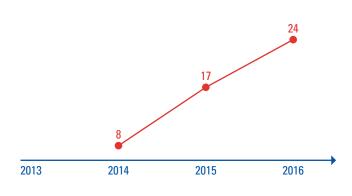
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In 2016, BCA called for the design and build tender of the vehicular bridge and road infrastructures at Pulau Punggol Barat aimed at supporting the new Integrated Construction Prefabricated Hubs (ICPHs)

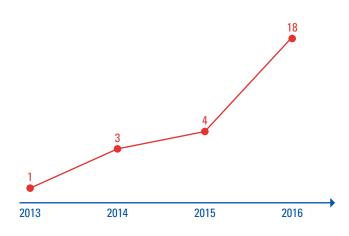
#### Increased Number of Prefabricated Units **Suppliers**

BCA constantly engages suppliers and helps them with approval from multiple public agencies through the BIP (Building Innovation Panel), resulting in more suppliers of pre-fabricated units over the years.





#### Number of PPVC suppliers (Cumulative)



#### Expedited Approval of Innovative Products and Methods

Led by the Ministry of National Development and BCA, an inter-agency Building Innovation Panel (BIP) was set up in 2011 to assist built environment firms in receiving guicker approval from multiple agencies of innovative methods, processes and materials that improve construction productivity significantly.

- No. of PPVC suppliers awarded in-principle acceptance: 18
- No. of PBU suppliers approved: 24
- Improved Standards of Productive **Technologies**

To ensure high quality standards in production and delivery of quality products, there are several BCA accreditation schemes. The assessment of these products is done at the source of the production for quality control.

- Prefabricated Bathroom Unit Manufacturer ▶ Accreditation Scheme (PBU MAS)
  - Introduced in 2014 »
  - No. of accredited PBU systems: 9 »
- Prefabricated Prefinished Volumetric **Construction Manufacturer Accreditation** Schemes (PPVC MAS)
  - Introduced in 2016 >>
  - No. of accredited PPVC systems: 2 »
- No. of accredited precasters: 14
- No. of accredited steel fabricators: 131
- No. of accredited waterproofing specialists: 24

#### DESIGN FOR MANUFACTURING AND ASSEMBLY TECHNOLOGIES

#### MASS ENGINEERED TIMBER (MET)

- Worked closely with SCDF to remove height limits for MET buildings through a fire safety performance-based approach (except for healthcare occupancy within MET buildings)
- SCDF also allowed for the exemption of an automatic sprinkler system and the use of engineered timber for essential escape provisions, subject to conditions

#### PREFABRICATED PREFINISHED VOLUMETRIC CONSTRUCTION (PPVC)

- Facilitated multiple public agencies' evaluation and approval of PPVC suppliers and their systems under the Building Innovation Panel, to strengthen the industry's supply capabilities
- Facilitated the regulatory agencies' consultations and clearances for projects using PPVC

#### GRADE 600 STEEL REINFORCEMENT BARS

- Worked with SPRING Singapore to study the feasibility of using higher grade steel reinforcement bars and developed the new product specification for the grade 600 reinforcement bars in our building code in 2016
- Main benefit of grade 600 as compared to grade 500 is that the reinforcement bar tonnage can be reduced by up to 20%. Using this means that fewer reinforcement bars are required for the same cross-section of a structural element

#### MODULAR MECHANICAL, ELECTRICAL AND PLUMBING (MEP) SYSTEMS

- Raised the industry's awareness on modular prefabricated MEP systems through our learning trips to the United Kingdom, the 4th International Panel of Experts (IPE), seminars, and suppliers' sharing sessions
- Promoted the use of such systems in upcoming local projects through the Productivity Gateway Framework (PGF), Buildable Design Appraisal System (BDAS), Productivity Innovation Project (PIP) scheme, and engaging industry stakeholders and trade associations
- Examples of pilot projects using MEP systems are Woodlands Health Campus

## ADVANCED PRECAST CONCRETE SYSTEMS (APCS)

- Worked closely with GPEs to assess which projects are suitable for the use of APCS, such as larger precast concrete components and mechanical connections
- Raised the industry's awareness on the advantages of APCS over conventional precast through:
  - Learning trips to the Netherlands and Denmark
  - Site visits to local projects that use mechanical connections
  - Precast workshop facilitated by International Panel of Experts members
  - Sharing session from suppliers

#### **RECENT PROJECTS IN SINGAPORE MADE** WITH DFMA

#### **CROWNE PLAZA EXTENSION**

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- First hotel to be completed using the PPVC method
- Every room, including the cabinets, bathrooms, bathtubs and tiles, was prefabricated in a factory before transported to the site for assembly
- Construction required 75% less manpower
- Overall construction time reduced by 40%

#### THE WAVE, NTU'S MEGA SPORTS HALL

- Main feature is the three-storey building's 72m wave-like roof
- Completed by only 14 workers in three short weeks
  - Conventional methods would have required 30 workers and up to three months to complete
- The mass engineered timber used: •
  - Was sourced from sustainable forests
  - Was treated for protection against termites and moisture
  - Has good fire resistance properties due to thick cross sections

#### JTC LAUNCHPAD

- Specially engineered timber and lightweight steel beams were used
- Construction time was reduced by a month
- Reduced the need for heavy equipment and no temporary structures such as scaffolds were needed
- Improved productivity, worksite safety and construction quality

#### Developed the Construction Productivity R&D Roadmap

For new technology to be implemented in actual construction projects, R&D capabilities in our construction firms must be built up by collaborating with universities and research institutes.

In 2016, BCA completed the Construction Productivity R&D Roadmap, which identified the seven clusters with 35 recommended technologies. They are:

- Design for Manufacturing and Assembly
- Automated equipment and robotics
- Info-communications Technology
- Building Information Modelling and Virtual **Design and Construction**
- 3D printing
- Advanced construction materials
- Civil engineering works

This Roadmap identified new knowledge, process and technology areas for development, adaptation and use in the built environment for long-term productivity improvements. More than 400 firms from the built environment, public agencies, Institutes of Higher Learning and research institutes were consulted in the Roadmap's development.

Specially engineered timber and lightweight steel beams were used for JTC Launchpad



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#### STRATEGIES AND POLICIES FOR CONSTRUCTION PRODUCTIVITY

#### **Early Contractor Involvement**

To reduce abortive work and drive productivity, BCA encourages the industry to use the Early Contractor Involvement (ECI), a procurement method where contractors are engaged early to provide input into the design of a project that will help save time and cost. So far, eight public sector agencies have adopted ECI under the Productivity Gateway Framework (PGF), a structured process to facilitate implementation of productive technologies and practices in public sector projects.

#### **Public Sector Construction Productivity Fund** (PSCPF)

BCA introduced a S\$154 million fund that further improves construction productivity in the public sector by encouraging the use of innovative and advanced technologies for public sector projects. This fund will help the public sector offset the costs of game-changing technologies.

#### **Productivity Gateway Framework (PGF)**

BCA introduced PGF for Government Procuring Entities (GPEs) to advance their construction productivity strategies and implementation.

No. of GPEs who have presented their Project Productivity Plans to the Productivity Gateway Advisory Panel (PGAP):



#### 2.1.2. DIGITALLY INTEGRATED PROCESSES ACROSS THE VALUE CHAIN

#### **Building Information Modelling (BIM)**

Building Information Modelling (BIM) is identified in the Construction Industry Transformation Map (ITM) as a technology that can improve levels of digitalisation and productivity for the built environment. To encourage its use by the industry, BCA introduced BIM e-submission in 2010 and made such submissions mandatory in phases since 2013.

In October 2016, BCA, with the support of the BIM Steering committee, launched the Codes of Practice (CoP) for BIM e-Submission to standardise the BIM modelling conventions and make the information to be provided in the BIM model clearer. The CoP will help regulatory agencies and the industry in preparing and processing plans, as well as make it easier for subsequent users to extract information. The CoP will be refined further as more members of the industry use BIM.

Building Information Modelling (BIM) e-Submission on CORENET



With effect from 19 October 2018 (br with/ledural plane) and 01 October 2017 (br C&&AREP Engineering plane), BCA ulit act--submissions in Native BM format. Such submissions should be prepared in accordance with the prevailing CP. Circular on "Changes to Building Information Modelling (SM) + Julia età fur Plan Satani at to DC.A. Codes of Practice for BMI + Submission (8 parts): thiscard Repairments vit & Spothed (CA1) Repairments scherical, Dictrical & Planting (M

- If you have any comments or headback on the Code of Practice for BM e-Submassivi, presse email to the respective off
- General & Architectural Requirements many \_ann\_samamapi@tica.ptx.ap G35 Requirements surving\_entation@trac.ptx.ap MEP Requirements Yu\_stimen@trica.ptx.ap

#### Successful Completion of Phase 1 of the Intelligent National Productivity and Quality **Specification (iNPQS)**

In January 2017, BCA successfully completed and tested Phase 1 of Intelligent National Productivity and Quality Specification (iNPQS), which is a software prototype linked to Building Information Modelling (BIM). iNPQS is aimed at improving productivity and quality in the design, tender, construction and maintenance for the built environment.

#### WHAT IS THE INTELLIGENT NATIONAL **PRODUCTIVITY AND QUALITY SPECIFICATION (iNPOS)?**

- A joint project by three industry associations, i.e. Singapore Institute of Architects (SIA), Institution of Engineers Singapore (IES) and Association of Consulting Engineers Singapore (ACES), with BCA's support
- Develops BIM-enabled common specifications for architectural and engineering works that can be used by all built environment professionals
- Integrated with BIM technology with links to the latest products, and local and international standards

Based on users' feedback, the productivity improvement is about 52% over existing conventional process.

#### 2.2. BUILDING STRONG AND CAPABLE FIRMS

#### 2.2.1. STRONG DOMESTIC CAPABILITY

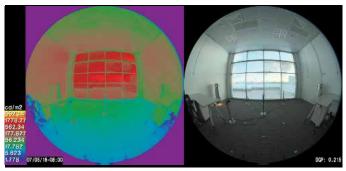
#### **Fostering Research and Innovation**

 Official Opening of the BCA SkyLab and Academic Tower

20 July 2016 marked a milestone at BCA Academy, as Prime Minister Lee Hsien Loong officially opened the BCA SkyLab and Academic Tower. Positioned as a world-class research and test-bedding platform for the research community and built environment sector, the BCA SkyLab will further catalyse technology innovation and breakthroughs in the energy efficiency of buildings – bringing us closer to our aspiration of "positive energy" low-rise, "zero energy" medium-rise, and "super low energy" high-rise buildings in the tropics.

Prime Minister Lee Hsien Loong officially opened the BCA SkyLab and Academic Tower located at the BCA Academy on 20 July 2016





Luminance and glare measurements carried out at the BCA SkyLab to test the energy performance of the integration of smart lighting and automated blinds technologies. The result showed that more than 70% lighting energy savings is possible, as compared to T5 Lightings used in many BCA Green Mark Platinum projects.

 Managed BCA's Research and Development (R&D) Programmes

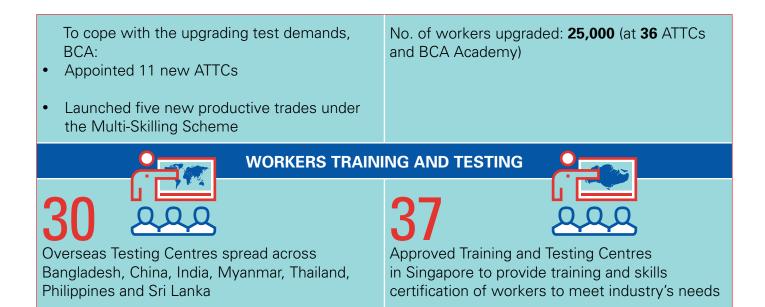
BCA's R&D projects cover a wide variety of topics, from green building technologies to construction materials and productivity solutions.

- 40% of the solutions and technologies from completed R&D projects are successfully used in our built environment
- ▶ In 2016:
  - » No. of completed research projects: 28
  - » 37 new projects received S\$14.1 million in funding support
  - » Another S\$18 million was set aside for future R&D projects
- As of May 2017:
  - No. of completed R&D projects: 76
     Total funding of S\$33 million
  - » No. of on-going R&D projects: over 60
    - Total committed funding: S\$34 million
- Completed BCA Corporate Research & Innovation (R&I) Roadmap
  - » Prioritises types of research projects to be conducted in the next five years
  - Ensures Singapore's built environment has the capability and technology to meet future challenges
  - » Focus of research includes:
    - green buildings
    - construction productivity and quality
    - smart info-communications technology (ICT)
    - > deep underground developments
    - coastal protection to mitigate sealevel rise

#### Enhancing the Quality of Our Construction Workforce

Strengthening Our Skills Certification Framework

To build up a high-quality workforce, it is important to review and enhance the Skills Certification Framework regularly. In 2016, BCA introduced the performance-based renewal criteria for the Overseas Testing Centres (OTCs) and local Approved Training and Testing Centres (ATTCs). The objective is to encourage the Centres to perform better and maintain the standards.



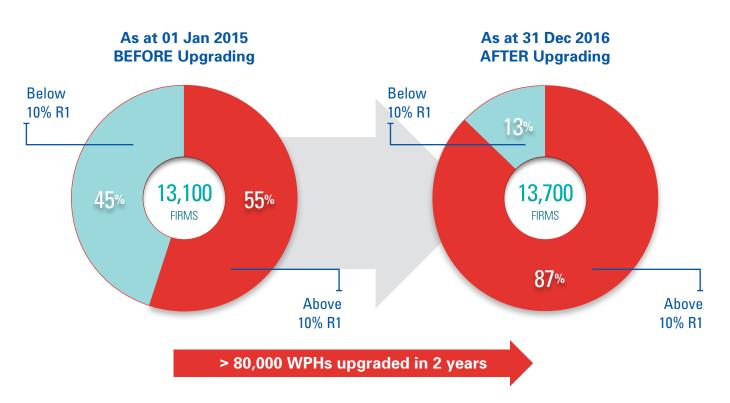
#### • Enhancing the Multi-Skilling Upgrading Scheme

In 2016, BCA worked with the Ministry of Manpower (MOM) and the Singapore Contractors Association Limited (SCAL) to introduce a new upgrading pathway under the Multi-Skilling Scheme. It recognises experienced construction personnel who are specialised in safety-related works as Higher Skilled (R1) workers. Higher Skilled (R1) workers can enjoy a longer allowable Period of Employment (POE) of up to 22 years and lower foreign worker levies.

<ul> <li>TO QUALIFY FOR THIS UPGRADING SCHEME,</li></ul>	<ul> <li>WHAT KIND OF BENEFITS CAN HIGHER</li></ul>	
WORKERS MUST: <li>Possess a SEC(K) certificate</li> <li>Have a minimum six years of local experience</li>	SKILLED (R1) WORKERS ENJOY? <li>Longer allowable Period of Employment (POE)</li>	
in the built environment sector <li>Attend the relevant safety courses</li>	of up to 22 years <li>Lower foreign worker levies</li>	
As of FY2016, about <b>1,200</b> workers are registered under the safety pathway.		

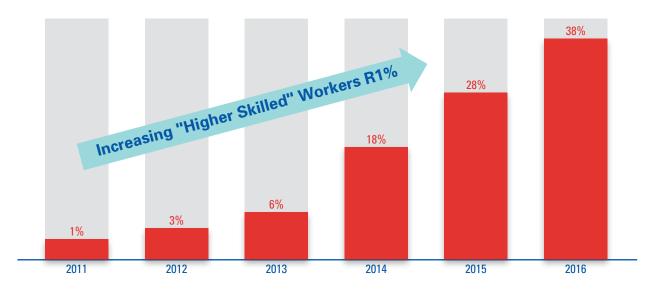
#### • Two-year Upgrading Phase for Construction Firms

Under our productivity drive, BCA has been encouraging firms to retain skilled and experienced workers through the upgrading or hiring of R1 workers. To create a pool of higher-skilled foreign workers, BCA has implemented a phased upgrading requirements over two years, which requires firms to upgrade 5% of their workforce every year.



As of January 2017, the new requirements administered by the Ministry of Manpower has commenced in which firms must maintain 10% of their workforce at the R1 level.

#### Upgrading Our Industry Workforce 2011 – 2016



#### Industry Level

#### **Cultivating a Sustainable Built Environment**

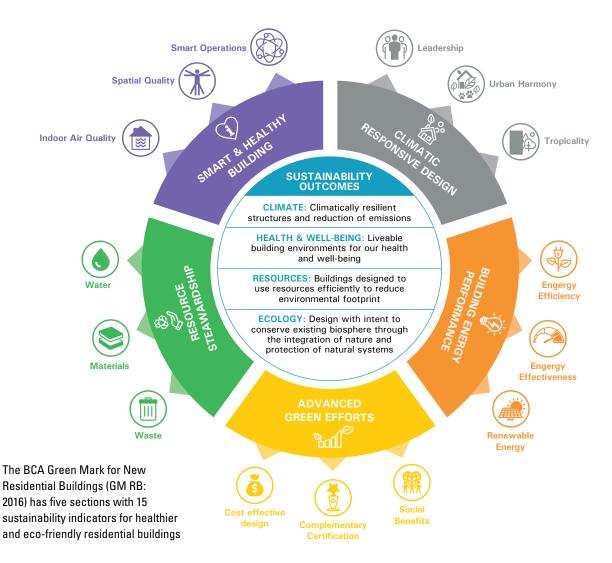
• Our Green Building Journey

As the champion of Singapore's built environment, BCA plays a significant role in shaping the built environment for a greener future. BCA has achieved significant progress over the past years in greening Singapore's built environment. In 2016, BCA has intensified its push for green buildings.

- By 2030, BCA targets to green 80% of buildings (in terms of gross floor area) in Singapore.
- Since 2005, **33%** of our total gross floor area has been greened.
- No. of green building professionals trained by BCA Academy and the Institutes of Higher Learning since 2005: **15,000**
- By 2020, our target is to have **20,000** green building professionals trained.

#### • Raised Standards for New Buildings

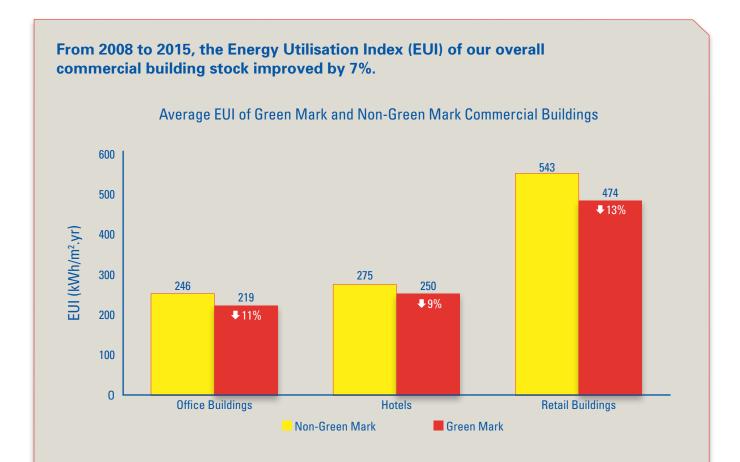
To further improve the energy efficiency of buildings, BCA introduced the BCA Green Mark for New Residential Buildings 2016, which guides building owners to take practical measures in achieving their buildings' energy performance.



#### Improved Energy Performance of Existing Buildings

In 2016, BCA extended the Building Control (Environmental Sustainability Measures for Existing Building) Regulations to cover more building types and sizes bringing in more buildings into Singapore's green journey.

In 2016, BCA published the annual Building Energy Benchmarking Report (BEBR), which revealed that the building stock has become more energy-efficient and BCA Green Mark certified commercial buildings performed better than non-certified buildings. BCA also released the anonymised energy data of about 1,000 commercial buildings, allowing building owners to benchmark their energy usage. The Building Control (Environmental Sustainability Measures for Existing Building) Regulations presently covers **all** buildings, excluding industrial, residential (excluding serviced apartments), railway, port, airport services and facilities, religious, data centres and utility buildings with central cooling systems and gross floor area of more than 5,000 square metres.





• Smart Technology for Next-Generation BCA Green Mark Buildings



Chiller plants take up to half of a building's total energy consumption, so it is crucial to optimise their efficiency to reduce the environmental impact of buildings.

- BCA, together with Microsoft, launched the **Chiller Efficiency Smart Portal.**
- With the portal, building owners can:
  - Analyse chiller plant performance data such as power, water flow rate and temperature to detect deviations that may result in energy wastages
  - Receive alerts and information of irregularities, and therefore take proactive and pre-emptive actions to save energy
  - Enjoy cost savings as they improve energy efficiency
- The Chiller Efficiency Smart Portal is a two-year pilot project, and BCA is the first government agency in Singapore to implement an Internet of Things (IoT) solution for chiller plant efficiency.

No. of commercial and institutional buildings participating: 20

#### • Strengthened Support for Greening Buildings

To support the private sector's efforts in green buildings, BCA's Green Mark incentive schemes continue to help developers defray the cost of greening their buildings.

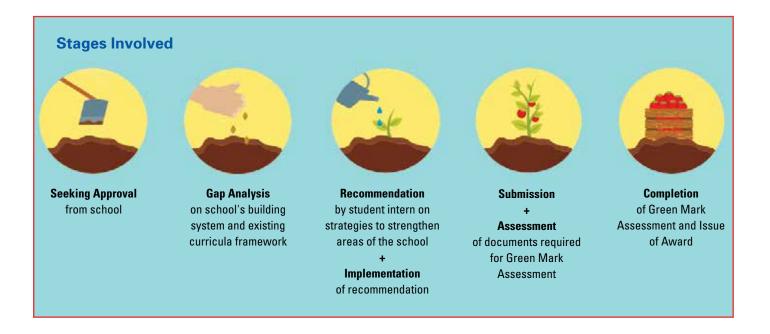
#### GREEN MARK INCENTIVES FOR EXISTING BUILDINGS AND PREMISES (GMIS-EBP)

- S\$50-million incentive scheme
- Encourages building owners, tenants who are small- and medium-size enterprises (SMEs) or building owners with at least 30% of its tenants who are SMEs to carry out energy efficiency retrofits
- · Covers hotels, offices and retail buildings and tenanted spaces
- In 2016:
  - SME tenancy percentage requirement was lowered to 10%
  - Eligibility was expanded to include more building types, to allow more buildings to be more energy efficient

 Engaged Budding Green Building Champions Under BCA's pilot structured internship programme, the Back to School (B2S) programme, students were involved in the BCA Green Mark certification process of their alma maters. The programme grooms the next generation of the "green-collar" workforce through student engagement and education in environmental sustainability.

A SNAPSHOT OF THE B2S PROGRAMME IN 2016:

- No. of students who participated: **12**
- No. of schools that have been greened: 10
   3 achieved higher BCA Green Mark certification



#### A Friendly Built Environment for All

• The Universal Design Guide for Public Places 2016

BCA developed the new Universal Design Guide for Public Places which is one of the initiatives under the "Action Plan for Successful Ageing" by the Ministerial Committee on Ageing. This Guide is based on a journey that someone would typically take from home to public places. It provides meaningful design recommendations and tips for designers to apply to their projects, covering aspects such as accessible routes to the facilities, circulation, signage and sanitary provisions.

It can be downloaded at our friendly buildings portal at <u>www.bca.gov.sg/friendlybuilding.</u>

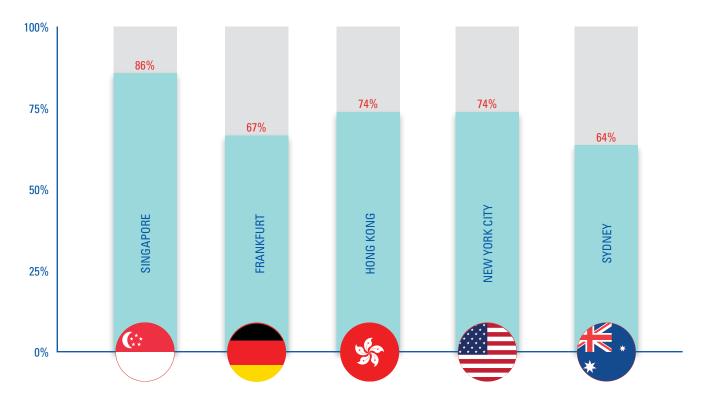
- Expanded the BCA Accessibility Fund
  - A S\$40-million grant
  - Available until 2021
  - Helps owners of pre-1990 private buildings to:
    - » improve their accessibility
    - » provide a friendly built environment for people of all ages and abilities

In 2016, the Fund was expanded to allow up to two applications per building and has benefited 137 building owners.

#### 2.2.2. INTERNATIONAL COMPETITIVENESS & OUTREACH

#### Singapore's Building Control Processes and Framework Ranked Highest

Singapore's building control framework was the highest in being progressive and encouraging innovation in a detailed study that was completed in 2016. BCA commissioned an independent consultant, Arup Singapore Pte Ltd, to assess Singapore's building control processes and framework against other advanced cities such as Frankfurt, Hong Kong, New York and Sydney. The consultants found Singapore's building control framework to be effective in ensuring safety while being innovative and pro-enterprise with performance-based provisions.



#### **Progressiveness and Innovation**

Scores from the study conducted by Arup Singapore which ranked Singapore's building control processes and framework the highest among other advanced cities

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# Helping Singapore Built Environment Firms Make Their Mark in the World

BCA helps Singaporean built environment firms to seek opportunities overseas through seminars and linking them up with their overseas contacts. To encourage them to look beyond Singapore, BCA held three seminars covering business opportunities in India, Myanmar and overseas project financing. Professionals representing 265 companies – including master planners, architects, consultants, contractors and subcontractors – attended these seminars.

In 2016, Singaporean built environment consultancy firms continued to thrive in China, India, Cambodia, Indonesia, Malaysia, Myanmar, and Vietnam.

# In 2016:

- No. of BCA-led mission trips to countries such as China, India, Myanmar and Cambodia:
- 15 mission trips with 59 companies
- No. of overseas projects BCA assisted in clinching: 16 projects worth S\$20 million

Based on BCA's Construction Export Survey in 2016:

- **38** contractors and **62** consultancy firms secured projects overseas in 2015
- Compared to **22** contractors and **26** consultancy firms in 2014
- In 2015, S\$1.74 billion worth of contract value was secured in overseas markets which included Myanmar, India, Malaysia, Thailand, Indonesia and the United Arab Emirates.



Municipalika Smart and Sustainable Cities 2017 (Mumbai, India): Singapore Pavilion at Municipalika 2017 together with Singaporean delegates to explore overseas business opportunities and showcase Singapore's capabilities in smart technologies, green building and precast technologies

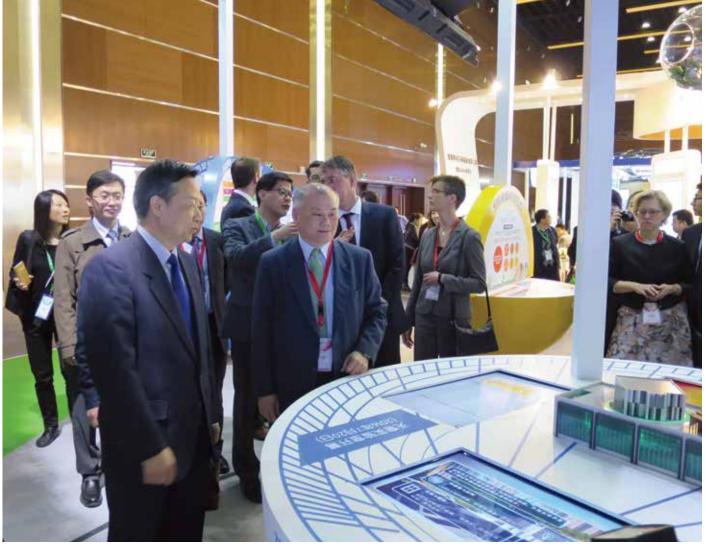
# Demonstrating Singapore's Leadership in Built Environment Expertise Overseas

Together with our industry partners, BCA set up six exhibition pavilions locally and overseas to feature Singapore's leadership, integrated capabilities, and innovative solutions in green building and productive construction technologies. BCA shared Singapore's expertise in sustainable building and productive construction at industry conferences across eight cities in China and India, and hosted 230 overseas visitors.

# Working with our partners in China and India

Having implemented a hybrid of BCA's Green Mark and China's 3-Star green building evaluation standards, the Sino-Singapore Tianjin Eco-City (SSTEC) was designated as a green building development model for other cities in northern China. BCA is also working with other public agencies to contribute to the development of Amaravati, the new capital city of Andhra Pradesh, India.

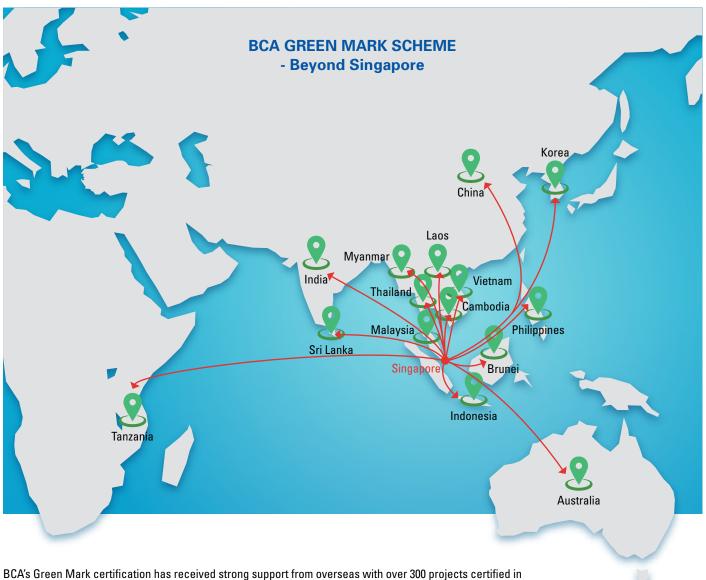
Beijing 13<sup>th</sup> International Conference on Green and Energy-Efficient Building & New Technologies and Product (IGEBC) Expo March 2017: BCA Group Director for International Development Mr Koh Lin Ji shared BCA's SkyLab model and major achievements in 2016 with Dr Qiu Baoxing, former Vice Minister of Housing and Urban-Rural Development



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### A Global Leader in Green Buildings

Under BCA's 3<sup>rd</sup> Green Building Masterplan, we aspire for Singapore to be a global leader in green buildings. To strengthen Singapore's leadership in sustainable construction, BCA continued to raise awareness through conferences, sharing sessions and collaboration with the international community to support the wider adoption of sustainable building policies.



80 cities and 14 countries

# 2.3.1. HIGHLY SKILLED AND STRONG SINGAPOREAN CORE

# BCA Academy: The Leader in Built Education and Research

BCA Academy, the education and research arm of BCA, supports BCA's drive to build up strong industry capability for the built environment sector. It offers continuing professional development courses for professionals, upgrading courses for supervisors and workers, and practice-oriented and industry-focused academic programmes for school leavers.

2016 saw an increase in the number of graduates as well as an increase in those who gained employment within six months of graduation, which are strong indicators of the industry's demands for marketable skills and the Academy's relevance in providing these skill sets.

In 2016, BCA Academy produced its first batch of graduates in the industry-specific Specialist Diploma in Design for Manufacturing and Assembly (DfMA) and Specialist Diploma in Lean Construction. Together with its Specialist Diploma in Virtual Design and Construction (VDC), these programmes will help industry practitioners gain deeper knowledge in productive technology and work processes for improved productivity. Participants also concurred that the course provided insights into areas of improvement in their companies.

Mr. Ooi Jingkai, the Valedictorian of the 2016 Full-time Diploma graduating cohort, delivering his valedictory speech

# In 2016,

- Number of programmes: 240
- Total enrolment: 29,000
- Total enrolment for Specialist Diploma in Design for Manufacturing and Assembly (DfMA), Lean Construction & Virtual Design and Construction (VDC): 120
- Total enrolment for degree and diploma programmes: **3,500**
- Number of Graduates: 400 Diploma + 1,000 Specialist Diploma
  - 84% Diploma graduates gained employment within six months of graduation
  - 40% increase in Specialist Diploma graduates from last year
- Plant operating training programmes: 15
- Number of professionals trained in construction skills, plant operations and WSH: 9,300



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# WORKSHOPS

With the drive towards productivity, BCA Academy organised a number of game-changing technology workshops and seminars in 2016:

# "Prefabricating The Future" series

- Cross Laminated Timber (CLT)
- Glued Laminated Timber (Glulam)
- Prefabricated Pre-Finished Volumetric Construction (PPVC)
  - » These workshops included site visits to projects at NTU Sports Hall, Nanyang Crescent Hostel @ NTU, and Crowne Plaza @ Changi Airport, illustrating the benefits of such innovative solutions for higher productivity.

# Safety-related workshops

- Crane safety
  - Workplace safety and health (WSH) legislations
    - » These workshops were aimed at improving construction safety at sites.
    - » BCA also jointly organised the WSH Conference 2016 with the Institution of Occupational Safety and Health Singapore.

# VIRTUAL DESIGN AND CONSTRUCTION LEADERSHIP AND ADVANCED MANAGEMENT

- Partnership with Stanford University's Center for Integrated Facility Engineering (CIFE) on two Virtual Design and Construction (VDC) programmes
- No. of C-Suite and middle management executives who have attended the Leadership and Advanced Management programmes: more than **100**

# **NEW COLLABORATION**

- Further strengthened our partnership with
   The University of Newcastle, Australia
  - Launched new Bachelor of Engineering (Civil) degree, based on industry's feedback on the shortage of civil engineers available
  - Has a strong focus on the current and future needs of the built environment sector to build up a pool of civil engineers with dual competency in civil engineering discipline and productivity for the industry



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BUILDING AND TRANSFORMING CONSTRUCTION THE AUTHORITY INDUSTRY

## Attracting and Retaining Talents for the Built Environment Sector

Since the launch of the five-year Built Environment (BE) Rebranding Roadmap in 2014, BCA has been implementing various initiatives to attract and retain more Singaporean talent in the built environment:

Rebranding Campaign

A sustained rebranding campaign was launched in 2015 to raise awareness on the built environment sector and careers. In 2016, the campaign used radio, cinema, and MRT station platform stickers for the first time, while continuing with traditional media advertisements. Online platforms also continued to feature prominently, garnering over three million engagements.

Advertisement on Facebook to promote the BE Education and Career Fair 2017



Implementing Strategic HR initiatives
 To improve the work environment and retain

talents in the built environment sector, the Construction Industry Joint Committee and BCA joined hands to encourage built environment firms to implement good Human Resource (HR) practices through a voluntary pledge signing "Pledge for a Better BE Workplace". To date, more than 300 built environment firms have signed the Pledge to show their commitment.

BCA also commissioned an inaugural study of the HR maturity of Singapore's built environment, which comprised online surveys and face-to-face interviews with over 200 firms. From the study, a HR guidebook was developed as a resource guide to help built environment firms improve their HR practices.

• Enhanced Young Leaders Programme Started in 2009, the Built Environment Young Leaders Programme (YLP) engages and retains young professionals to lead the future growth of the built environment.

In 2016, the YLP was enhanced to be more structured to foster greater engagement and exchange of ideas among the industry and public sector members and stakeholders. Site visits and sharing sessions were regularly arranged to raise awareness of sustainable developments and productive construction technologies. About 100 young leaders are participating in the programme. BCA-Industry Built Environment Scholarships
 and Sponsorships

To help the built environment develop a strong core of Singaporean professionals and meet the manpower demand of the sector, BCA introduced a suite of BCA-Industry Built Environment Scholarship and Sponsorship programmes under the Construction Productivity Roadmaps. These programmes attract and retain young talents and in-service personnel to take up related courses at all levels and related engineering careers. In 2016, BCA and the industry firms awarded about 500 scholarships and sponsorships.

# BCA-INDUSTRY BUILT ENVIRONMENT POSTGRADUATE SPONSORSHIP (PART-TIME)



- Introduced in 2016
- No. of awarded recipients in the pioneer batch:



Minister for Social and Family Development and Second Minister for National Development Mr Desmond Lee giving the opening speech at the BCA-Industry Built Environment Scholarship Award Ceremony 2016

Equipping Our Talents with Future Skills
 To encourage continuous education and
 training and equip in-service personnel with
 future skills, BCA launched the SkillsFuture
 Study Awards for the Built Environment
 sector in October 2015. The Study Awards
 are aimed at helping eligible early to mid career Singaporean built environment
 professionals defray their training costs.

# In 2016:

- An online marketing campaign was launched on Facebook and Google, which has attracted more than 8,000 hits to the SkillsFuture Study Awards website
- A marketing video was also developed and released on BCA and SkillsFuture Singapore (SSG) YouTube channels

#### To date:

- More than 130 SkillsFuture Study Awards have been given out to built environment professional from various disciplines
- Enables them to upgrade their knowledge and skills in BIM, construction productivity, green building technologies

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**Section 3** 

# EXCELLING AS AN ORGANISATION

# **3.1. REACHING OUT AND STRENGTHENING WITHIN**

# Improving the Efficiency of Our Processes

At BCA, we are continuously fine-tuning our processes to ensure greater productivity for all. In June 2016, an online payment system was made available on BCA's Advertisement Licensing System (ALS) for the convenience of businesses, as findings indicate that 75% of the visits at the Advertisement Licensing counter were for payment of the licence fee.

# Improving BCA Productivity through a Common Platform

BCA has developed a common mobile site inspection platform for our officers across all Groups who are involved in site inspections and other field work. By using the power of IT, we consolidated our existing inspection forms on one platform, by developing a single system to meet our needs.

These forms are available on the Platform:

- BCA Green Mark assessment for existing buildings
- Periodic structural inspection
- Buildability Score inspection
- TOP (Temporary Occupation Permit) inspection
- Lifts inspection
- Amusement ride inspection
- CONQUAS<sup>™</sup> Site assessment

# BCA-Keppel Land Partnership (GreenSeeds Fund)

The Fund is a joint initiative by BCA and Keppel Land Limited (KLL). It encourages strategic partnerships among schools and corporate organisations to work together on projects in championing the green building movement. Projects submitted involved the innovative use of clean energy, efficient water-sprinkling systems and a branding campaign encouraging building owners to make the switch to solar panels and salt-water as energy sources.

## **Greenovate Programme**

BCA's Greenovate programme engages secondary schools on going green. Participating schools undergo an energy audit conducted by tertiary students from Republic Polytechnic (RP), who are mentored by an industry firm, Johnson Controls (S) Pte Ltd. The report is shared with the schools for them to identify and address their gaps based on the BCA Green Mark scheme.

Through Greenovate, 90 secondary school students from nine participating schools had the opportunity to interact with 50 RP students. They learnt about green building features, how the various aspects of a green building are measured and quantified as well as how they can do their part in greening their schools. Due to its successful run in 2016, BCA, Johnson Controls (S) Pte Ltd and RP are continuing the partnership for another year.

**BUILDING AND** 

CONSTRUCTION AUTHORITY

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#### Greater convenience to our customers

In June 2016, BCA, through our Customer Service Department, unveiled a new online service to allow customers to purchase building plans for their properties. This has provided greater convenience to customers, reducing the need to visit our service centre.

#### Strengthening our engineering professionals' capabilities

As part of our efforts to rebuild engineering capabilities in the public service, BCA introduced various initiatives in FY16.

#### • Developing a specialist track

To support the career aspirations of our officers and recognise those with an inclination towards in-depth specialist work, BCA developed a specialist track that provides career development for specialisations for our officers, grooming them for technical leadership positions. The specialist track covers all key technical areas of BCA's engineering work and our officers under this track can continue to strengthen their technical competency.  Improving the public perception of the engineering profession in the public service BCA worked with the Public Service Division to feature some of our promising engineers in the media as part of PSD's engineering branding campaign for the public sector. BCA also featured two of our engineers (Nur Shuhadah Binte Mohamed Abdul Gaffoor and Han Wann Kuang) in a video shown at the National Engineers Day exhibition and on YouTube.



# **3.2. CORPORATE SOCIAL RESPONSIBILITY**

BCA contributes to the well-being of the community and the environment through our efforts in shaping a sustainable and friendly built environment.

# BCA CORPORATE SOCIAL RESPONSIBILITY (CSR) DAY AT AWWA

On 11 September 2017, BCA held our sixth CSR Day at the AWWA Dementia Day Care Centre at Ang Mo Kio Ave 6. Led by CEO Mr Hugh Lim, BCA's volunteers painted murals on the internal walls of the Day Care Centre to brighten up the premises, and organised an outing for residents of the Day Care Centre to River Safari. This was followed by a workshop to teach residents how to make beads bracelets and mooncake.



BCA's 75 staff members including BCA's senior management, staff members and their family visited the elderly residents at the AWWA Centre.

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Built Environment Research and Innovation Institute Managing Director Er. Lam Siew Wah received the IES Top 50 Engineering Feat Award from the guest-of-honour Prime Minister Lee Hsien Loong for BCA's Zero Energy Building

# 3.3. BCA AWARDS AND CORPORATE ACHIEVEMENTS FY16/17

## The Institution of Engineers, Singapore (IES)'s Top 50 Engineering Feats winner

The Zero Energy Building @ BCA Academy was named as one of the Top 50 Engineering Feats at the Institution of Engineers, Singapore (IES) Engineering Feats Awards on 1 July 2016. It is Southeast Asia's first retrofitted Zero Energy Building.

# Best Training, Learning and Development Award

In recognition of BCA's best human resource practices among the private and public sector agencies, BCA won the Best Training, Learning and Development Award at the 14th HRM Awards. This award reaffirms BCA's commitment and support in developing our officers at all levels to their fullest potential.

# The Institution of Engineers, Singapore (IES)'s Top 50 Engineering Feats winner

BCA won five Public Sector Pro-Enterprise Initiative Awards in 2016, including an Annual Silver Award for the Automatic Identification System (AIS), which verifies the origin of the imported construction materials such as granite and sand on the vessel, and an Annual Bronze Award for the Incident Mobile App, which improves the incident reporting workflow and management system. EXCELLING AS AN ORGANISATION

# 3.4. BCA EVENTS FY16/17



# 29 MARCH

29 APRIL

APRIL



# 23 MAY

Network for

BCA-REDAS Quality and Productivity Seminar 2016 (230 participants) raised awareness of construction quality and productivity among developers, builders and construction professionals.

Smart Builders Leadership Series (SBLS) – Session 1

- A platform where the latest productive technologies are shared
- Features an exhibition where participants could present, demonstrate and gain hands-on experience on the technologies

Productivity Leadership (55 participants) is a highlevel discussion where the latest productive technologies are shared among built environment professionals and productivity leaders from the industry.

Singapore Universal Design Week 2016 was themed "Universal Design in Public Places" with Minister of National Development and Second Minister for Finance Mr Lawrence Wong officiating the opening ceremony as the guest-ofhonour. The Week's main event was the Universal Design Conference, with 300 industry participants. Held during the Week was the UD Explorers on Wheels Academy: A vehicle specially retrofitted with UD features travelled to different primary schools, enabling students to learn and experience UD. It has reached out to more than 15,000 students.

JULY

23 MAY

The official opening ceremony of the Singapore Universal Design Week 2016: (from left to right) BCA Chairman Mr Lee Fook Sun; Minister of National Development and Second Minister for Finance Mr Lawrence Wong (guest-ofhonour); and BCA Academy Dean Dr John Keung

# Both sessions attended by more than 400 participants comprising equipment suppliers and builders



# SEPTEMBER

# SEPTEMBER

# **5 SEPTEMBER**

# 5 - 11 SEPTEMBER

The Inaugural Dialogue Session with the Commissioner of Buildings allows 30 senior management of managing agent firms of strata-titled properties to better understand the BMSMA (Building Maintenance and Strata Management Act) so that they can better govern and manage their estates. At the *Inaugural* Design for Maintainability Seminar *2016,* eminent speakers spoke about the importance of integrating maintainability concepts at the design stage to promote sustainability, safety, and productivity at maintenance stage. At the Seminar, which more than 200 participants attended, a Design for Maintainability Checklist was introduced. It provides a set of design recommendations and best practices to guide industry professionals on good planning and design details, as well as the use of appropriate materials and technology to facilitate productive maintenance activities.

The Singapore Green Building Week / International Green Building Conference 2016 gathers ideas, promotes collaboration and creates opportunities for the sustainability of the built environment. It attracted over 26,000 green building industry practitioners and participants from over 50 countries. Attended by 160, a Student's Workshop enhanced secondary school and IHL students' knowledge on sustainability and careers in Singapore's built environment through an experiential learning journey on environmental sustainability.

The official opening ceremony of Singapore Green Building Week 2016: (from left to right) BCA Academy Dean Dr John Keung; BCA Chairman Mr Lee Fook Sun; Minister of National Development and Second Minister for Finance Mr Lawrence Wong (guest-of-honour); Ms Debbie Evans, President of Reed Exhibitions Southeast Asia and Australia; and Mr Chia Ngiang Hong, CDL Group General Manager and Singapore Green Building Council Immediate Past President





18 - 21 OCTOBER

More than 8,200 visitors attended the *Singapore Construction Productivity Week 2016* with the theme of "Transforming the Way we Build through Innovation". The Week comprised 10 industry events and six student events such as *Productivity Race, IHL Guided Tour, IHL Workshop* to promote better awareness and understanding of productive construction technologies and built environment careers among the 480 students and educators from Institutes of Higher Learning (IHL) who participated. NOVEMBER

28 NOVEMBER

The Productivity Leadership Summit's theme was 'Integration of Design for Manufacturing & Assembly (DfMA) with Building Information Modelling (BIM) and Virtual Design & Construction (VDC)'. At the Summit, more than 150 industry leaders participated and reaffirmed the Government's commitment and push for productivity improvements for the built environment.

Students participants of the Productivity Workshop 2016 visited the BCA booth at the BuildTech Asia exhibition





Public Sector Productivity Leadership series is organised by BCA and JTC. It is a platform for public agencies and their project partners to share their experience and best practices in DfMA (Design for Manufacturing & Assembly). It was attended by more than 300 participants from over 25 ministries, agencies and institutes as well as 35 private sector firms. *BCA Gallery & Sensory Garden* was officially opened by Minister for National Development and Second Minister for Finance Mr Lawrence Wong. Expanding from a one-storey showcase to a two-storey experiential journey, the Gallery now has various interactive and multimedia features, with content more relevant to students, who formed more than half of the visitors to the previous Gallery. The Sensory Garden, an extension of the BCA Gallery, was also refurbished.

APRIL

**13 APRIL** 

Woodgrove Secondary School students, who are members of Build it Green (BiG) Club Junior, sharing information on an interactive multimedia display with Minister Wong.



# FINANCIAL HIGHLIGHTS

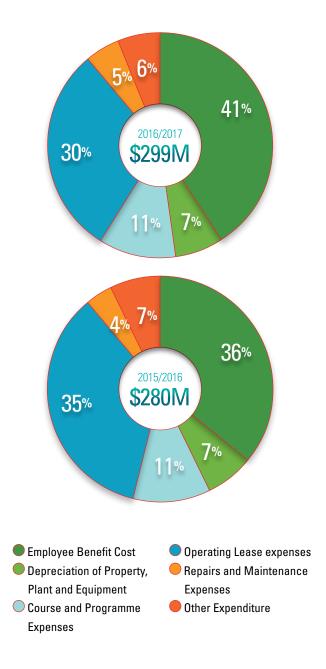
# OPERATING INCOME FOR 2015/2016 & 2016/2017

Operating income comprised mainly plan fees, course fees, quality assessment and certification fees, trade test fees, operating lease income and management fees. Operating income decreased by \$17M from 2015/2016 to 2016/2017 mainly due to a decrease in plan fees, trade test fees and operating lease income.

# 8% 8% 35% 2016/2017 15% \$231M 3% 8% 15% 6% 2% <u>9</u>% 7% 36% 2015/2016 13% \$248M 3% 8% 16% 6% Operating Lease Income Course Fees Management Fees Ouality Assessment and Other Income **Certification Fees** Plan Fees Trade Test Fees Advertisement Licence Fees Contractors Registration Fees

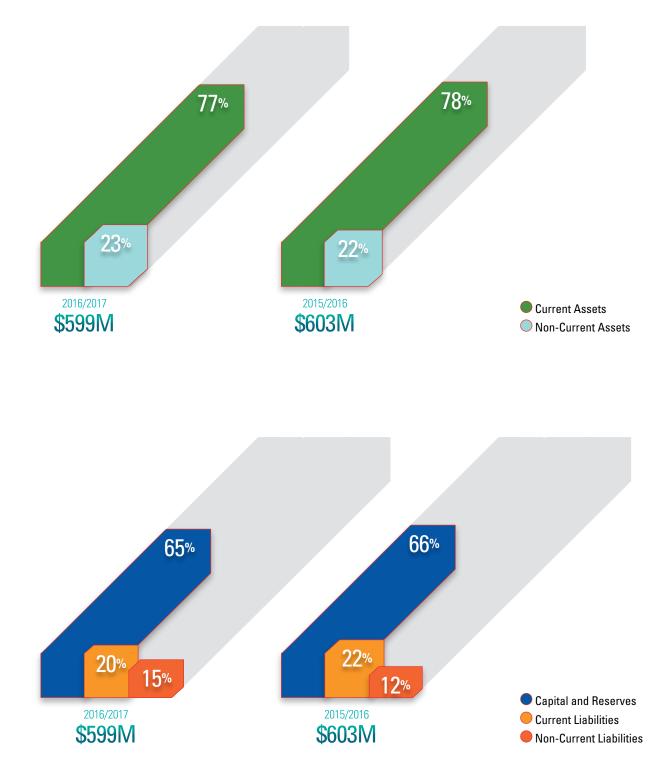
# OPERATING EXPENDITURE FOR 2015/2016 & 2016/2017

Operating expenditure, which comprised mainly employee benefit costs, operating lease expenses and course and programme expenses, had increased by \$19M from 2015/2016 to 2016/2017. The increase was due to higher employee benefit costs and course and programme expenses.



ANNUAL REPORT 2016/17

# FINANCIAL POSITION FOR 2015/2016 & 2016/2017



BUILDING AND CONSTRUCTION AUTHORITY AND ITS SUBSIDIARIES

# ANNUAL FINANCIAL STATEMENTS

FOR THE FINANCIAL YEAR ENDED 31 MARCH 2017

### **General Information**

#### ADDRESS

52 Jurong Gateway Road, #11-01, Singapore 608550

#### AUDITOR

Ernst & Young LLP

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Balance Sheets	08
Statements of Changes in Reserves	10
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Notes to the Financial Statements	13



#### Statement by the Board

In our opinion:

- (a) the accompanying Statements of Comprehensive Income, Balance Sheets, Statements of Changes in Reserves and the Consolidated Cash Flow Statement of the Building and Construction Authority (the "Authority") and its subsidiaries (collectively, the "Group"), together with the notes thereon, are drawn up so as to present fairly, in all material respects, the financial position of the Authority and of the Group as at 31 March 2017 and the financial performance and changes in reserves of the Authority and the Group and cash flows of the Group for the financial year then ended, in accordance with the provisions of the Building and Construction Authority Act, Chapter 30A (the "Act") and Singapore Statutory Board Financial Reporting Standards;
- (b) at the date of this statement, there are reasonable grounds to believe that the Authority will be able to pay its debts as and when they fall due;
- (c) the accounting and other records required by the Act to be kept by the Group have been properly kept in accordance with the provisions of the Act; and
- (d) the receipt, expenditure, investment of moneys and the acquisition and disposal of assets by the Authority during the financial year have been in accordance with the provisions of the Act.

The Board of the Building and Construction Authority has, on the date of this statement, authorised these financial statements for issue.

On behalf of the Board of Building and Construction Authority:

Lee Fook Sun Chairman

Hugh Lim Chief Executive Officer

14 July 2017

ANNUAL REPORT 2016/17

#### Building and Construction Authority and its subsidiaries

#### Independent Auditor's Report For the financial year ended 31 March 2017

#### Independent Auditor's Report to the Board of Building and Construction Authority

#### Report on the audit of the financial statements

#### Opinion

We have audited the financial statements of the Building and Construction Authority (the "Authority") and its subsidiaries (collectively, the "Group"), which comprise the balance sheets of the Group and Authority as at 31 March 2017, statements of comprehensive income and statements of changes in reserves of the Group and Authority, and consolidated cash flow statement of the Group for the year then ended, and notes to the financial statements, including a summary of significant accounting policies.

In our opinion, the accompanying consolidated financial statements of the Group, the balance sheet, statement of comprehensive income, the statement of changes in reserves of the Authority are properly drawn up in accordance with the provisions of the Building and Construction Authority Act, Chapter 30A (the "Act') and Statutory Board Financial Reporting Standards ("SB-FRS") so as to present fairly, in all material aspects, the statement of affairs of the Group and the Authority as at 31 March 2017 and of the financial performance and changes in reserves, of the Group and Authority and consolidated cash flows of the Group and changes in equity of the Authority for the year ended on that date.

#### **Basis for opinion**

We conducted our audit in accordance with Singapore Standards on Auditing (SSAs). Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are independent of the Group in accordance with the Accounting and Corporate Regulatory Authority (ACRA) Code of Professional Conduct and Ethics for Public Accountants and Accounting Entities (ACRA Code) together with the ethical requirements that are relevant to our audit of the financial statements in Singapore, and we have fulfilled our other ethical responsibilities in accordance with these requirements and the ACRA Code. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

#### Other information

Management is responsible for other information. The other information comprises the Annual Report and Statement by the Board, but does not include the financial statements and our auditor's report thereon. The other information obtained at the date of this auditor's report is the Statement by the Board.

Our opinion on the financial statements does not cover the other information and we do not express any form of assurance conclusion thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

BUILDING AND CONSTRUCTION AUTHORITY

#### Building and Construction Authority and its subsidiaries

Independent Auditor's Report For the financial year ended 31 March 2017

#### Independent Auditor's Report to the Board of Building and Construction Authority

# Responsibilities of management and those charged with governance for the financial statements

Management is responsible for the preparation of financial statements that give a true and fair view in accordance with the provisions of the Act and SB-FRSs, and for devising and maintaining a system of internal accounting controls sufficient to provide a reasonable assurance that assets are safeguarded against loss from unauthorised use or disposition; and transactions are properly authorised and that they are recorded as necessary to permit the preparation of true and fair financial statements and to maintain accountability of assets.

A statutory board is constituted based on its Act and its dissolution requires Parliament's approval. In preparing the financial statements, management is responsible for assessing the Group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless there is intention to wind up the Group or for the Group to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Group's financial reporting process.

#### Auditor's responsibilities for the audit of the financial statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with SSAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with SSAs, we exercise professional judgement and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report.

#### Independent Auditor's Report For the financial year ended 31 March 2017

#### Independent Auditor's Report to the Board of Building and Construction Authority

#### Auditor's responsibilities for the audit of the financial statements (cont'd)

- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

#### Report on other legal and regulatory requirements

#### Opinion

In our opinion:

- (a) the receipts, expenditure, investment of moneys and the acquisition and disposal of assets by the Authority during the financial year are, in all material respects, in accordance with the provisions of the Act; and
- (b) proper accounting and other records have been kept, including records of all assets of the Authority whether purchased, donated or otherwise.

#### Basis for opinion

We conducted our audit in accordance with SSAs. Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Compliance Audit section of our report. We are independent of the Group in accordance with the ACRA Code together with the ethical requirements that are relevant to our audit of the financial statements in Singapore, and we have fulfilled our other ethical responsibilities in accordance with these requirements and the ACRA Code. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion on management's compliance.

#### Responsibilities of management compliance with legal and regulatory requirements

Management is responsible for ensuring that the receipts, expenditure, investment of moneys and the acquisition and disposal of assets, are in accordance with the provisions of the Act. This responsibility includes implementing accounting and internal controls as management determines are necessary to enable compliance with the provisions of the Act.

#### Auditor's responsibilities for the compliance audit

Our responsibility is to express an opinion on management's compliance based on our audit of the financial statements. We planned and performed the compliance audit to obtain reasonable assurance about whether the receipts, expenditure, investment of moneys and the acquisition and disposal of assets, are in accordance with the provisions of the Act.

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#### Independent Auditor's Report For the financial year ended 31 March 2017

#### Independent Auditor's Report to the Board of Building and Construction Authority

#### Auditor's responsibilities for the compliance audit (cont'd)

Our compliance audit includes obtaining an understanding of the internal control relevant to the receipts, expenditure, investment of moneys and the acquisition and disposal of assets; and assessing the risks of material misstatement of the financial statements from non-compliance, if any, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Because of the inherent limitations in any accounting and internal control system, non-compliances may nevertheless occur and not be detected.

Sinst & Young IV

Ernst & Young LLP Public Accountants and Chartered Accountants Singapore

14 July 2017

#### REPORT 2016/17

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#### Building and Construction Authority and its subsidiaries

# Statements of Comprehensive Income For the financial year ended 31 March 2017

	Note	Group 2016/2017 2015/2016		Authority 2016/2017 2015/2016	
		S\$	S\$	S\$	S\$
Operating income					
Plan fees Advertisement licence fees Course fees Quality assessment and		34,971,330 6,174,010 33,974,791	40,701,800 6,816,033 33,059,858	34,971,330 6,174,010 33,886,269	40,701,800 6,816,033 32,950,911
certification fees Trade test fees Contractors registration fees Operating lease income	22(b)	18,586,204 17,599,953 4,386,539 82,044,545	18,539,744 21,981,100 4,212,813 88,741,758	16,770,804 17,599,953 4,386,539 82,044,545	16,478,844 21,981,100 4,212,813 88,741,758
Management fees Other income		19,530,384 13,612,633	19,148,200 15,160,981	19,530,384 13,363,068	19,148,200 14,946,565
Total operating income		230,880,389	248,362,287	228,726,902	245,978,024
Less: Operating expenditure					
Employee benefit costs Depreciation of property, plant	6	123,707,360	101,740,982	122,609,591	100,664,624
and equipment Course and programme	7	20,312,392	18,991,067	20,312,392	18,991,067
expenses		33,598,058	30,343,641	33,525,965	30,261,286
Operating lease expenses Repairs and maintenance expenses	22(a)	90,655,733 13,382,883	97,349,944 12,879,403 18,832,673	90,655,733 13,382,883 17,413,761	97,349,944 12,879,403
Other expenditure		17,435,619	10,032,073	17,413,701	18,757,170
Total operating expenditure		299,092,045	280,137,710	297,900,325	278,903,494
Net operating deficit		(68,211,656)	(31,775,423)	(69,173,423)	(32,925,470)
Non-operating income/(expenditure)					
Interest income Gain on disposal of property,		6,019,103	5,288,876	5,959,653	5,241,914
plant and equipment Property, plant and equipment		81,291	3,377	81,291	3,377
written-off/expensed		(31,740)	(416,800)	(31,740)	(416,800)
		6,068,654	4,875,453	6,009,204	4,828,491
Deficit before government grants brought forward		(62,143,002)	(26,899,970)	(63,164,219)	(28,096,979)

#### Statements of Comprehensive Income For the financial year ended 31 March 2017

	Note	Grc 2016/2017 S\$	oup 2015/2016 S\$	Auth 2016/2017 S\$	ority 2015/2016 S\$
Government grants					
Operating and development grants Deferred capital grants amortised	16 1 18	51,420,228 3,056,484	59,018,867 3,272,343	51,420,228 3,056,484	59,018,867 3,272,343
		54,476,712	62,291,210	54,476,712	62,291,210
(Deficit)/surplus before contribution to consolidated fund and income tax		(7,666,290)	35,391,240	(8,687,507)	34,194,231
Contribution to consolidated fund Income tax expense	17 4	_ (104,200)	(5,813,020) (118,896)		(5,813,020) _
(Deficit)/surplus for the year, representing total comprehensive income for the year	5	(7,770,490)	29,459,324	(8,687,507)	28,381,211

ANNUAL REPORT 2016/17

# Building and Construction Authority and its subsidiaries

#### Balance Sheets As at 31 March 2017

Assets         Out         Out         Out         Out         Out         Out         Out           Non-current assets         Propeid land lease         9         55,867,076         41,002,250         55,867,076         41,002,250         55,867,076         41,002,250         55,867,076         41,002,250         55,867,076         41,002,250         55,867,076         41,002,250         55,867,076         41,002,250         130,736,966         130,736,966         130,736,966         130,736,966         130,736,966         14,4168,898         18,000,170         14,327,635         17,448,279         130,300,000         4,000,000         -		Note	Gr 2016/2017 S\$	oup 2015/2016 S\$	Auth 2016/2017 S\$	nority 2015/2016 S\$
Property, plant and equipment Investments in subsidiaries         7         79,433,617         89,734,714         79,433,617         89,734,714         2 <th2< th="">         2         2</th2<>	Assets		Οψ	Οψ	Οψ	Οψ
Fixed deposits       11       4,000,000       3,000,000       -       -       -         Total non-current assets       139,300,693       133,736,964       135,300,695       130,736,966         Current assets       11       14,166,898       18,000,170       14,327,635       17,448,279         Fixed deposits       11       3,000,000       4,000,000       -       -       -         Cash and bank balances       12       442,078,931       447,460,190       440,632,921       446,543,364         Total current assets       459,245,829       469,460,360       454,960,556       463,991,643         Total assets       598,546,522       603,197,324       590,261,251       594,728,609         Liabilities       Fees received in advance       13       57,865,937       62,783,788       54,777,677       59,011,229         Trade apyables       14       56,591,375       51,424,906       56,574,801       51,406,899       20,854,133         Provision for pension costs       15(a)       59,629       2,283,336       559,629       2,283,336       559,629       2,283,336         Grants received in advance       16       20,077,935       130,395,851       117,988,901       126,486,356         Non-current liabiliti	Property, plant and equipment	8	79,433,617 _	89,734,714 -		89,734,714 2
Current assets         1         14,166,898         18,000,170         14,327,635         17,448,279           Fixed deposits         11         3,000,000         4,000,000         -         -         -           Cash and bank balances         12         442,078,931         447,460,190         440,632,921         446,543,364           Total current assets         459,245,829         469,460,360         454,960,556         463,991,643           Total assets         598,546,522         603,197,324         590,261,251         594,728,609           Liabilities and reserves         Current liabilities         57,865,937         62,783,788         54,777,677         59,011,229           Trade payables         14         54,66,153         7,552,856         56,574,801         51,406,899           Provision for pension costs         15(a)         559,629         2,283,336         559,629         2,283,336           Grants received in advance         16         220,641         419,016         220,641         419,016           Provision for contribution         10         -         5,813,020         -         5,813,020           Income tax payables         120,797,935         130,395,851         117,988,901         126,486,356           Non-current li	•				55,867,076 -	41,002,250
Trade and other receivables       10       14,166,898       18,000,170       14,327,635       17,448,279         Fixed deposits       11       3,000,000       4,000,000       -       -       -         Cash and bank balances       12       442,078,931       447,460,190       440,632,921       446,543,364         Total current assets       598,546,522       603,197,324       590,261,251       594,728,609         Liabilities and reserves       Current liabilities       598,546,522       603,197,324       590,261,251       59,011,229         Trade payables and accruals       14       5,456,153       7,552,889       5,856,153       7,552,856         Other payables and accruals       14       56,591,375       51,424,906       56,574,801       51,406,899         Provision for pension costs       15(a)       559,629       2,283,336       559,629       2,283,336         Grants received in advance       16       220,641       419,016       220,641       419,016         Provision for contribution to consolidated fund       17       -       5,813,020       -       -         Income tax payables       120,797,935       130,395,851       117,988,901       126,486,356         Non-current liabilities       13       70,909,	Total non-current assets		139,300,693	133,736,964	135,300,695	130,736,966
Cash and bank balances         12         442,078,931         447,460,190         440,632,921         446,543,364           Total current assets         459,245,829         469,460,360         454,960,556         463,991,643           Total assets         598,546,522         603,197,324         590,261,251         594,728,609           Liabilities and reserves         598,546,522         603,197,324         590,261,251         594,728,609           Current liabilities         Fees received in advance         13         57,865,937         62,783,788         54,777,677         59,011,229           Trade payables and accruals         14         5,456,153         7,552,889         5,856,153         7,552,856           Other payables and accruals         14         5,659,629         2,283,336         559,629         2,283,336           Grants received in advance         16         220,641         419,016         220,641         419,016           Provision for contribution to consolidated fund         17         5,813,020         –         –           Total current liabilities         120,797,935         130,395,851         117,988,901         126,486,356           Non-current liabilities         15(a)         4,044,937         3,846,139         4,044,937         3,848,139 <th< td=""><td></td><td>10</td><td>14,166,898</td><td>18,000,170</td><td>14,327,635</td><td>17,448,279</td></th<>		10	14,166,898	18,000,170	14,327,635	17,448,279
Total current assets         459,245,829         469,460,360         454,960,556         463,991,643           Total assets         598,546,522         603,197,324         590,261,251         594,728,609           Liabilities         Fees received in advance         13         57,865,937         62,783,788         54,777,677         59,011,229           Trade payables         14         5,456,153         7,552,889         5,856,153         7,552,856           Other payables and accruals         14         56,591,375         51,424,906         56,574,801         51,406,899           Provision for pension costs         15(a)         220,641         419,016         220,641         419,016           Current liabilities         120,797,935         130,395,851         117,988,901         126,486,356           Non-current liabilities         120,797,935         130,395,851         117,988,901         126,486,356           Non-current liabilities         120,797,935         130,395,851         117,988,901         126,486,356           Non-current liabilities         15(a)         4,044,937         3,848,139         4,044,937         3,848,139           Provision for pension costs         15(a)         4,044,937         3,848,139         4,044,937         3,848,139	Fixed deposits	11	3,000,000	4,000,000	_	_
Total assets         598,546,522         603,197,324         590,261,251         594,728,609           Liabilities and reserves         Current liabilities         57,865,937         62,783,788         54,777,677         59,011,229           Fees received in advance         13         57,865,937         62,783,788         54,777,677         59,011,229           Other payables         14         5,456,153         7,552,859         5,856,153         7,552,856           Other payables and accruals         14         56,591,375         51,424,906         56,574,801         51,406,899           Provision for pension costs         15(a)         559,629         2,283,336         559,629         2,283,336           Grants received in advance         16         220,641         419,016         220,641         419,016           Provision for contribution to consolidated fund         17         –         5,813,020         –         –           Income tax payables         120,797,935         130,395,851         117,988,901         126,486,356           Non-current liabilities         Fees received in advance         13         70,909,799         56,334,203         70,909,799         56,334,203           Provision for pension costs         15(a)         4,044,937         3,848,139	Cash and bank balances	12	442,078,931	447,460,190	440,632,921	446,543,364
Liabilities and reserves           Current liabilities           Fees received in advance         13         57,865,937         62,783,788         54,777,677         59,011,229           Trade payables         14         54,561,53         7,552,889         5,856,153         7,552,856           Other payables and accruals         14         56,591,375         51,424,906         56,574,801         51,406,899           Provision for pension costs         15(a)         559,629         2,283,336         559,629         2,283,336           Grants received in advance         16         220,641         419,016         220,641         419,016           Provision for contribution         to consolidated fund         17         –         5,813,020         –         5,813,020           Income tax payables         104,200         118,896         –         –         –           Total current liabilities         120,797,935         130,395,851         117,988,901         126,486,356           Non-current liabilities         15(a)         4,044,937         3,848,139         4,044,937         3,848,139           Provision for pension costs         15(b)         361,438         353,337         361,438         353,337           Grants received in advance	Total current assets		459,245,829	469,460,360	454,960,556	463,991,643
Current liabilities           Fees received in advance         13         57,865,937         62,783,788         54,777,677         59,011,229           Trade payables         14         5,456,153         7,552,889         5,856,153         7,552,856           Other payables and accruals         14         56,591,375         51,424,906         56,574,801         51,406,899           Provision for pension costs         15(a)         559,629         2,283,336         559,629         2,283,336           Grants received in advance         16         220,641         419,016         220,641         419,016           Provision for contribution to consolidated fund         17         –         5,813,020         –         5,813,020           Income tax payables         120,797,935         130,395,851         117,988,901         126,486,356           Non-current liabilities         120,797,935         130,395,851         117,988,901         126,486,356           Provision for pension costs         15(a)         4,044,937         3,848,139         4,044,937         3,848,139           Provision for reinstatement costs         15(b)         361,438         353,337         361,438         353,337           Grants received in advance         16         4,709,135         4,	Total assets		598,546,522	603,197,324	590,261,251	594,728,609
Fees received in advance1357,865,93762,783,78854,777,67759,011,229Trade payables145,456,1537,552,8895,856,1537,552,856Other payables and accruals1456,591,37551,424,90656,574,80151,406,899Provision for pension costs15(a)559,6292,283,336559,6292,283,336Grants received in advance16220,641419,016220,641419,016Provision for contribution to consolidated fund17–5,813,020–5,813,020Income tax payables104,200118,896–––Total current liabilities120,797,935130,395,851117,988,901126,486,356Non-current liabilities120,797,9353,848,1394,044,9373,848,139Provision for pension costs15(a)4,044,9373,848,1394,044,9373,848,139Provision for reinstatement costs15(b)361,438353,337361,438353,337Grants received in advance164,709,1354,791,5224,709,1354,791,522Deferred capital grants188,101,20610,081,7108,101,20610,081,710Total liabilities208,924,450205,804,762206,115,416201,895,267	Liabilities and reserves					
Trade payables       14       5,456,153       7,552,889       5,856,153       7,552,856         Other payables and accruals       14       56,591,375       51,424,906       56,574,801       51,406,899         Provision for pension costs       15(a)       559,629       2,283,336       559,629       2,283,336         Grants received in advance       16       220,641       419,016       220,641       419,016         Provision for contribution       17       –       5,813,020       –       5,813,020         Income tax payables       104,200       118,896       –       –         Total current liabilities       120,797,935       130,395,851       117,988,901       126,486,356         Non-current liabilities       13       70,909,799       56,334,203       70,909,799       56,334,203         Provision for pension costs       15(a)       4,044,937       3,848,139       4,044,937       3,848,139         Provision for reinstatement costs       15(b)       361,438       353,337       361,438       353,337         Grants received in advance       16       4,709,135       4,791,522       4,709,135       4,791,522         Deferred capital grants       18       8,101,206       10,081,710       8,101,206	Current liabilities					
Other payables and accruals       14       56,591,375       51,424,906       56,574,801       51,406,899         Provision for pension costs       15(a)       559,629       2,283,336       559,629       2,283,336         Grants received in advance       16       220,641       419,016       220,641       419,016         Provision for contribution       17       –       5,813,020       –       5,813,020         Income tax payables       104,200       118,896       –       –         Total current liabilities       120,797,935       130,395,851       117,988,901       126,486,356         Non-current liabilities       120,797,935       130,395,851       117,988,901       126,486,356         Provision for pension costs       15(a)       4,044,937       3,848,139       4,044,937       3,848,139         Provision for reinstatement costs       15(b)       361,438       353,337       361,438       353,337         Grants received in advance       16       4,709,135       4,791,522       4,709,135       4,791,522         Deferred capital grants       18       8,101,206       10,081,710       8,101,206       10,081,710         Total non-current liabilities       208,924,450       205,804,762       206,115,416       201	Fees received in advance	13	57,865,937	62,783,788	54,777,677	59,011,229
Provision for pension costs       15(a)       559,629       2,283,336       559,629       2,283,336         Grants received in advance       16       220,641       419,016       220,641       419,016         Provision for contribution       17       –       5,813,020       –       5,813,020         Income tax payables       104,200       118,896       –       –         Total current liabilities       120,797,935       130,395,851       117,988,901       126,486,356         Non-current liabilities       70,909,799       56,334,203       70,909,799       56,334,203         Provision for pension costs       15(a)       4,044,937       3,848,139       4,044,937       3,848,139         Provision for reinstatement costs       15(b)       361,438       353,337       361,438       353,337         Grants received in advance       16       4,709,135       4,791,522       4,709,135       4,791,522         Deferred capital grants       18       88,126,515       75,408,911       88,126,515       75,408,911         Total liabilities       208,924,450       205,804,762       206,115,416       201,895,267	Trade payables	14	5,456,153	7,552,889	5,856,153	7,552,856
Grants received in advance       16       220,641       419,016       220,641       419,016         Provision for contribution       17       -       5,813,020       -       5,813,020         Income tax payables       104,200       118,896       -       -         Total current liabilities       120,797,935       130,395,851       117,988,901       126,486,356         Non-current liabilities       120,797,935       130,395,851       117,988,901       126,486,356         Non-current liabilities       70,909,799       56,334,203       70,909,799       56,334,203         Provision for pension costs       15(a)       4,044,937       3,848,139       4,044,937       3,848,139         Provision for reinstatement costs       15(b)       361,438       353,337       361,438       353,337         Grants received in advance       16       4,709,135       4,791,522       4,709,135       4,791,522         Deferred capital grants       18       88,126,515       75,408,911       88,126,515       75,408,911         Total liabilities       208,924,450       205,804,762       206,115,416       201,895,267	Other payables and accruals	14	56,591,375		56,574,801	51,406,899
Provision for contribution to consolidated fund       17       –       5,813,020       –       5,813,020         Income tax payables       104,200       118,896       –       –       –         Total current liabilities       120,797,935       130,395,851       117,988,901       126,486,356         Non-current liabilities       120,797,935       130,395,851       117,988,901       126,486,356         Non-current liabilities       70,909,799       56,334,203       70,909,799       56,334,203         Provision for pension costs       15(a)       4,044,937       3,848,139       4,044,937       3,848,139         Provision for reinstatement costs       15(b)       361,438       353,337       361,438       353,337         Grants received in advance       16       4,709,135       4,791,522       4,709,135       4,791,522         Deferred capital grants       18       8,101,206       10,081,710       8,101,206       10,081,710         Total liabilities       208,924,450       205,804,762       206,115,416       201,895,267	•	15(a)				
Income tax payables       104,200       118,896       -       -         Total current liabilities       120,797,935       130,395,851       117,988,901       126,486,356         Non-current liabilities       13       70,909,799       56,334,203       70,909,799       56,334,203         Provision for pension costs       15(a)       4,044,937       3,848,139       4,044,937       3,848,139         Provision for reinstatement costs       15(b)       361,438       353,337       361,438       353,337         Grants received in advance       16       4,709,135       4,791,522       4,709,135       4,791,522         Deferred capital grants       18       8,101,206       10,081,710       8,101,206       10,081,710         Total non-current liabilities       208,924,450       205,804,762       206,115,416       201,895,267	Provision for contribution		220,641		220,641	
Total current liabilities120,797,935130,395,851117,988,901126,486,356Non-current liabilitiesFees received in advance1370,909,79956,334,20370,909,79956,334,203Provision for pension costs15(a)4,044,9373,848,1394,044,9373,848,139Provision for reinstatement costs15(b)361,438353,337361,438353,337Grants received in advance164,709,1354,791,5224,709,1354,791,522Deferred capital grants188,101,20610,081,7108,101,20610,081,710Total non-current liabilities88,126,51575,408,91188,126,51575,408,911Costal liabilities208,924,450205,804,762206,115,416201,895,267		17	-		-	5,813,020
Non-current liabilities         Fees received in advance       13       70,909,799       56,334,203       70,909,799       56,334,203         Provision for pension costs       15(a)       4,044,937       3,848,139       4,044,937       3,848,139         Provision for reinstatement costs       15(b)       361,438       353,337       361,438       353,337         Grants received in advance       16       4,709,135       4,791,522       4,709,135       4,791,522         Deferred capital grants       18       8,101,206       10,081,710       8,101,206       10,081,710         Total non-current liabilities       208,924,450       205,804,762       206,115,416       201,895,267	Income tax payables		104,200	118,896	_	_
Fees received in advance       13       70,909,799       56,334,203       70,909,799       56,334,203         Provision for pension costs       15(a)       4,044,937       3,848,139       4,044,937       3,848,139         Provision for reinstatement costs       15(b)       361,438       353,337       361,438       353,337         Grants received in advance       16       4,709,135       4,791,522       4,709,135       4,791,522         Deferred capital grants       18       88,126,515       75,408,911       88,126,515       75,408,911         Total liabilities       208,924,450       205,804,762       206,115,416       201,895,267	Total current liabilities		120,797,935	130,395,851	117,988,901	126,486,356
Provision for pension costs       15(a)       4,044,937       3,848,139       4,044,937       3,848,139         Provision for reinstatement costs       15(b)       361,438       353,337       361,438       353,337         Grants received in advance       16       4,709,135       4,791,522       4,709,135       4,791,522         Deferred capital grants       18       88,126,515       75,408,911       88,126,515       75,408,911         Total non-current liabilities       208,924,450       205,804,762       206,115,416       201,895,267	Non-current liabilities					
Provision for reinstatement costs       15(b)       361,438       353,337       361,438       353,337         Grants received in advance       16       4,709,135       4,791,522       4,709,135       4,791,522         Deferred capital grants       18       8,101,206       10,081,710       8,101,206       10,081,710         Total non-current liabilities       88,126,515       75,408,911       88,126,515       75,408,911         Total liabilities       208,924,450       205,804,762       206,115,416       201,895,267	Fees received in advance	13	70,909,799	56,334,203	70,909,799	56,334,203
Provision for reinstatement costs       15(b)       361,438       353,337       361,438       353,337         Grants received in advance       16       4,709,135       4,791,522       4,709,135       4,791,522         Deferred capital grants       18       8,101,206       10,081,710       8,101,206       10,081,710         Total non-current liabilities       88,126,515       75,408,911       88,126,515       75,408,911         Total liabilities       208,924,450       205,804,762       206,115,416       201,895,267	Provision for pension costs	15(a)	4,044,937	3,848,139	4,044,937	3,848,139
Deferred capital grants       18       8,101,206       10,081,710       8,101,206       10,081,710         Total non-current liabilities       88,126,515       75,408,911       88,126,515       75,408,911         Total liabilities       208,924,450       205,804,762       206,115,416       201,895,267	Provision for reinstatement costs		361,438	353,337	361,438	353,337
Total non-current liabilities         88,126,515         75,408,911         88,126,515         75,408,911           Total liabilities         208,924,450         205,804,762         206,115,416         201,895,267	Grants received in advance	16	4,709,135	4,791,522	4,709,135	4,791,522
<b>Total liabilities</b> 208,924,450 205,804,762 206,115,416 201,895,267	Deferred capital grants	18	8,101,206	10,081,710	8,101,206	10,081,710
	Total non-current liabilities		88,126,515	75,408,911	88,126,515	75,408,911
Net assets         389,622,072         397,392,562         384,145,835         392,833,342	Total liabilities		208,924,450	205,804,762	206,115,416	201,895,267
	Net assets		389,622,072	397,392,562	384,145,835	392,833,342

#### Balance Sheets As at 31 March 2017

		Group		Authority	
	Note	<b>2016/2017</b> S\$	<b>2015/2016</b> S\$	<b>2016/2017</b> S\$	2015/2016 S\$
Capital and reserves					
Share capital	19	1,000	1,000	1,000	1,000
Capital account	20	30,816,526	30,816,526	30,816,526	30,816,526
Accumulated surplus		358,804,546	366,575,036	353,328,309	362,015,816
Total capital and reserves		389,622,072	397,392,562	384,145,835	392,833,342
Net assets of trust and agency funds	21	25,705,913	17,968,408	25,705,913	17,968,408

# Statements of Changes in Reserves For the financial year ended 31 March 2017

	Share capital S\$	Capital account S\$	Accumulated surplus S\$	Total S\$
<b>Group</b> At 1 April 2015	1,000	30,816,526	341,254,240	372,071,766
Surplus for the year, representing total comprehensive income for the year	_	_	29,459,324	29,459,324
Less: Transfer of completed infrastructural projects	-	-	(4,138,528)	(4,138,528)
At 31 March 2016	1,000	30,816,526	366,575,036	397,392,562
Deficit for the year, representing total comprehensive income for the year	_	-	(7,770,490)	(7,770,490)
At 31 March 2017	1,000	30,816,526	358,804,546	389,622,072
<b>Authority</b> At 1 April 2015	1,000	30,816,526	337,773,133	368,590,659
Surplus for the year, representing total comprehensive income for the year Less: Transfer of completed infrastructural projects	-	-	28,381,211 (4,138,528)	28,381,211 (4,138,528)
At 31 March 2016	1,000	30,816,526	362,015,816	392,833,342
Deficit for the year, representing total comprehensive income for the year	_	_	(8,687,507)	(8,687,507)
At 31 March 2017	1,000	30,816,526	353,328,309	384,145,835

The accompanying accounting policies and explanatory information form an integral part of the financial statements.

#### BUILDING AND CONSTRUCTION AUTHORITY

# Building and Construction Authority and its subsidiaries

#### Consolidated Cash Flow Statement For the financial year ended 31 March 2017

	Group 2016/2017 2015/2016	
	S\$	S\$
Operating activities		
Deficit before government grants Adjustments for:	(62,143,002)	(26,899,970)
Depreciation of property, plant and equipment	20,312,392	18,991,067
Amortisation of prepaid land lease	1,935,175	1,103,939
Interest income	(6,019,103)	(5,288,876)
Gain on disposal of property, plant and equipment	(81,291)	(3,377)
Property, plant and equipment written-off/expensed	31,740	416,800
Allowance for/(reversal of) doubtful debts Provision for pension costs	233,509 502,303	(252,709) 434,848
r tovision for pension costs	502,505	434,040
Operating cash flows before changes in working capital	(45,228,277)	(11,498,278)
Decrease in trade and other receivables	3,447,417	6,351,127
Increase in fees received in advance	9,657,745	12,213,242
Decrease in trade payables	(2,096,736)	(5,740,551)
Increase in other payables and accruals	4,201,288	2,710,569
Decrease/(increase) in cash held on behalf of related parties	3,831,927	(512,224)
Cash flows (used in)/generated from operations	(26,186,636)	3,523,885
Payment for contribution to consolidated fund	(5,813,020)	(6,188,310)
Payment for income tax	(118,896)	(82,244)
Pension paid	(1,290,708)	(2,386,310)
Net cash flows used in operating activities	(33,409,260)	(5,132,979)
Investing activities		
Purchase of property, plant and equipment (Note A)	(8,875,571)	(20,508,988)
Proceeds from disposal of property, plant and equipment	81,311	4,523
Placement of fixed deposits	-	(1,200,000)
Interest received	6,119,607	3,528,431
Prepaid land lease	(16,800,001)	(22,889,001)
Payments made for infrastructural project-in-progress		(209,479)
Net cash flows used in investing activities	(19,474,654)	(41,274,514)
Financing activity		
Government grants received	51,334,582	59,075,855
Net cash flows from financing activity	51,334,582	59,075,855
Net (decrease)/increase in cash and cash equivalents	(1,549,332)	12,668,362
Cash and cash equivalents at 1 April	435,023,618	422,355,256
Cash and cash equivalents at 31 March (Note 12)	433,474,286	435,023,618

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#### Building and Construction Authority and its subsidiaries

#### Consolidated Cash Flow Statement For the financial year ended 31 March 2017

#### Note A

Purchase of property, plant and equipment:

	Group		
	<b>2016/2017</b> S\$	<b>2015/2016</b> S\$	
Additions of property, plant and equipment (Note 7) Add: Opening accruals for the purchase of property,	10,043,055	19,346,480	
plant and equipment (Note 14) Less: Closing accruals for the purchase of property,	2,293,050	3,515,608	
plant and equipment (Note 14) Less: Fixed assets received from Ministry of National Development	(2,519,727)	(2,293,050)	
(Note 18)	(297,875)	(48,948)	
Less: Other fixed assets received (Note 18)	(634,831)	(3,001)	
Add: Opening provision for reinstatement costs (Note 15(b))	353,337	345,236	
Less: Closing provision for reinstatement costs (Note 15(b))	(361,438)	(353,337)	
_	8,875,571	20,508,988	

#### Notes to the financial statements For the financial year ended 31 March 2017

#### 1. Domicile and activities

The Building and Construction Authority (the "Authority") is established as a statutory board in the Republic of Singapore under the Building and Construction Authority Act, Chapter 30A (the "Act").

The registered office of the Authority is located at 52 Jurong Gateway Road, #11-01, Singapore 608550.

The mission of the Authority is to shape a safe, high quality, sustainable and friendly built environment. The principal activities of the subsidiaries are disclosed in Note 8 to the financial statements.

#### 2. Summary of significant accounting policies

#### 2.1 Basis of preparation

The financial statements have been prepared in accordance with the provision of the Act and the Statutory Board Financial Reporting Standards ("SB-FRS"). SB-FRS includes Statutory Board Financial Reporting Standards, Interpretations of SB-FRS and SB-FRS Guidance Notes as promulgated by the Accountant-General.

The financial statements have been prepared on the historical cost basis, except as disclosed in the accounting policies below.

The financial statements are presented in Singapore Dollar ("SGD" or "S\$").

#### 2.2 Changes in accounting policies

The accounting policies adopted are consistent with those of the previous financial year except in the current financial year, the Group has adopted all the new and revised standards and interpretation of SB-FRS ("INT SB-FRS") that are effective for annual periods beginning on or after 1 April 2016. The adoption of these standards and interpretations did not have any material effect on the financial performance or position of the Group and the Authority.

#### 2.3 Standards issued but not yet effective

A number of new standards, amendments to standards and interpretations are not yet effective as at 1 April 2016, and have not been applied in preparing these financial statements. None of these are expected to have a significant effect on the financial statements of the Group, except for SB-FRS 109, SB-FRS 115 and SB-FRS 116. The nature of the impending changes in accounting policy on adoption of SB-FRS 109, SB-FRS 115 and SB-FRS 115 and SB-FRS 116 are described below.

Notes to the financial statements For the financial year ended 31 March 2017

#### 2. Summary of significant accounting policies (continued)

#### 2.3 Standards issued but not yet effective (continued)

#### SB-FRS 109 Financial Instruments

SB-FRS 109 introduces new requirements for classification and measurement of financial assets, impairment of financial assets and hedge accounting. Financial assets are classified according to their contractual cash flow characteristics and the business model under which they are held. The impairment requirements in SB-FRS 109 are based on an expected credit loss model and replace the SB-FRS 39 incurred loss model.

SB-FRS 109 is effective for annual periods beginning on or after 1 January 2018 with early application permitted. The Group is currently assessing the impact of SB-FRS 109 and plans to adopt the standard on the required effective date without restating prior periods' information and recognises any difference between the previous carrying amount and the carrying amount at the beginning of the annual reporting period at the date of initial application in the opening retained earnings.

#### SB-FRS 115 Revenue from Contracts with Customers

SB-FRS 115 establishes a five-step model that will apply to revenue arising from contracts with customers. Under SB-FRS 115, revenue is recognised at an amount that reflects the consideration which an entity expects to be entitled to in exchange for transferring goods or services to a customer.

The new revenue standard will supersede all current revenue recognition requirements under SB-FRS. Either a full or modified retrospective application is required for annual periods beginning on or after 1 January 2018 with early adoption permitted. The Group is currently assessing the impact of SB-FRS 115 and plans to adopt the new standard on the required effective date.

#### SB-FRS 116 Leases

SB-FRS 116 requires lessees to recognise most leases on balance sheets to reflect the rights to use the leased assets and the associated obligations for lease payments as well as the corresponding interest expense and depreciation charges. The standard includes two recognition exemption for lessees – leases of 'low value' assets and short term leases. The new standard is effective for annual periods beginning on or after 1 January 2019.

The Group is currently assessing the impact of the new standard and plans to adopt the new standard on the required effective date.

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#### BUILDING AND CONSTRUCTION AUTHORITY

#### Building and Construction Authority and its subsidiaries

Notes to the financial statements For the financial year ended 31 March 2017

#### 2. Summary of significant accounting policies (continued)

#### 2.4 Basis of consolidation

The consolidated financial statements comprise the financial statements of the Authority and its subsidiaries as at the end of the reporting period. The financial statements of the subsidiaries used in the preparation of the consolidated financial statements are prepared for the same reporting date as the Authority. Consistent accounting policies are applied to like transactions and events in similar circumstances.

All intra-group balances, income and expenses and unrealised gains and losses resulting from intra-group transactions are eliminated in full.

Subsidiaries are consolidated from the date of acquisition, being the date on which the Group obtains control, and continue to be consolidated until the date that such control ceases.

Losses within a subsidiary are attributed to the non-controlling interest even if that results in a deficit balance.

A change in the ownership interest of a subsidiary, without a loss of control, is accounted for as an equity transaction. If the Group loses control over a subsidiary, it:

- de-recognises the assets (including goodwill) and liabilities of the subsidiary at their carrying amounts at the date when control is lost;
- de-recognises the carrying amount of any non-controlling interest;
- de-recognises the cumulative translation differences recorded in equity;
- recognises the fair value of the consideration received;
- recognises the fair value of any investment retained;
- recognises any surplus or deficit in profit or loss;
- re-classifies the Group's share of components previously recognised in other comprehensive income to profit or loss or retained earnings, as appropriate.

#### 2.5 Foreign currency

The consolidated financial statements are presented in Singapore Dollar, which is the Authority's functional currency.

The Authority and its subsidiaries determine its own functional currency and items included in the financial statements of each entity are measured using that functional currency.

#### **Transactions and balances**

Transactions in foreign currencies are measured in the respective functional currencies of the Authority and its subsidiaries and are recorded on initial recognition in the functional currencies at exchange rates approximating those ruling at the transaction dates. Monetary assets and liabilities denominated in foreign currencies are translated at the rate of exchange ruling at the end of the reporting period. Non-monetary items that are measured in terms of historical cost in a foreign currency are translated using the exchange rates as at the dates of the initial transactions. Non-monetary items measured at fair value in a foreign currency are translated using the exchange rates as measured.

Exchange differences arising on the settlement of monetary items or on translating monetary items at the end of the reporting period are recognised in profit or loss.

Notes to the financial statements For the financial year ended 31 March 2017

#### 2. Summary of significant accounting policies (continued)

#### 2.6 Property, plant and equipment

All items of property, plant and equipment are initially recorded at cost. Subsequent to recognition, property, plant and equipment are measured at cost less accumulated depreciation and any accumulated impairment losses. The cost of an item includes its purchase price, any costs directly attributable to bringing the asset to the location and condition necessary for it to be capable of operating in the manner intended by the management, the cost of replacing part of the property, plant and equipment and borrowing costs that are directly attributable to the acquisition, construction or production of a qualifying property, plant and equipment. The cost of an item of property, plant and equipment is recognised as an asset if, and only if, it is probable that future economic benefits associated with the item will flow to the Group and the cost of the item can be measured reliably.

When significant parts of property, plant and equipment are required to be replaced in intervals, the Group recognises such parts as individual assets with specific useful lives and depreciation, respectively. Likewise, when a major inspection is performed, its cost is recognised in the carrying amount of the property, plant and equipment as a replacement if the recognition criteria are satisfied. All other repair and maintenance costs are recognised in profit or loss as incurred.

Depreciation is computed on a straight-line basis over the estimated useful lives of the assets as follows:

Leasehold land and office buildings	-	8 - 10 years and 29 years
Site office and land improvement	-	10 years
Office, photo printing and training equipment	-	5 - 10 years
Furniture, fittings and fixtures	-	8 years
Data processing equipment	-	3 - 5 years

Assets under construction included in property, plant and equipment are not depreciated as these assets are not yet available for use.

The carrying values of property, plant and equipment are reviewed for impairment when events or changes in circumstances indicate that the carrying value may not be recoverable.

The residual value, useful life and depreciation method are reviewed at each financial yearend, and adjusted prospectively, if appropriate.

An item of property, plant and equipment is derecognised upon disposal or when no future economic benefits are expected from its use or disposal. Any gain or loss on de-recognition of the asset is included in profit or loss in the year the asset is derecognised.

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#### BUILDING AND CONSTRUCTION AUTHORITY

#### Building and Construction Authority and its subsidiaries

Notes to the financial statements For the financial year ended 31 March 2017

#### 2. Summary of significant accounting policies (continued)

#### 2.7 Prepaid land lease

The prepaid land lease is initially measured at cost less impairment losses. Following initial recognition, the prepaid land lease is measured at cost less accumulated amortisation and any impairment loss. The prepaid land lease is amortised on a straight-line basis over the lease term of 30 years.

#### 2.8 Impairment of non-financial assets

The Group assesses at each reporting date whether there is an indication that an asset may be impaired. If any indication exists, or when an annual impairment testing for an asset is required, the Group makes an estimate of the asset's recoverable amount.

An asset's recoverable amount is the higher of an asset's or cash-generating unit's fair value less costs to sell and its value in use and is determined for an individual asset, unless the asset does not generate cash inflows that are largely independent of those from other assets or groups of assets. Where the carrying amount of an asset or cash-generating unit exceeds its recoverable amount, the asset is considered impaired and is written-down to its recoverable amount.

Impairment losses of continuing operations are recognised in profit or loss in those expense categories consistent with the function of the impaired asset, except for assets that are previously revalued where the revaluation was taken to other comprehensive income. In this case, the impairment is also recognised in other comprehensive income up to the amount of any previous revaluation.

A previously recognised impairment loss is reversed only if there has been a change in the estimates used to determine the asset's recoverable amount since the last impairment loss was recognised. If that is the case, the carrying amount of the asset is increased to its recoverable amount. That increase cannot exceed the carrying amount that would have been determined, net of depreciation, had no impairment loss been recognised previously. Such reversal is recognised in profit or loss, unless the asset is measured at revalued amount, in which case the reversal is treated as a revaluation increase.

#### 2.9 Subsidiaries

A subsidiary is an investee that is controlled by the Group. The Group controls an investee when it is exposed, or has rights, to variable returns from its involvement with the investee and has the ability to affect those returns through its power over the investee.

In the Authority's separate financial statements, investments in subsidiaries are accounted for at cost less impairment losses.

### Building and Construction Authority and its subsidiaries

Notes to the financial statements For the financial year ended 31 March 2017

## 2. Summary of significant accounting policies (continued)

### 2.10 Financial instruments

#### (a) Financial assets

### Initial recognition and measurement

Financial assets are recognised when, and only when, the Group becomes a party to the contractual provisions of the financial instrument. The Group determines the classification of its financial assets at initial recognition.

When financial assets are recognised initially, they are measured at fair value, plus, in the case of financial assets not at fair value through profit or loss, directly attributable transaction costs.

### Subsequent measurement - Loans and receivables

Non-derivative financial assets with fixed or determinable payments that are not quoted in an active market are classified as loans and receivables. Subsequent to initial recognition, loans and receivables are measured at amortised cost using the effective interest method, less impairment. Gains and losses are recognised in profit or loss when the loans and receivables are derecognised or impaired, and through the amortisation process.

#### **De-recognition**

A financial asset is de-recognised where the contractual right to receive cash flows from the asset has expired. On de-recognition of a financial asset in its entirety, the difference between the carrying amount and the sum of the consideration received and any cumulative gain or loss that had been recognised in other comprehensive income is recognised in profit or loss.

### (b) Financial liabilities

### Initial recognition and measurement

Financial liabilities are recognised when, and only when, the Group becomes a party to the contractual provisions of the financial instrument. The Group determines the classification of its financial liabilities at initial recognition.

All financial liabilities are recognised initially at fair value. In the case of financial liabilities not recognised at fair value through profit or loss, they are recognised at fair value net of attributable transaction costs.

### Subsequent measurement

After initial recognition, financial liabilities that are not carried at fair value through profit or loss are subsequently measured at amortised cost using the effective interest method. Gains and losses are recognised in profit or loss when the liabilities are derecognised, and through the amortisation process.

Notes to the financial statements For the financial year ended 31 March 2017

## 2. Summary of significant accounting policies (continued)

### 2.10 Financial instruments (continued)

### (b) Financial liabilities (continued)

### **De-recognition**

A financial liability is de-recognised when the obligation under the liability is discharged or cancelled or expires. When an existing financial liability is replaced by another from the same lender on substantially different terms, or the terms of an existing liability are substantially modified, such an exchange or modification is treated as a de-recognition of the original liability and the recognition of a new liability, and the difference in the respective carrying amounts is recognised in profit or loss.

## (c) Offsetting of financial instruments

Financial assets and financial liabilities are offset and the net amount is presented in the balance sheets, when and only when, there is a currently enforceable legal right to set off the recognised amounts and there is an intention to settle on a net basis, or to realise the assets and settle the liabilities simultaneously.

### 2.11 Impairment of financial assets

The Group assesses at each reporting date whether there is any objective evidence that a financial asset is impaired.

## Financial assets carried at amortised cost

For financial assets carried at amortised cost, the Group first assesses whether objective evidence of impairment exists individually for financial assets that are individually significant, or collectively for financial assets that are not individually significant. If the Group determines that no objective evidence of impairment exists for an individually assessed financial asset, whether significant or not, it includes the asset in a group of financial assets with similar credit risk characteristics and collectively assesses them for impairment. Assets that are individually assessed for impairment and for which an impairment loss is, or continues to be recognised are not included in a collective assessment of impairment.

If there is objective evidence that an impairment loss on financial assets carried at amortised cost has been incurred, the amount of the loss is measured as the difference between the asset's carrying amount and the present value of estimated future cash flows discounted at the financial asset's original effective interest rate. If a loan has a variable interest rate, the discount rate for measuring any impairment loss is the current effective interest rate. The carrying amount of the asset is reduced through the use of an allowance account. The impairment loss is recognised in profit or loss.

When the asset becomes uncollectible, the carrying amount of impaired financial assets is reduced directly or if an amount was charged to the allowance account, the amounts charged to the allowance account are written-off against the carrying value of the financial assets.

To determine whether there is objective evidence that an impairment loss on financial assets has been incurred, the Group considers factors such as the probability of insolvency or significant financial difficulties of the debtor and default or significant delay in payments.

Notes to the financial statements For the financial year ended 31 March 2017

## 2. Summary of significant accounting policies (continued)

### 2.11 Impairment of financial assets (continued)

### Financial assets carried at amortised cost (continued)

If in a subsequent period, the amount of the impairment loss decreases and the decrease can be related objectively to an event occurring after the impairment was recognised, the previously recognised impairment loss is reversed to the extent that the carrying amount of the asset does not exceed its amortised cost at the reversal date. The amount of reversal is recognised in profit or loss.

## 2.12 Cash and bank balances

Cash and bank balances comprise cash at bank and on hand, demand deposits, and shortterm, highly liquid investments that are readily convertible to known amount of cash and which are subject to an insignificant risk of changes in value.

For the purpose of presentation in the financial statements, cash and bank balances comprise cash at bank, fixed deposits with financial institutions and cash balances with the Accountant-General Department which are subject to an insignificant risk of change in value. The cash at bank not available for general use is disclosed in Note 12 to the financial statements.

### 2.13 Provisions

Provisions are recognised when the Group has a present obligation (legal or constructive) as a result of a past event, it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and the amount of the obligation can be estimated reliably.

Provisions are reviewed at the end of each reporting period and adjusted to reflect the current best estimate. If it is no longer probable that an outflow of economic resources will be required to settle the obligation, the provision is reversed. If the effect of the time value of money is material, provisions are discounted using a current pre tax rate that reflects, where appropriate, the risks specific to the liability. When discounting is used, the increase in the provision due to the passage of time is recognised as a finance cost.

## **Provision for reinstatement cost**

The provision for reinstatement costs from contractual obligation to restore the leased office to their original states are provided at the present value of expected costs to settle the obligation using estimated cash flows and are recognised as part of the cost of that particular asset. The cash flows are discounted at a current pre tax rate that reflects the risks specific to the reinstatement liability. The unwinding of the discount is expensed as incurred and recognised in profit or loss as a finance cost. The estimated future costs of reinstatement are reviewed annually and adjusted as appropriate. Changes in the estimated future costs or in the discount rate applied are added to or deducted from the cost of the asset.

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# Building and Construction Authority and its subsidiaries

Notes to the financial statements For the financial year ended 31 March 2017

## 2. Summary of significant accounting policies (continued)

## 2.14 Government grants

Government grants are recognised at their fair values where there is reasonable assurance that the grant will be received and all attaching conditions will be complied with. Where the grant relates to an asset, the fair value is recognised as deferred capital grant on the balance sheet and is amortised to profit or loss over the expected useful life of the relevant asset by equal annual instalments.

Government grant shall be recognised in profit or loss on a systematic basis over the periods in which the entity recognises as expenses the related costs for which the grants are intended to compensate. Grants related to income are presented as a credit in profit or loss.

## 2.15 Taxes

## (a) Current income tax

Current income tax assets and liabilities for the current and prior periods are measured at the amount expected to be recovered from or paid to the taxation authorities. The tax rates and tax laws used to compute the amount are those that are enacted or substantively enacted by the end of the reporting period.

Current income taxes are recognised in profit or loss except to the extent that the tax relates to items recognised outside profit or loss, either in other comprehensive income or directly in equity. Management periodically evaluates positions taken in the tax returns with respect to situations in which applicable tax regulations are subject to interpretation and establishes provisions where appropriate.

## (b) Deferred tax

Deferred tax is provided using the liability method on temporary differences at the end of the reporting period between the tax bases of assets and liabilities and their carrying amounts for financial reporting purposes.

Deferred tax liabilities are recognised for all temporary differences, except:

- Where the deferred tax liability arises from the initial recognition of goodwill or of an asset or liability in a transaction that is not a business combination and, at the time of the transaction, affects neither the accounting profit nor taxable profit or loss; and
- In respect of taxable temporary differences associated with investments in subsidiaries, where the timing of the reversal of the temporary differences can be controlled and it is probable that the temporary differences will not reverse in the foreseeable future.

# 2. Summary of significant accounting policies (continued)

## 2.15 Taxes (continued)

# (b) Deferred tax (continued)

Deferred tax assets are recognised for all deductible temporary differences, the carry forward of unused tax credits and unused tax losses, to the extent that it is probable that taxable profit will be available against which the deductible temporary differences, and the carry forward of unused tax credits and unused tax losses can be utilised except:

- Where the deferred tax asset relating to the deductible temporary difference arises from the initial recognition of an asset or liability in a transaction that is not a business combination and, at the time of the transaction, affects neither the accounting profit nor taxable profit or loss; and
- In respect of deductible temporary differences associated with investments in subsidiaries, deferred tax assets are recognised only to the extent that it is probable that the temporary differences will reverse in the foreseeable future and taxable profit will be available against which the temporary differences can be utilised.

The carrying amount of deferred tax assets is reviewed at the end of each reporting period and reduced to the extent that it is no longer probable that sufficient taxable profit will be available to allow all or part of the deferred tax asset to be utilised. Unrecognised deferred tax assets are reassessed at the end of each reporting period and are recognised to the extent that it has become probable that future taxable profit will allow the deferred tax asset to be recovered.

Deferred tax assets and liabilities are measured at the tax rates that are expected to apply in the year when the asset is realised or the liability is settled, based on tax rates and tax laws that have been enacted or substantively enacted at the end of each reporting period.

Deferred tax relating to items recognised outside profit or loss is recognised outside profit or loss. Deferred tax items are recognised in correlation to the underlying transaction either in other comprehensive income or directly in equity and deferred tax arising from a business combination is adjusted against goodwill on acquisition.

# (c) Sales tax

Revenues, expenses and assets are recognised net of the amount of sales tax except:

- Where the sales tax incurred in a purchase of assets or services is not recoverable from the taxation authority, in which case the sales tax is recognised as part of the cost of acquisition of the asset or as part of the expense item as applicable; and
- Receivables and payables that are stated with the amount of sales tax included.

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# BUILDING AND CONSTRUCTION AUTHORITY

# Building and Construction Authority and its subsidiaries

## Notes to the financial statements For the financial year ended 31 March 2017

# 2. Summary of significant accounting policies (continued)

## 2.16 Revenue

Revenue is recognised to the extent that it is probable that the economic benefits will flow to the Group and the revenue can be reliably measured, regardless of when the payment is made. Revenue is measured at the fair value of consideration received or receivable, taking into account contractually defined terms of payment and excluding taxes. The Group assesses its revenue arrangements to determine if it is acting as principal or agent. The Group has concluded that it is acting as a principal in all of its revenue arrangements. The following specific recognition criteria must also be met before revenue is recognised:

- Plan fees are recognised as income over the expected duration of individual projects;
- Advertisement licence fees are recognised as income over the validity periods of the licence;
- Course fees are recognised as income over the duration of the courses;
- Quality assessment and certification fees are recognised as income over the assessment period;
- Trade test fees are recognised as income on completion of trade tests;
- Contractors registration fees are recognised as income over the validity period of the registration;
- Operating lease income is recognised on a straight-line basis over the lease term;
- Management fees are recognised as income over the period of services rendered; and
- Interest income is recognised using the effective interest method.

# 2.17 Trust and agency funds

Trust and agency funds are government grants and contributions from other organisations where the Authority is not the owner and beneficiary of the funds. The Authority is merely administering the funds on behalf of the holders of these funds. Income and expenditure of these funds are taken directly to the funds. The net assets relating to the funds are shown as a separate line item in the balance sheets.

Trust and agency funds are accounted for on a cash basis.

## 2.18 Employee benefit

## (a) Defined contribution plans

The Group makes contributions to the Central Provident Fund ("CPF") scheme in Singapore, a defined contribution pension scheme. Contributions to defined contribution pension schemes are recognised as an expense in the period in which the related service is performed.

## (b) Employee leave entitlement

Employee entitlements to annual leave are recognised as a liability when they accrue to the employees. The estimated liability for leave is recognised for services rendered by employees up to the end of the reporting period.

### Building and Construction Authority and its subsidiaries

## Notes to the financial statements For the financial year ended 31 March 2017

## 2. Summary of significant accounting policies (continued)

### 2.18 Employee benefit (continued)

#### (c) Defined benefit retirement obligations

Provision for pension benefits is made for pensionable officers transferred to the Authority on 1 April 1999. Defined benefit retirement obligations due to pensionable officers are recognised in the balance sheets in accordance with the Pensions Act, Chapter 225.

The Authority had engaged an actuarial to assess the provision for pension costs for the first time in the previous financial year.

An actuarial valuation is conducted once every four years or as and when required to determine the cost of pension benefits due to these officers using the Projected Unit Credit Method.

Defined benefit costs comprise the following:

- Service cost
- Interest cost on the provision for defined benefits
- Re-measurements of the provision for defined benefits

Service costs which include current service costs, past service costs and gains or losses on non-routine settlements are recognised as expense in income or expenditure. Past service costs are recognised when plan amendment or curtailment occurs.

Interest cost on the provision for defined benefits is the change during the period in the provision that arises from the passage of time which is determined by applying the discount rate based on the Singapore Government bond yield to the provision. Interest cost on the provision is recognised in income or expenditure.

Re-measurements comprising actuarial gains and losses are recognised immediately in other comprehensive income in the period in which they arise. Re-measurements are recognised in accumulated surplus within equity and are not reclassified to income or expenditure in subsequent periods.

### (d) Short-term employee benefits

Short-term employee benefit obligations are measured on an undiscounted basis and are expensed as the related service is provided.

A liability is recognised for the amount expected to be paid under short-term cash bonus if the Group has a present legal or constructive obligation to pay this amount as a result of past service provided by the employee, and the obligation can be estimated reliably.

Notes to the financial statements For the financial year ended 31 March 2017

### 2. Summary of significant accounting policies (continued)

## 2.19 Lease

### (a) As lessee

Operating lease payments are recognised as an expense in profit or loss on a straight-line basis over the lease term. The aggregate benefit of incentives provided by the lessor is recognised as a reduction of rental expense over the lease term on a straight-line basis.

# (b) As lessor

Leases where the Group does not transfer substantially all the risks and rewards of ownership of the asset are classified as operating leases. Initial direct costs incurred in negotiating an operating lease are added to the carrying amount of the leased asset and recognised over the lease term on the same basis as rental income. Contingent rents are recognised as revenue in the period in which they are earned.

# 2.20 Statutory contribution to consolidated fund

The Authority is required to contribute to the Consolidated Fund based on a percentage of the net surplus of the Authority for each financial year. The percentage of contribution is determined by the Ministry of Finance.

## 2.21 Contingencies

A contingent liability is:

- (a) a possible obligation that arises from past events and whose existence will be confirmed only by the occurrence or non-occurrence of one or more uncertain future events not wholly within the control of the Group; or
- (b) a present obligation that arises from past events but is not recognised because:
  - (i) It is not probable that an outflow of resources embodying economic benefits will be required to settle the obligation; or
  - (ii) The amount of the obligation cannot be measured with sufficient reliability.

A contingent asset is a possible asset that arises from past events and whose existence will be confirmed only by the occurrence or non-occurrence of one or more uncertain future events not wholly within the control of the Group.

Contingent liabilities and assets are not recognised on the balance sheet of the Group, except for contingent liabilities assumed in a business combination that are present obligations and which the fair values can be reliably determined.

### Building and Construction Authority and its subsidiaries

Notes to the financial statements For the financial year ended 31 March 2017

## 2. Summary of significant accounting policies (continued)

## 2.22 Related parties

For the purpose of these financial statements, parties are considered to be related to the Authority if the Authority has the ability, directly or indirectly, to control the party or exercise significant influence over the party in making financial and operating decisions, or vice versa, or where the Authority and the party are subject to common control or common significant influence. Related parties may be individuals or other entities.

The Authority is a statutory board under the purview of Ministry of National Development ("MND") and is an entity related to the Government of Singapore. Accordingly, the Authority's related parties include Government-related entities such as Ministries, Organs of State and other Statutory Boards.

In accordance with Paragraph 28A of SB-FRS 24 *Related Party Disclosures*, the Authority is exempted from disclosing transactions with government-related entities other than Ministries, Organs of State and other Statutory Boards, unless there are circumstances to indicate that these transactions are unusual and their disclosure would be of interest to readers of the financial statements.

The Authority also applies the exemption in Paragraph 25 of SB-FRS 24 *Related Party Disclosures*. Required disclosures of transactions and outstanding balances with government-related entities are limited to the following information to enable users of the Authority's financial statements to understand the effect of the related party transactions on the financial statements:

- (i) the nature and amount of each individually significant transaction with Ministries, Organs of State and other Statutory Boards; and
- (ii) for other transactions with Ministries, Organs of State and other Statutory Boards that are collectively but not individually significant, a qualitative or quantitative indication of their extent.

### 3. Significant accounting judgements and estimates

The preparation of the Group's financial statements requires management to make judgements, estimates and assumptions that affect the reported amounts of revenues, expenses, assets and liabilities, and the disclosure of contingent liabilities at the end of each reporting period. Uncertainty about these assumptions and estimates could result in outcomes that require a material adjustment to the carrying amount of the asset or liability affected in the future periods.

### 3.1 Judgements made in applying accounting policies

In the process of applying the Group's accounting policies, management has not made any significant judgements, apart from those involving estimations.

BUILDING AND CONSTRUCTION AUTHORITY

# Building and Construction Authority and its subsidiaries

Notes to the financial statements For the financial year ended 31 March 2017

## 3. Significant accounting judgements and estimates (continued)

## 3.2 Key sources of estimation uncertainty

The key assumptions concerning the future and other key sources of estimation uncertainty at the end of each reporting period, that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are discussed below. The Group based its assumptions and estimates on parameters available when the financial statements were prepared. Existing circumstances and assumptions about future developments, however, may change due to market changes or circumstances arising beyond the control of the Group. Such changes are reflected in the assumptions when they occur.

## (a) Impairment of loans and receivables

The Group assesses at the end of each reporting period whether there is any objective evidence that a financial asset is impaired. To determine whether there is objective evidence of impairment, the Group considers factors such as the probability of insolvency or significant financial difficulties of the debtor and default or significant delay in payments.

Where there is objective evidence of impairment, the amount and timing of future cash flows are estimated based on historical loss experience for assets with similar credit risk characteristics. The carrying amount of the Group's loans and receivables at the end of the reporting period is disclosed in Note 10 to the financial statements. If the present value of estimated future cash flows decrease by 10% from the management's estimates, the Group's allowance for impairment will increase by \$218,426 (2015/2016: \$199,533).

## (b) Depreciation of property, plant and equipment

Property, plant and equipment are depreciated on a straight-line basis over their estimated economic useful lives. Management estimates the useful lives of these property, plant and equipment to be within 3 to 29 years. Changes in the expected level of usage and technological developments could impact the economic useful lives and the residual values of these assets, therefore future depreciation charges could be revised. The estimated useful lives used in determining the value of property, plant and equipment and sensitivity analysis for property, plant and equipment are disclosed under Notes 2.6 and 7 to the financial statements.

The carrying amount of the Group's and Authority's property, plant and equipment at 31 March 2017 was \$\$77,515,181 (2015/2016: \$\$81,809,992).

## (c) Provision for pension costs

The Group recognised a provision for pension cost for employees who are under the pension scheme. The provision has been computed based on certain assumptions and estimates as disclosed in Note 15(a) to the financial statements and revisions to the assumptions and estimates could impact the provision made.

As at 31 March 2017, provision for pension costs amounted to \$4,604,566 (2015/2016: \$6,131,475).

## Building and Construction Authority and its subsidiaries

# Notes to the financial statements For the financial year ended 31 March 2017

## 4. Income tax expense

### Major components of income tax expense

The subsidiaries of the Authority are subject to tax under Section 13(1)(e) of the Singapore Income Tax Act as follows:

	Gro	oup
	<b>2016/2017</b> S\$	<b>2015/2016</b> S\$
Current income taxation	104,200	118,896

# Relationship between tax expense and accounting profit of the subsidiaries

A reconciliation between tax expense and the product of accounting profit of its subsidiaries multiplied by the applicable corporate tax rate for the financial years ended 31 March 2017 and 2016 is as follows:

	Gro	oup
	<b>2016/2017</b> S\$	<b>2015/2016</b> S\$
(Deficit)/surplus before contribution to consolidated fund and taxation Less: The Authority's deficit/(surplus) before contribution to	(7,666,290)	35,391,240
consolidated fund and income tax expense	8,687,507	(34,194,231)
The subsidiaries' surplus before income tax expense	1,021,217	1,197,009
Tax at statutory rate of 17% (2015/2016: 17%) Adjustments:	173,607	203,492
Tax exempt income	(93,925)	(93,925)
Corporate income tax rebate Deferred tax assets not recognised	(11,238) 40,756	(20,571) 29,900
Over-provision in prior year	(5,000)	
Income tax expense recognised in profit or loss	104,200	118,896

In respect of deferred tax assets not recognised, the unutilised tax losses of S\$579,628 (2015/2016: S\$339,886) are available for offset against future taxable profits, subject to compliance with the relevant provisions of the Singapore Income Tax Act.

# Notes to the financial statements For the financial year ended 31 March 2017

# 5. (Deficit)/surplus for the year

The following items have been included in arriving at (deficit)/surplus for the financial year:

	Group and	Authority
	2016/2017	2015/2016
	S\$	S\$
Builders licensing fees	(2,146,855)	(2,050,230)
Importers licensing fees	(3,153,700)	(3,329,279)
Royalty fees	(1,832,342)	(2,213,660)
Allowance for/(reversal of allowance for) doubtful debts	233,509	(252,709)
Staff training	1,290,388	1,242,209
Property tax	821,100	1,112,449
Publicity materials expense	3,217,014	4,116,081
Board members' allowances	106,875	124,144
Foreign exchange loss	12,573	25,953
Input GST disallowed	3,178,679	3,821,081

# 6. Employee benefit costs

	Gro	oup	Authority	
	<b>2016/2017</b> S\$	<b>2015/2016</b> S\$	<b>2016/2017</b> S\$	2015/2016 S\$
Salaries, allowances and bonus Central Provident Fund contribution	108,319,236 14,725,533	89,077,140 12,073,491	107,282,150 14,665,263	88,000,782 12,073,491
Pension benefits (Note 15(a)) Other staff costs	502,303 160,288	434,848 155,503	502,303 159,875	434,848 155,503
	123,707,360	101,740,982	122,609,591	100,664,624

Notes to the financial statements For the financial year ended 31 March 2017

d equipment
, plant and
Property
7.

Group and Authority	Leasehold land S\$	Office building S\$	Site office and land improvement S\$	Office, photo printing and training equipment S\$	Furniture, fittings and fixtures S\$	Data processing equipment S\$	Assets under construction S\$	Total S\$
<b>Cost:</b> At 1 Apr 2015 Additions Reclassification Disposals Written-off Adjustment *	15,029,724 - 45,287 - -	15,029,724 29,511,951 - 2,779,929 45,287 25,245,994 	1,021,695 12,000 1,597,062 -	8,198,370 2,678,221 16,453,080 - (417,395) -	29,277,666 3,698,370 7,663,268 (12,090) (838,093) (12,640)	12,465,900 3,066,237 3,296,293 (683,352) (291,208) (35,445)	55,082,489 7,111,723 (54,300,984) - 31,494	150,587,795 19,346,480 - (1,546,696) (206,287)
At 31 March 2016 Additions Reclassification Disposals Written-off	15,075,011 _ _ _	15,075,011 57,348,178 - 518,404 - 15,248 	2,630,757 12,000 - (246,600)	26,912,276 946,018 1,187,877 (397,749) (246,996)	39,776,481 3,397,850 4,957,744 (278,035)	17,818,425 3,790,345 1,223,855 (737,611) (2,656)	7,924,722 1,378,438 (7,384,724) -	167,485,850 10,043,055 - (1,135,360) (774,287)
At 31 March 2017	15,075,011	15,075,011 57,881,830	2,396,157	28,401,426	47,854,040	22,092,358	1,918,436	175,619,258

\* Adjustment to cost upon completion of projects.

Notes to the financial statements For the financial year ended 31 March 2017 7. Property, plant and equipment (continued)

Group and Authority	Leasehold Iand S\$	Office building S\$	Site office and land improvement S\$	Office, photo printing and training equipment S\$	Furniture, fittings and fixtures S\$	Data processing equipment S\$	Assets under construction S\$	Total S\$
Accumulated depreciation: At 1 Apr 2015 Depreciation for the year Disposals Written-off	9,553,404 793,653 -	20,361,901 5,260,922 	740,112 269,598 -	5,773,528 4,642,092 – (416,502)	15,318,487 4,333,207 (11,916) (628,475)	9,043,116 3,691,595 (682,380) (291,206)	1 1 1 1	60,790,548 18,991,067 (694,296) (1,336,183)
At 31 March 2016 Depreciation for the year Disposals Written-off	10,347,057 787,992 -	25,622,823 5,413,395 -	1,009,710 190,935 (221,940)	9,999,118 4,725,400 (397,746) (245,313)	19,011,303 5,529,015 	11,761,125 3,665,655 (737,594) (2,656)	1111	77,751,136 20,312,392 (1,135,340) (742,547)
At 31 March 2017	11,135,049	1,135,049 31,036,218	978,705	14,081,459	24,267,680	14,686,530	I	96,185,641
<b>Net carrying amount:</b> At 31 March 2016	4,727,954	4,727,954 31,725,355	1,621,047	16,913,158	20,765,178	6,057,300	7,924,722	89,734,714
At 31 March 2017	3,939,962	26,845,612	1,417,452	14,319,967	23,586,360	7,405,828	1,918,436	79,433,617

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Notes to the financial statements For the financial year ended 31 March 2017

# 7. Property, plant and equipment (continued)

A 5% difference in the expected useful lives of these assets from management's estimates would result in approximately 14% (2015/2016: 3%) or S\$1,069,053 (2015/2016: S\$999,579) variance in the Group's (deficit)/surplus before contribution to consolidated fund and income tax.

### 8. Investments in subsidiaries

		:	Authori 2016/2017 : S\$	ty 2015/2016 S\$
Unquoted shares, at co	ost		2	2
The subsidiaries at 31	March 2017 are:			
Name of subsidiaries	Country of Incorporation and Principle Place of Business			ntage of ip interest
	Ducinicit		2016/2017 %	2015/2016 %
BCA International Private Limited	Singapore	Construction related consultancy and advisory services	100	100
BCA Centre for Sustainable Buildings Ltd	Singapore	Research and consultancy services for sustainable buildin policies and climate	100 g	100

change

# Notes to the financial statements For the financial year ended 31 March 2017

# 9. Prepaid land lease

	Group and 2016/2017 S\$	d Authority 2015/2016 S\$
Cost: At 1 April Additions	42,655,251 16,800,001	19,766,250 22,889,001
At 31 March	59,455,252	42,655,251
Accumulated amortisation: At 1 April Amortisation for the year At 31 March	1,653,001 1,935,175 3,588,176	549,062 1,103,939 1,653,001
Net carrying amount	55,867,076	41,002,250
Amount to be amortised: - Not later than one year - Later than one year but not later than five years - Later than five years	1,981,842 8,586,243 45,298,991	1,421,842 5,687,367 33,893,041

The Authority leases industrial lands for the development of the Integrated Construction and Precast Hub and in turn the lands are leased out to three different third parties.

The industrial land leased from Housing and Development Board has a remaining tenure of 27 years (2015/2016: 28 years) and the lease started from 2014/2015. The industrial lands leased from Singapore Land Authority have a remaining tenure of 28 years (2015:2016: 29 years) and 29 years. The leases from Singapore Land Authority started from 2015/2016 and 2016/2017 respectively.

## Building and Construction Authority and its subsidiaries

## Notes to the financial statements For the financial year ended 31 March 2017

## 10. Trade and other receivables

	Group		Auth	ority
	<b>2016/2017</b> S\$	<b>2015/2016</b> S\$	<b>2016/2017</b> S\$	<b>2015/2016</b> S\$
Trade receivables	8,521,132	9,586,027	8,264,905	8,872,013
Other receivables Grant receivable from Ministry of National	4,648,949	5,120,781	4,607,223	5,077,025
Development ("MND") Amounts due from	336,087	2,200,000	336,087	2,200,000
subsidiaries – non-trade	-	_	524,393	273,478
Deposits	2,323	1,824	2,323	1,824
Prepayments	658,407	1,091,538	592,704	1,023,939
Total trade and other				
receivables	14,166,898	18,000,170	14,327,635	17,448,279
Less: Prepayments Add: Fixed deposits	(658,407)	(1,091,538)	(592,704)	(1,023,939)
(Note 11)	7,000,000	7,000,000	_	-
Add: Cash and cash equivalents (Note 12)	433,474,286	435,023,618	432,028,276	434,106,792
Total loans and receivables	453,982,777	458,932,250	445,763,207	450,531,132

Trade and other receivables are denominated in Singapore Dollar.

### Trade receivables

Trade receivables are non-interest bearing and are on 30 days' terms. They are recognised at their original invoice amounts which represent their fair values on initial recognition.

### Amounts due from subsidiaries

The non-trade amounts due from subsidiaries are unsecured, interest-free, repayable on demand and are to be settled in cash.

### Receivables that are past due but not impaired

The Group and the Authority have trade and other receivables amounting to S\$2,184,258 and S\$2,023,820 (2015/2016: S\$1,995,329 and S\$1,423,083), respectively that are past due at the end of the reporting period but not impaired. These receivables are unsecured and the analysis of their aging at the end of the reporting period is as follows:

# Notes to the financial statements For the financial year ended 31 March 2017

# 10. Trade and other receivables (continued)

Receivables that are past due but not impaired

	Gro	oup	Authority	
	<b>2016/2017</b> S\$	2015/2016 S\$	<b>2016/2017</b> S\$	2015/2016 S\$
Receivables past due but not impaired				
- < 3 months	1,883,516	1,293,938	1,752,779	1,019,952
- 3 months to 6 months	210,373	149,957	210,373	54,657
<ul> <li>&gt; 6 months to 12 months</li> </ul>	25,117	139,330	25,117	90,230
- > 12 months	65,252	412,104	35,551	258,244
	2,184,258	1,995,329	2,023,820	1,423,083

# Receivables that are impaired

The Group's trade receivables that are impaired at the end of the reporting period and the movement of the allowance accounts used to record the impairment are as follows:

	Group and 2016/2017 S\$	Authority 2015/2016 S\$
Trade receivable - nominal amount Less: Allowance for impairment	577,898 (577,898)	344,389 (344,389)
		_
Movement in allowance accounts: At 1 April Allowance for/(reversal of allowance for) the year (Note 5)	344,389 233,509	597,098 (252,709)
At 31 March	577,898	344,389

## Notes to the financial statements For the financial year ended 31 March 2017

### 11. Fixed deposits

	Gro	oup
	<b>2016/2017</b> S\$	<b>2015/2016</b> S\$
Fixed deposits with financial institutions	7,000,000	7,000,000
Represented by:		
Current	3,000,000	4,000,000
Non-current	4,000,000	3,000,000
	7,000,000	7,000,000

Fixed deposits with financial institutions are made for periods of 18 months (2015/2016: 18 months). The weighted average effective interest rates for the year ended 31 March 2017 for the Group were 1.21% to 1.37% per annum (2015/2016: 0.50% to 1.37%).

Fixed deposits are denominated in Singapore Dollar.

### 12. Cash and bank balances

	Gr	oup	Auth	nority
	<b>2016/2017</b> S\$	<b>2015/2016</b> S\$	<b>2016/2017</b> S\$	2015/2016 S\$
Cash at bank	16,704,228	16,920,539	15,258,218	16,003,713
Cash with the AGD	425,374,703	430,539,651	425,374,703	430,539,651
Less: Cash at bank not	442,078,931	447,460,190	440,632,921	446,543,364
available for general use	(8,604,645)	(12,436,572)	(8,604,645)	(12,436,572)
Cash and cash equivalents	433,474,286	435,023,618	432,028,276	434,106,792

Cash and cash equivalents are denominated in Singapore Dollar.

Cash at bank not available for general use

The Group acts as a collection agent for various parties on certain projects and collects payments on their behalf.

### Cash with the AGD

On 2 November 2009, the Accountant-General's Department ("AGD") issued a Circular No. 4/2009 to centrally manage the cash of all Statutory Boards and Ministries under the Centralised Liquidity Management ("CLM") scheme. This scheme aims to achieve higher returns and to better manage credit risk at the Whole-of-Government level. The Authority has participated in the CLM scheme since 25 March 2010.

The weighted average CLM yield for the year ended 31 March 2017 is 1.37% per annum (2015/2016: 1.26%).

# Notes to the financial statements For the financial year ended 31 March 2017

### 13. Fees received in advance

	Gro	oup	Auth	ority
	2016/2017	2015/2016	2016/2017	2015/2016
	S\$	S\$	S\$	S\$
Balance at 1 April	119,117,991	106,904,749	115,345,432	103,200,389
Add: Fees received	132,097,887	146,649,999	130,878,264	144,390,553
Less: Fees recognised as				
revenue	(122,440,142)	(134,436,757)	(120,536,220)	(132,245,510)
Balance at 31 March	128,775,736	119,117,991	125,687,476	115,345,432
Represented by:				
Current	57,865,937	62,783,788	54,777,677	59,011,229
Non-current	70,909,799	56,334,203	70,909,799	56,334,203
	128,775,736	119,117,991	125,687,476	115,345,432

# 14. Other payables and accruals

	Gro	up	Autho	ority
	2016/2017	2015/2016	2016/2017	2015/2016
	S\$	S\$	S\$	S\$
Other payables and accruals (current):				
Amounts due to MND	8,258,524	11,789,109	8,258,524	11,789,109
Maintenance deposits	89,019	89,019	89,019	89,019
Sundry creditors	1,935,869	1,690,183	1,935,869	1,690,183
Accruals for unconsumed				
leave	4,038,213	3,695,314	4,038,213	3,695,314
Accruals for operating				
expenses	18,623,591	12,868,173	18,607,017	12,850,166
Accruals for the purchase of property, plant and				
equipment	2,519,727	2,293,050	2,519,727	2,293,050
Security/tender deposits	18,069,992	16,352,440	18,069,992	16,352,440
Scholarships	3,056,440	2,647,618	3,056,440	2,647,618
Total other payables and				
accruals	56,591,375	51,424,906	56,574,801	51,406,899
Add: Trade payables Less: Accruals for	5,456,153	7,552,889	5,856,153	7,552,856
unconsumed leave	(4,038,213)	(3,695,314)	(4,038,213)	(3,695,314)
Less: GST payable	(1,220,576)	(1,388,698)	(1,220,576)	(1,388,698)
Total financial liabilities carried at amortised costs	56,788,739	53,893,783	57,172,165	53,875,743

### Building and Construction Authority and its subsidiaries

## Notes to the financial statements For the financial year ended 31 March 2017

## 14. Other payables and accruals (continued)

Trade payables, other payables and accruals are denominated in Singapore Dollar.

The amounts due to MND mainly pertain to the amounts collected on their behalf by the Authority for certain projects which the Group acts as an agent and other non-trade payables. These balances are unsecured, interest-free, repayable on demand and are to be settled in cash.

Sundry creditors are non-interest bearing and normally have an average term of six months.

Included in security/tender deposits is an amount of S\$15,327,079 (2015/2016: S\$14,182,094) collected under the Green Mark Gross Floor Area Incentive Scheme.

### 15. Provisions

#### (a) Provision for pension costs

	Group and	Authority
	2016/2017	2015/2016
	S\$	S\$
At 1 April	6,131,475	8,082,937
Add: Amount provided during the year (Note 6)	502,303	434,848
	,	,
	6,633,778	8,517,785
Less:	-,, -	-,-,-,
Pension paid during the year	(1,290,708)	(2,386,310)
Pension accrued during the year	(738,504)	· · · · · ·
0, 1		
At 31 March	4,604,566	6,131,475
	, ,	<i>, ,</i>
Represented by:		
Current	559,629	2,283,336
Non-current	4,044,937	3,848,139
	4 00 4 500	0.404.475
	4,604,566	6,131,475

The above provision includes the provision for pension costs for 13 (2015/2016: 12) pensioners who have exercised the option for reduced pension with gratuity payment under the pension scheme other than CPF. There are also currently 3 (2015/2016: 7) employees of the Group who have not exercised any pension options under the pension scheme. The pension amount to be paid to each employee upon retirement under the pension scheme is dependent on, among other factors, the number of years of service and the last drawn salary. The total pension costs are shared between the Group and the AGD. The Group is only liable for the pension costs for the period of service completed by the employee with the Group.

The employees are entitled to select one of the following pension options upon retirement:

- (i) Annual pension payments;
- (ii) Reduced pension with gratuity payment; or
- (iii) Lump sum gratuity payment.

BUILDING AND CONSTRUCTION AUTHORITY

# Building and Construction Authority and its subsidiaries

Notes to the financial statements For the financial year ended 31 March 2017

### 15. **Provisions (continued)**

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### (a) **Provision for pension costs (continued)**

The defined retirement benefits obligations due to pensionable officers are determined based on the last drawn salaries of the respective pensionable officers and the pensionable officers' cumulative service period served with the Authority at the time of retirement, assuming that all pensionable officers work till the age of 62 years and have a 40% and 60% probability of choosing the option for reduced pension with gratuity payment and option for lump sum gratuity payment respectively.

The provision has been estimated by management based on the valuation of the pension scheme performed by an independent firm of professional actuaries.

The principal assumptions used by the professional actuaries in determining the pension costs are:

- Discount rate Gratuity : 0.36% per annum
  - Discount rate Pension : 3.20% per annum
  - Expected salary increment : 3.00% per annum
- Mortality rate
- : S0408 Singapore Mortality Table
- Expected retirement age : 62

The sensitivity analysis below has been determined based on reasonably possible changes of each significant assumption on the provision for pension costs as of the end of the reporting period, assuming if all other assumptions were held constant:

		Group and	I Authority	
	2016/2017		2015/20	16
	Increase/		Increase/	
	(Decrease)	S\$	(Decrease)	S\$
Discount rates	+ 25 basis points - 25 basis points	(83,255) 86,814	+ 25 basis points - 25 basis points	(110,863) 115,602
Expected salary increment	+ 0.25% - 0.25%	18,203 (18,084)	+ 0.25% - 0.25%	24,239 (24,081)

## (b) **Provision for reinstatement costs**

Provision for reinstatement cost is the estimated cost of restoring the leased offices to their original states. The amount has been capitalized in the cost of the property, plant and equipment.

	Group and	Authority
	2016/2017	2015/2016
	S\$	S\$
At 1 April	353,337	345,236
Add: Amount provided during the year	8,101	8,101
At 31 March	361,438	353,337
Represented by:		
Non-current	361,438	353,337

Notes to the financial statements For the financial year ended 31 March 2017

advance
<u> </u>
received
Grants
16.

diality received ill auvalice						
Group and Authority	Operating grants 2016/2017 2015/2	g grants 2015/2016	Developm 2016/2017	Development grants 016/2017  2015/2016	То 2016/2017	Total 7 2015/2016
At 1 April Government grants received/receivable Reversal of government grants receivable Reclass to operating grants	5,089,392 51,323,173 -	62,493 59,063,901 5,144,270	121,146 11,409 (5,750) _	5,658,402 11,954 - (5,144,270)	5,210,538 51,334,582 (5,750) -	5,720,895 59,075,855 -
Transfer to deferred capital grants (Note 18)	(116,309)	(174,528)	(73,057)	(392,817)	(189,366)	(567,345)
Transfer to profit or loss	(51,414,651)	(51,414,651) (59,006,744)	(5,577)	(12,123)	(12,123) (51,420,228) (59,018,867)	(59,018,867)
At 31 March	4,881,605	5,089,392	48,171	121,146	4,929,776	5,210,538
Represented by:						
Current Non-current	172,470 4,709,135	297,870 4,791,522	48,171 -	121,146 _	220,641 4,709,135	419,016 4,791,522
	4,881,605	5,089,392	48,171	121,146	4,929,776	5,210,538

# Notes to the financial statements For the financial year ended 31 March 2017

# 17. Provision for contribution to consolidated fund

The Authority is required to make contributions to the Consolidated Fund in accordance with the Statutory Corporations (Contributions to Consolidated Fund) Act, Chapter 319A and in accordance with the Finance Circular Minute No. M5/2005 with effect from 1 April 2004. The contribution is based on a percentage, as decided by the Ministry of Finance, of the net surplus of the Authority for the financial year. The percentage for FY2016/17 is prevailing corporate tax of 17% (2015/2016: 17%).

The total contribution for the year can be reconciled to the total comprehensive income as follows:

	Group and 2016/2017 S\$	Authority 2015/2016 S\$
(Deficit)/surplus of the Authority subject to contribution	(8,687,507)	34,194,231
Contribution at 17% (2015/2016: 17%)	_	5,813,020
Contribution to consolidated fund recognised in profit or loss	_	5,813,020

The Authority is allowed to carry-forward its deficit of S\$8,687,507 to offset against future surplus for the computation of contribution of consolidated fund after 2016/2017.

# 18. Deferred capital grants

	Group and 2016/2017 S\$	Authority 2015/2016 S\$
At 1 April Add: Government grants received/receivable	10,081,710	10,534,759
- Transferred from grants received in advance (Note 16)	189,366	567,345
- Allocation from MND for assets additions in current year	297,875	48,948
- Assets funded from MND Research Fund	_	2,200,000
- Other assets received	634,831	3,001
Less: Amortisation of deferred capital grants	(3,056,484)	(3,272,343)
Less: Adjustment to operating grants	(46,092)	_
At 31 March	8,101,206	10,081,710

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### Building and Construction Authority and its subsidiaries

## Notes to the financial statements For the financial year ended 31 March 2017

### 19. Share capital

-		Group and	Authority	
	2016/2	2017	2015/2	016
	No. of shares	S\$	No. of shares	S\$
Group and Authority 1 April/31 March	1,000	1,000	1,000	1,000

The shares are held by the Ministry of Finance, a body corporate incorporated by the Minister for Finance (Incorporation) Act (Chapter 183).

The holders of these shares are entitled to receive dividends as and when declared by the Authority. These shares carry neither voting rights nor par value.

## 20. Capital account

The Capital Account comprises the carrying amount of property, plant and equipment transferred from the former Building Control Division of the Public Works Department and the net value of assets and liabilities transferred from the former Construction Industry Development Board when the Authority was established on 1 April 1999.

### 21. Net assets of trust and agency funds

The trust and agency funds comprise 18 funds (2015/2016: 17 funds) managed by the Authority on behalf of other agencies.

The following funds were set up using grants provided by the Ministry of National Development:

(a) MND Research Fund

The MND Research Fund provides support for applied Research and Development projects to raise the quality of life in Singapore. The Authority is both the administrator and a recipient of the MND Research Fund.

#### (b) Accessibility Fund

The Accessibility Fund provides support to private building owners to provide basic accessibility features in their buildings.

(c) Green Mark Incentive Scheme (New Buildings)

The Green Mark Incentive Scheme (New Buildings) provides support to private developers and owners to attain higher Green Mark ratings for their developments by adopting Green Building technologies in new construction projects.

### (d) Green Mark Incentive Scheme (Existing Buildings)

The Green Mark Incentive Scheme (Existing Buildings) provides support to private developers and building owners to improve energy efficiency of their existing buildings.

Notes to the financial statements For the financial year ended 31 March 2017

### 21. Net assets of trust and agency funds (continued)

### (e) Green Mark Incentive Scheme (Design Prototype)

The Green Mark Incentive Scheme (Design Prototype) supports efforts invested into the design stage of green buildings to achieve higher energy efficiency.

## (f) Green Mark Incentive Scheme (Existing Buildings and Premises)

The Green Mark Incentive Scheme (Existing Buildings and Premises) provides support to SME building owners and tenants to embark on environmental sustainability and improve energy efficiency (EE) standards of their buildings and premises.

### (g) Sustainable Construction Capability Development Fund

The Sustainable Construction Capability Development Fund supports capabilities development in delivering sustainable materials and adopting sustainable construction methods.

### (h) Building Retrofit Energy Efficiency Financing Scheme

The Building Retrofit Energy Efficiency Financing Scheme provides financial assistance to the less financially strong building owners, MCST and Energy Services Companies to carry out building retrofits.

The following fund was granted by the Productivity Fund Administration Board:

## *(i)* Construction Productivity and Capability Fund

The Construction Productivity and Capability Fund aims to steer the construction sector towards higher productivity and enhanced capability in complex civil engineering and complex building projects.

### (j) SkillsFuture Study Awards for Built Environment Sector

The SkillsFuture Study Awards aims to equip early to mid-career Singaporeans with the skills needed for quality jobs, by encouraging them to develop and deepen specialised skills in areas of demand required by future economic growth sectors.

The following funds were granted by the SkillsFuture Singapore Agency with the aim to meet the long term requirements of the building and construction industry for different groups of professionals:

## (k) SMU-BCA Advanced Management Programme Course Fee Grant

The SMU-BCA Advanced Management Programme Course Fee Grant provides support to firms to develop strategic management capabilities of senior executives to build sustainable competitive advantages for their firms.

### Building and Construction Authority and its subsidiaries

Notes to the financial statements For the financial year ended 31 March 2017

### 21. Net assets of trust and agency funds (continued)

(I) Workplace Safety and Health Professionals Workforce Skills Qualifications Framework Grant

The Workplace Safety and Health (WSH) Professionals Workforce Skills Qualifications (WSQ) Framework Grant aims to build a pool of skilled workers to meet the long term requirements of the WSH professionals. The Grant offers Training and Assessment and Assessment-Only-Pathway, which leads to qualifications under the WSQ system.

#### (m) Professional Conversion Programme for Sustainable Design Consultants Grant

The Professional Conversion Programme for Sustainable Design Consultants Grant provides support to firms to build up their expertise and capabilities in green building design.

### (n) Core Plus Programme Grant

The CORE Plus Programme Grant aims to train a pipeline of skilled construction tradesmen who are looking to upgrade their skills or considering a career in the construction and built environment industry.

### (o) CORE Plus + Programme Grant

The CORE Plus + Programme Grant aims to train a pipeline of skilled construction tradesmen who are looking to upgrade their skills or considering a career in the construction and built environment industry.

The following fund was set up using grants provided by Ministry of National Development and Sino-Singapore Tianjin Eco-City Administrative Committee (ECAC):

### (p) MND-ECAC Research Fund

The MND-ECAC Research Fund supports green building research and development projects between Singapore and China in the Sino-Singapore Tianjin Eco-City.

The following fund was set up using grants provided by the National Research Fund:

(q) Energy Innovation Research Programme for Building Energy Efficiency Grant

The Energy Innovation Research Programme for Building Energy Efficiency Grant is meant for the administration and managing of the Energy Innovation Research Programme (EIRP) funding in the area of Building Energy Efficiency and to champion and coordinate green building R&D.

### (r) Green Buildings Innovation Cluster

The Green Buildings Innovation Cluster aims to accelerate commercialisation of promising building energy-efficient technologies and solutions, and bring them closer to market adoption.

## Notes to the financial statements For the financial year ended 31 March 2017

# 21. Net assets of trust and agency funds (continued)

Details of the trust and agency funds are set out below and have been prepared from the records of the trust and agency funds and reflect only transactions handled by the Group and the Authority:

	Group and Authority 2016/2017 2015/2016	
	S\$	S\$
At 1 April	17,968,408	20,057,093
Add: Receipts Grants received	123,987,805	90,737,768
Interest income Others	101,646 74,852	39,055 49,568
	124,164,303	90,826,391
Less: Disbursements Grants disbursed to		
- External Parties	(103,780,979)	(82,950,625)
<ul> <li>The Authority Secretariat fee paid to the Authority</li> </ul>	(4,942,953) (7,697,830)	(2,533,024) (7,428,467)
Amounts paid as bank charges	(5,036)	(2,960)
	(116,426,798)	(92,915,076)
At 31 March	25,705,913	17,968,408
Represented by:		
Cash at bank	22,770,259	8,904,685
Cash with AGD	2,935,654	9,063,723
Total cash representing net assets as at 31 March	25,705,913	17,968,408

## 22. Commitment

# (a) Operating lease commitments - as lessee

Non-cancellable operating lease rentals are payable as follows:

	Group and	Group and Authority	
	2016/2017	2015/2016	
	S\$	S\$	
Within one year	48,723,054	72,387,569	
Between one year and five years	44,540,256	49,793,736	
More than five years	60,271,220	65,834,285	
	153,534,530	188,015,590	

## Building and Construction Authority and its subsidiaries

## 22. Commitment (continued)

## (a) Operating lease commitments - as lessee (continued)

Details of the leases are as follows:

(1) Foreign workers' dormitories

The Group leases a number of dormitories under operating leases. The leases typically run for a period of 3 years, with an option to renew the lease after that date. The leases are sublet by the Group to external parties. The lease and sublease expires in between 2017 to 2019.

(2) Integrated Construction and Precast Hubs

The Group leases land for the development of the Integrated Construction and Precast Hubs to the precast industry. The lease is sublet by the Group to external parties. The lease runs for a period of 30 years and expires in 2043.

(3) Ready-Mix Concrete Sites

The Group leases the site for the construction, management and operation of the Ready-Mix concrete (RMC) batching plant to the industry. The site is sublet by the Group to the external parties. The lease runs for 3 years and expires in 2019.

(4) Approved Training and Testing Centre

The Group leases land to the industry to set up and operate the training facility for crane operation courses. The lease runs for a period of 3 years.

(5) Office

The Group leases its office/storage space under operating lease for a period of 5 years, with an option to renew the lease after the date.

During the financial year ended 31 March 2017, the Group recognised the following operating lease expenses in the consolidated statement of comprehensive income:

	Group and Authority	
	2016/2017	2015/2016
	S\$	S\$
Foreign workers' dormitories	77,749,607	86,238,651
Integrated Construction and Precast Hubs	3,170,480	2,308,695
Ready-Mix Concrete Sites	919,103	_
Approved Training and Testing Centre	465,731	465,731
Office	7,634,842	7,654,591
Rental of IT equipment	715,970	682,276
Total	90,655,733	97,349,944

BUILDING AND CONSTRUCTION AUTHORITY

# Building and Construction Authority and its subsidiaries

# Notes to the financial statements For the financial year ended 31 March 2017

## 22. Commitment (continued)

### (b) Operating lease commitments - as lessor

The Group leases out the foreign workers' dormitories held under operating leases. The Group also leases out the land for the development of the Integrated Construction and Precast Hubs, Approved Training and Testing Centre and RMC Sites. The future minimum income receivables under non-cancellable leases are as follows:

	Group and 2016/2017 S\$	1 Authority 2015/2016 S\$
Within one year Between one year and five years More than five years	43,145,504 33,762,212 61,996,845	67,738,550 30,717,323 67,642,408
	138,904,561	166,098,281

During the financial year ended 31 March 2017, the Group recognised the following operating lease income in the consolidated statement of comprehensive income:

	Group and 2016/2017 S\$	Authority 2015/2016 S\$
Foreign workers' dormitories Integrated Construction and Precast Hubs Ready-Mix Concrete Sites Approved Training and Testing Centre	77,749,607 2,910,478 918,729 465,731	86,254,806 2,021,221 _ 465,731
Total	82,044,545	88,741,758

## (c) Capital commitments

Capital expenditure approved by the Group but not provided for in the financial statements is as follows:

	Group and 2016/2017 S\$	Authority 2015/2016 S\$
Amount approved and committed	1,972,655	6,097,823
Amount approved but not committed	94,617,105	124,000

## (d) Other commitments

The Authority had committed to provide a fund of S\$2,800,000 to BCA Centre for Sustainable Buildings Ltd (the "subsidiary") as funding of the operational cost of the subsidiary from the financial years ended 2013 to 2019. As at 31 March 2017, S\$1,200,000 (2015/2016: S\$1,600,000) has not been drawn down by the subsidiary.

### Building and Construction Authority and its subsidiaries

## Notes to the financial statements For the financial year ended 31 March 2017

### 23. Related party transactions

In addition to the related party information disclosed elsewhere in the financial statements, significant transactions between the Group and related parties took place at terms agreed between the parties during the financial year. The balances are unsecured, interest-free, repayable on demand and to be settled in cash, unless otherwise stated.

### Transactions with government-related entities

The Singapore Government has control over the Authority, as well as Ministries, Organs of States and other Statutory Boards.

### Collectively, but not individually significant transactions

The Authority is a Statutory Board under the Ministry of National Development ("MND"), championing the development of an excellent built environment for Singapore. "Built environment" refers to buildings, structures and infrastructure in our surroundings that provide the setting for the community's activities.

The Authority charges fees for the services provided. Collectively, income generated from the fees received from and provision of training and other services to Ministries, Organs of States and other Statutory Boards constitute 9% (2015/2016: 8%) of the total operating income. Purchase of supplies and services from Ministries, Organs of States and other Statutory Boards constitute 32% (2015/2016: 35%) of the total operating expenditure.

These transactions are conducted in the ordinary course of the Authority's business on terms comparable to those with other entities that are not government-related.

### Transactions with other related parties

During the financial year, the Group entered into the following transactions with related parties (i.e. entities in which the Board members have control or joint control) which are not government-related entities:

Group and Authority	
2016/2017	2015/2016
S\$	S\$
10,704	8,692
488,301	820,587
561,893	388,134
131,830	443,156
(28,136)	(35,986)
(312,352)	(296,642)
_	(12,000)
	<b>2016/2017</b> S\$ 10,704 488,301 561,893 131,830 (28,136)

## Notes to the financial statements For the financial year ended 31 March 2017

## 23. Related party transactions (continued)

### Transactions with key management personnel

Key management personnel of the Group are those persons having the authority and responsibility for planning, directing and controlling the activities of the entity. The Board members and executive key management are considered as key management personnel of the Group.

The compensation to key management personnel is as follows:

	Group and 2016/2017 S\$	Authority 2015/2016 S\$
Short-term benefits CPF contributions Post-employment benefits	7,082,755 299,047 –	6,371,567 219,628 889,469
Total	7,381,802	7,480,664

## 24. Fair values of financial instruments

The fair value of a financial instrument is the amount at which the instrument could be exchanged or settled between knowledgeable and willing parties in an arm's length transaction, other than in a forced or liquidation sale.

### Financial instruments whose carrying amount approximates fair value

Management has determined that the carrying amounts of trade and other receivables, amounts due from its subsidiaries, cash and bank balances, trade and other payables reasonably approximate their fair values because these are mostly short-term in nature. The carrying amounts of the fixed deposits approximate their fair value as the implicit interest rate are based on the prevailing market interest rate.

### Building and Construction Authority and its subsidiaries

## Notes to the financial statements For the financial year ended 31 March 2017

### 25. Financial risk management objectives and policies

The Group and the Authority are exposed to financial risks arising from its operations and the use of financial instruments. The Group has documented financial risk management policies. These policies set out the Group's overall business strategies and its risk management philosophy. The Group's overall financial risk management programme seeks to minimise potential adverse effects of the financial performance of the Group. Such written policies are reviewed annually by the management and periodic reviews are undertaken to ensure that the Group's policy guidelines are complied with. The key financial risks arising from the Group's financial instruments are liquidity risk and credit risk.

The Group does not hold or issue derivative financial instruments for trading purposes. The board reviews and agrees policies for managing each of these risks and they are summarised below:

### Liquidity risk

Liquidity risk is the risk that the Group will encounter difficulty in meeting financial obligations due to shortage of funds. The Group's exposure to liquidity risk arises primarily from mismatches of the maturities of financial assets and liabilities. The Group manages the liquidity risk by maintaining sufficient cash and cash equivalents to enable them to meet their normal operating commitments.

As at 31 March 2017 and 2016, other than the non-current fixed deposits, the financial assets (Total loans and receivable in Note 10 to the financial statements) and financial liabilities (Total financial liabilities carried at amortised cost in Note 14 to the financial statements) have maturity dates of no more than twelve months.

The non-current fixed deposits as at 31 March 2017 have tenors of 18 months (2015/2016: 18 months) and will mature in the year ended 25 September 2018 (2015/2016: 18 September 2017).

#### Credit risk

Credit risk is the risk of loss that may arise on outstanding financial instruments should a counterparty default on its obligations. The Group's and the Authority's exposure to credit risk arise primarily from trade and other receivables. For other financial assets (including cash and cash equivalents), the Group and the Authority minimise credit risk by dealing exclusively with high credit rating counterparties.

Before accepting any new customer, the Group assesses the potential customer's credit quality and defines credit limits by customer. A majority of the Group's receivables that are neither past due nor impaired are credit worthy counterparties with good track record of credit history.

In determining the recoverability of a receivable, the Group considers any change in the credit quality of the receivable from the date credit was initially granted up to the end of the reporting period. If the financial condition of the customers were to deteriorate, the Group would be required to record additional impairment losses. Credit risk is limited due to management's on-going evaluation of the credit worthiness of the Group's customers and given that the majority of the Group's trade receivables are within their expected cash collection cycle.

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# BUILDING AND CONSTRUCTION AUTHORITY

# Building and Construction Authority and its subsidiaries

## Notes to the financial statements For the financial year ended 31 March 2017

# 25. Financial risk management objectives and policies (continued)

## Credit risk (continued)

## Credit risk concentration profile

The Group determines concentration of credit risk by monitoring customer profile of its trade and other receivables on an ongoing basis.

At the end of the financial year, approximately 25% (2015/2016: 22%) of the Group's trade and other receivables were due from 3 (2015/2016: 2) major customers with a total balance of \$\$3,499,305 (2015/2016: \$\$2,801,114) located in Singapore.

## Financial assets that are neither past due nor impaired

Trade and other receivables that are neither past due nor impaired are creditworthy debtors with good payment record with the Authority. Cash and cash equivalents are placed with reputable financial institutions with high credit ratings and no history of default.

## Financial assets that are either past due or impaired

Information regarding financial assets that are either past due or impaired is disclosed in Note 10 to the financial statements.

## 26. Capital management

The capital structure of the Authority consists of share capital, capital account and accumulated surplus. The Authority manages its capital to ensure it will be able to continue as a going concern and in accordance with the Capital Management Framework formulated by the Ministry of Finance. The framework sets out the basis of equity contribution by the Government to the Authority and the principle of dividend distribution to the Government. The Authority's overall strategy remains unchanged from the previous financial year.

## Building and Construction Authority and its subsidiaries

# Notes to the financial statements For the financial year ended 31 March 2017

# 27. Comparative information

Certain reclassifications have been made to the prior year's financial statements to enhance comparability with current year's financial statements. As a result, certain line items have been amended on the statements of comprehensive income to conform to current year's presentation.

The reclassifications made to the statements of comprehensive income for the year ended 31 March 2016 are summarised as follows:

	<b>2015/2016</b> S\$	<b>2015/2016</b> S\$
Statements of Comprehensive Income	As previously stated \$	As reclassified \$
Group		
Operating lease income	86,164,380	88,741,758
Management fee	19,015,342	19,148,200
Other income	17,871,217	15,160,981
Course and programme expenses	(32,921,019)	(30,343,641)
Operating lease expenses	(94,772,566)	(97,349,944)
Authority		
Operating lease income	86,164,380	88,741,758
Management fee	19,015,342	19,148,200
Other income	17,656,801	14,946,565
Course and programme expenses	(32,838,664)	(30,261,286)
Operating lease expenses	(94,772,566)	(97,349,944)

## 28. Authorisation of financial statements for issue

The financial statements of the Authority and its subsidiaries for the year ended 31 March 2017 were authorised for issue by the Board Members of the Authority on 14 July 2017.



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

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