

BETTER Built Environment for All:

Transforming the way we build

ANNUAL REPORT 2023/24



CONTENTS

02

Corporate
Governance

22

BEacon of Industry
Transformation

03

Chairman's
Message

42

BElieving in our People

06

Board
Members

48

Highlights of BCA Awards

08

BCA Organisation
Structure

52

FY2023 Environmental
Sustainability Disclosure

10

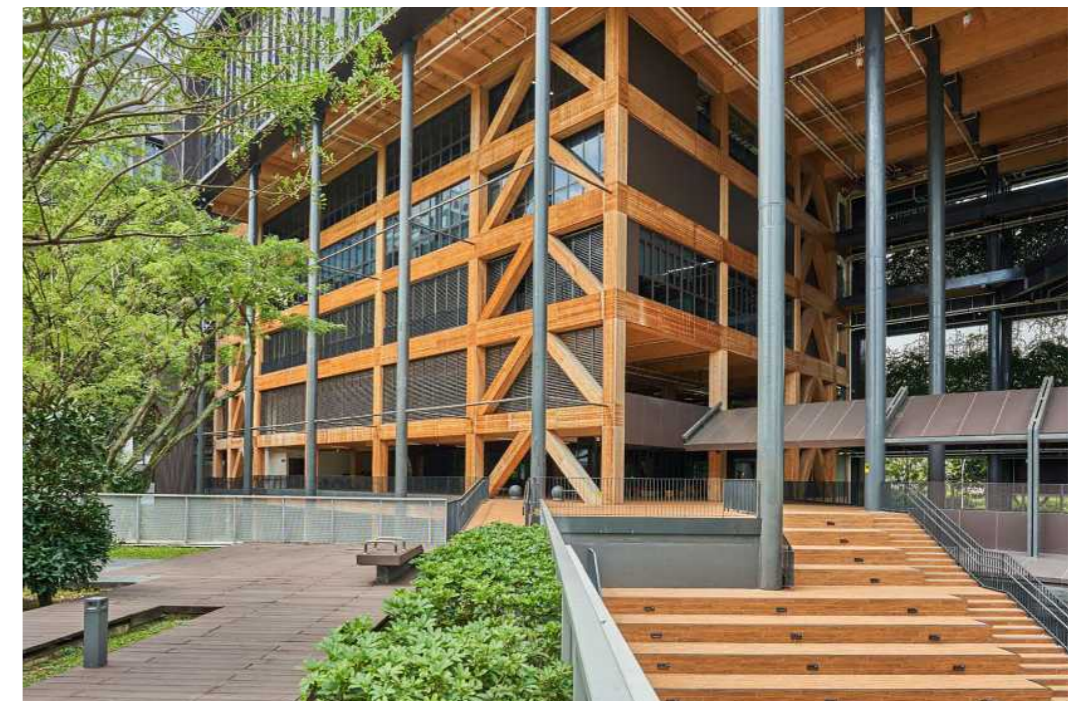
BEtter Builds

72

Financial
Statements

Better Built Environment for All: Transforming the way we build

At BCA, we are constantly exploring new ways to build better. From developing our people to enhancing processes, we collaborate with industry partners to shape a safe, inclusive built environment that embraces the needs of all.



Corporate Governance

BCA is committed to good corporate governance. We have put in place a Code of Corporate Governance which formalises 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 Kelvin Wong, who is BCA's Chief Executive Officer. There is a diverse representation from the industry, academia and ministries, which provides a wide range of experience, skills, knowledge and perspectives to enable the Board to play an active role in guiding BCA to achieve its vision and mission.

The Chairman provides strategic leadership and guidance to the Management of BCA, and ensures that discussions at the Board are fairly, objectively and independently conducted.

The Board meets no less than four times a year to evaluate, approve and monitor the plans and budgets of BCA. It oversees the work and performance of the Management and assesses the financial health of BCA.

The BCA Act empowers the Board to form committees 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 and Risk Committee.

Audit and Risk Committee (ARC)

The ARC reviews the audited financial statements with external auditors, as well as the audit plans and observations of the external and internal auditors. It also ensures that the Management takes appropriate action for audit observations and the ARC's recommendations. The ARC also provides guidance for BCA's Fraud Reporting policy. It also reviews BCA's risk management framework and processes, provides oversight on BCA's identification, assessment and monitoring of key risks including safety, financial, operational, and reputational risks and provides counsel on risk related issues for BCA Board's consideration.

Chairman's Message



Industry transformation in the built environment (BE) sector is accelerating, driven by rapid technological advancements, evolving market demands, workforce constraints and an urgent need for sustainable practices. At BCA, we are at the forefront of this transformation, driving progress through digitalisation, embracing new technologies and promoting innovative business models to enhance collaboration and elevate industry practices.

Looking ahead, we will continue to build capabilities to support industry transformation and grow the pipeline of talent for the sector.

FORGING AHEAD WITH TECHNOLOGY AND INNOVATION

Innovation and technology remain at the core of our strategy.

In 2023, we soft launched CORENET X, a pivotal regulatory approval platform designed to foster enhanced collaboration and ensure better project outcomes that benefit the industry. Since then, a total of 33 pilot projects, comprising 23 larger projects above 5,000 square metres, have come on board CORENET X. We are also actively guiding the sector towards integrating smart technologies in inspections. To facilitate adoption, we plan to introduce data standards and guidebooks for Site Management Platforms and 360-degree captures for virtual Temporary Occupation Permit inspections.

Internally, we are refining our processes by aligning prospective technologies with respective needs. For example, in response to the challenges of an ageing building stock and the imperative to maintain safety standards, we have harnessed artificial intelligence to process Periodic Structural Inspection reports more efficiently and effectively. This frees up BCA engineers' time to focus on high-risk cases to ensure the safety of our buildings.



At BCA, we are at the forefront of this transformation, driving progress through digitalisation, embracing new technologies and promoting innovative business models to enhance collaboration and elevate industry practices.

By consistently improving our own technological capability, we hope to bolster the industry's adoption of innovation and technology. We will continue to leverage the Built Environment Innovation Hub launched last year, to showcase innovative technologies and facilitate knowledge transfer to further advance our industry's transformation journey.

ENHANCING PRODUCTIVITY AND COLLABORATION

Over the years, we have been relentless in promoting Design for Manufacturing and Assembly as the default mode of construction in Singapore. We have also made good progress in encouraging a higher level of digitalisation, a crucial driver for the sector's transformation, through the adoption of Integrated Digital Delivery.

To further drive the uptake of productive and innovative technologies, we have introduced various incentives and grants to support the industry's investments. The Productivity Solutions Grant, for example, has already supported over 950 construction and facilities management small and medium enterprises in adopting pre-approved digital solutions.

BCA will continue to promote a collaborative culture within the industry by integrating collaborative principles into industry's standard contracting forms and practices, fostering a more collaborative environment aimed at achieving common project goals. I am pleased to update that the public sector will pilot NEC4 Contract, a collaborative contract form, in three upcoming projects. There are also more than 10 public and private projects that are piloting or committed to piloting the Collaborative Contracting option module.



As we work towards greening 80% of our buildings by 2030, we are also on track to implement the Mandatory Energy Improvement regime for energy-intensive buildings by next year.

ADVANCING TOWARDS A LOW-CARBON BE

In line with Singapore's goal to achieve net zero emissions by 2050, BCA remains dedicated to advancing sustainability efforts and practices in the sector. BCA's Singapore Green Building Masterplan, which is part of the Singapore Green Plan, outlines the strategies and targets to accelerate our advancement towards a low-carbon BE.

The Energy Efficiency Grant, which has recently been extended to the construction sector, is a testament to our commitment, encouraging more construction businesses to embrace green solutions and invest in energy-efficient initiatives. We will continue to seek industry feedback to include and support more construction equipment technologies that will offer tangible benefits to the industry, such as mitigating rising energy costs and enhancing the competitiveness of construction firms.

As we work towards greening 80% of our buildings by 2030, we are also on track to implement the Mandatory Energy Improvement regime for energy-intensive buildings by next year. This initiative will mandate energy audits and the implementation of measures by building owners to reduce energy consumption. We are also exploring research and

innovation to help us achieve 80% energy efficiency in high-rise commercial offices, hotels and mixed development buildings.

Besides championing environmental sustainability for the sector, I am heartened that we also walk the talk in instilling sustainability values for the organisation and employees. One clear demonstration is our BCA Braddell Campus, which is positioned as a living lab and a strong advocate of sustainability through its use of sustainable materials and smart building systems as well as its role in advancing green building capabilities for personnel in the sector. I am glad to note that we are publishing our inaugural sustainability disclosure in this report, providing a comprehensive view of BCA's environmental performance, policies and initiatives for the sector and the organisation.

BUILDING A FUTURE SINGAPORE

As we navigate this evolving landscape, enhancing industry capabilities is crucial for sustaining success. With industry transformation in full swing, we are doubling down on efforts to attract and nurture new talent to shape the future of Singapore's BE.

Our upcoming industry branding campaign aims to foster a deeper appreciation for the sector, in order to attract the next generation of talent, and inspire continued advancement to enhance the living environment for Singaporeans. BCA will work with industry partners to highlight inspiring achievements and success stories.

I extend my gratitude to all our industry partners for their unwavering support and dedication in transforming the BE sector. BCA will continue to focus on driving transformation, boosting productivity, fostering collaboration across the industry, and contributing to the sector's growth and sustainability through the adoption of advanced technologies and innovative practices. Together, let us forge ahead with a steadfast commitment to build a better Singapore for present and future generations.



MR LIM SIM SENG
Chairman



Board Members

(As at 1 April 2024)



CHAIRMAN

Mr Lim Sim Seng
Senior Advisor
DBS Bank Ltd



DEPUTY CHAIRMAN

Er. Prof. Tan Thiam Soon
Institute Professor
Singapore Institute of Technology



BOARD MEMBER

Mr Sathiaseelan Jagateesan
Partner
Allen & Gledhill LLP



BOARD MEMBER

Mr Richard Kuppusamy
Chief Product and Solutions Officer
Podium



BOARD MEMBER

Ms Ameera Ashraf
Partner
WongPartnership LLP



BOARD MEMBER

Ar. Angelene Chan Li Chen
Chairman
DP Architects and
its Group of Companies



BOARD MEMBER

Ms Jasmin Lau
Deputy Secretary (Policy)
Ministry of Health



BOARD MEMBER

Ms Julia Leong
Partner Digital Solutions
Transformation Services Leader
PWC Singapore



BOARD MEMBER

Mr Lee Aik Seng
Managing Director
Obayashi Singapore Private Limited



BOARD MEMBER

Er. Dr. Lee Bee Wah
Group Director
Meinhardt (Singapore) Pte Ltd



BOARD MEMBER

Mr Max Loh Khum Whai
Chartered Accountant



BOARD MEMBER

Mr Khatani Manohar Ramesh
Senior Executive Director
CapitaLand Investment Limited



BOARD MEMBER

Mr Wong Heang Fine
Chairman
SusDev Pte Ltd

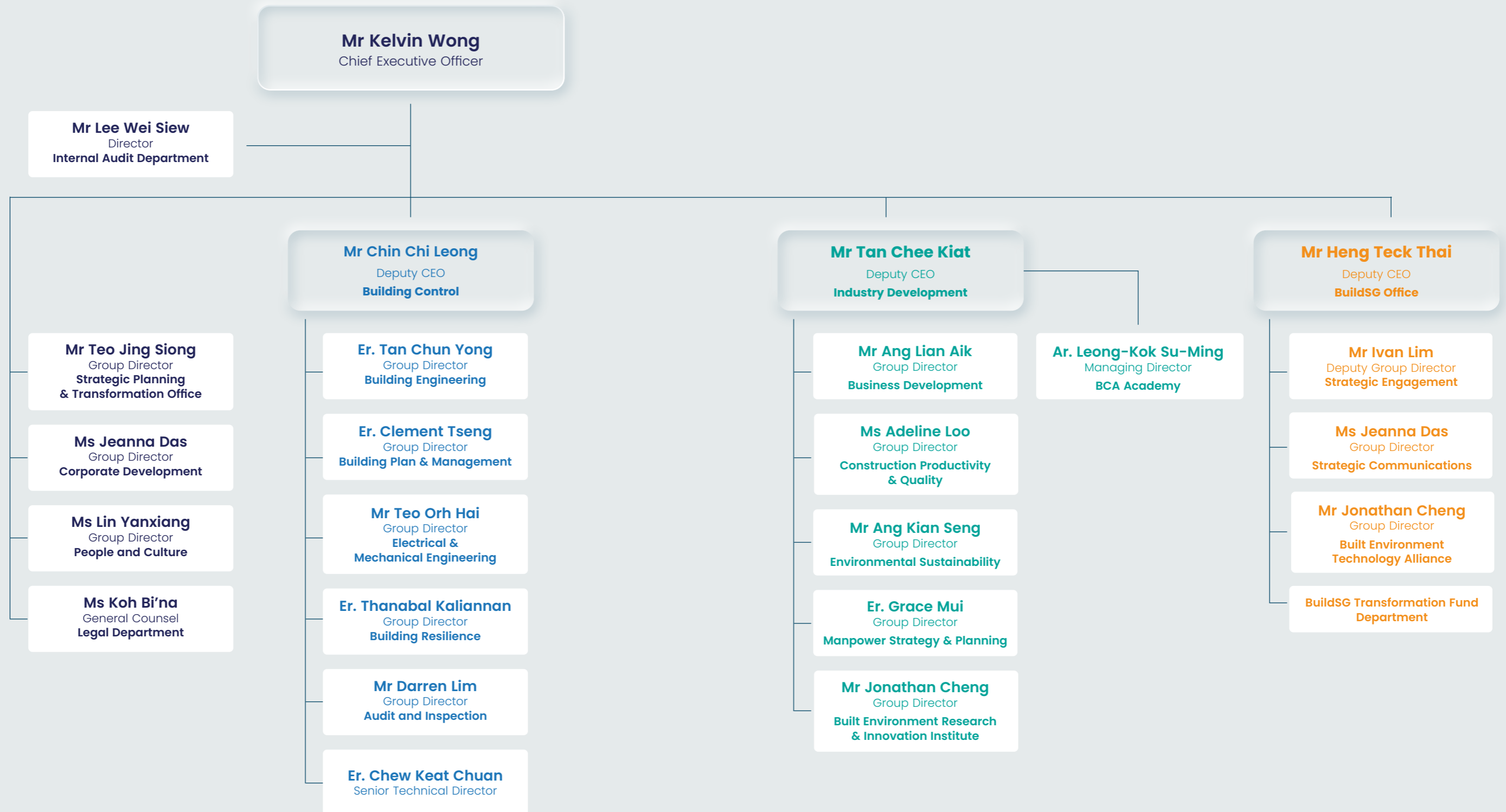


BOARD MEMBER

Mr Kelvin Wong
Chief Executive Officer
Building and Construction Authority

BCA Organisation Structure

(As at 16 September 2024)



BETTER Builds

Improving Safety and Quality Standards



We prioritise safety and enhance quality and accessibility of developments in Singapore through strong industry partnerships and adopting best practices. Our focus is to safeguard the well-being of everyone who lives, works, plays and interacts within these spaces.

BETTER Builds

Improving Safety and Quality Standards



ENHANCING THE REGULATORY APPROVAL PROCESS

CORENET X

The **CORENET X** - a digital platform developed in collaboration with industry partners and government agencies to redesign our regulatory approval process for building works - was soft launched in December 2023. Five pilot projects have successfully obtained milestone approvals within the committed Service Level Agreement for CORENET X. These have helped to validate the new regulatory process and benefits of the platform, while valuable learning points have aided agencies in refining the process.

Change management is a key area of focus to raise overall awareness and industry competency of CORENET X. BCA facilitated industry adaptation to CORENET X through comprehensive training programmes, benefitting over 700 government agency officers and numerous industry professionals.



More than 300 industry leaders from 110 firms attended the second CORENET X Leadership Forum in November 2023.



Click [here](#) to watch and know more about CORENET X.

ENHANCING REMOTE INSPECTIONS AND ASSESSMENTS

Construction Quality Assessment System (CONQUAS®)

BCA developed a framework and procedures for virtual CONQUAS® assessments, specifically for Pull-off Tests for internal wall tiles and Window Watertightness Tests. These innovations allow assessments to be conducted more efficiently, increasing operational flexibility and responsiveness for BCA and the industry.

Virtual and Smart Inspections

A data schema, which is the standardised format for collecting and storing data across various digital platforms, was finalised to facilitate industry adoption of the Site Management Platform (SMP). This enables a seamless flow of data across a construction project's life cycle. BCA then hosted the inaugural Smart Inspection Technologies Seminar and Exhibition to raise industry awareness.



Over 400 industry stakeholders attended the inaugural Smart Inspection Technologies Seminar and exhibition.



11 Solution Providers showcased the functionalities and features of SMP, 360 Capture Technologies and Robotic Solutions focusing on audit and inspection.

BCA is also transforming the current Temporary Occupation Permit (TOP) inspection process to include 360 Capture technology as an alternate form of TOP inspection. We have piloted and conducted virtual TOP inspections with the industry to assess the technology before guidelines and procured solutions for Proof of Concept implementation were developed.



Piloted and conducted **7** virtual TOP inspections



Increased efficiency up to **30%** for TOP inspection process



BCA is transforming the current Temporary Occupation Permit (TOP) inspection process to include 360 Capture technology as an alternate form of TOP inspection.

Furthermore, BCA played a pivotal role in co-chairing the Ministry of National Development (MND) Science & Technology Taskforce, focusing on digitalising the operation processes involved in regulatory and compliance inspections.

To aid BCA officers in conducting and preparing inspection reports more productively, an inspection app was developed to record inspection findings through smart forms and checklists, reducing the time taken for officers to generate and consolidate various inspection reports.



The ongoing Jurong Region Line is one of the complex projects which BCA is monitoring to ensure public safety.

ENSURING SAFETY DURING CONSTRUCTION

Safety of Major and Complex Projects

Given the continuous construction works in a densely built environment and in close proximity to other underground infrastructures, maintaining the safety of these ongoing works is crucial for public safety. Throughout the year, BCA consistently ensured public safety while overseeing plan approvals for numerous significant projects and monitoring ongoing complex projects and deep underground works.

Guides for Use of Alternative Structural Steel

After almost two years of development, the third edition [BCI: 2023 "Design Guide for the Use of Alternative Structural Steel to Eurocode 3"](#) with its accompanying handbook was published and shared in June 2023. This comprehensive guide offers engineers updated and expanded options for using alternative structural steel in their designs, including those based on Korean standards.



Design Guide for the Use of Alternative Structural Steel.

ENSURING SAFETY OF LIFTS AND ESCALATORS

Enhancement of Regulatory Regime

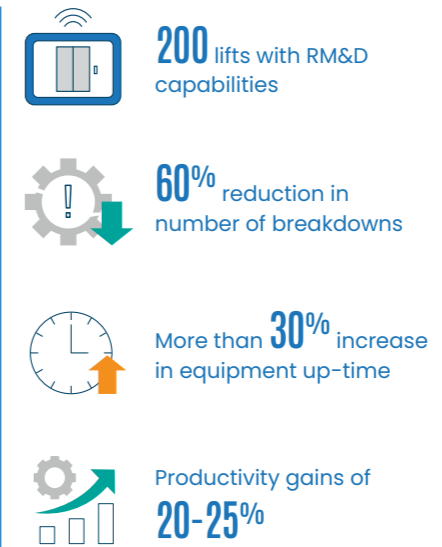
In preparation for the enhancement of the regulatory regime for new lifts and escalators, BCA collaborated with lift owners and contractor firms to trial compliance checks for new lifts and escalators across over 140 sites. Under the enhanced regulatory regime, the design plans for the equipment must be submitted for approval before installation. BCA published a [Building Information Modelling \(BIM\) Guide for Lift Modelling](#) in June 2023 to facilitate such plan submissions in BIM.

The equipment must also pass compliance checks before being allowed to operate. The enhanced regime and compliance checks are expected to help the industry reduce errors and minimise disruptions during the operational stage.

Remote Monitoring and Diagnostics (RM&D)

About 200 lifts equipped with RM&D capabilities have been approved under the regulatory sandbox. This initiative uses sensors and artificial intelligence (AI) for real-time monitoring and diagnosis of lift operations, which enable predictive maintenance and improved lift performance.

To support the adoption of RM&D solutions, BCA published a [guide on outcome-based contracting](#) in January 2024 for lift owners and contractors to consider performance-focused contracts instead of headcount-based and frequency-based ones.



Maintenance Control Plan Guide

To enable building owners to better manage their lifts, BCA released the [Maintenance Control Plan Guide](#) in October 2023. The guide outlines strategies for the lifecycle management of lifts, including modernisation plans for lift systems and conditional assessment of ageing lifts before modernisation.



Lifts equipped with remote monitoring and diagnostics capabilities enabled predictive maintenance and improved lift performance.



More than 50% of the facade inspections using drones are carried out by accredited DSPs since the programme started in July 2023.

UPHOLDING THE SAFETY OF BUILDINGS AND INFRASTRUCTURES

Smart Building Façade Inspections

In collaboration with the Enterprise Singapore, BCA developed and implemented an accreditation programme for Drone Service Providers (DSPs) conducting smart building façade inspections. This programme ensures high-quality and significantly more productive inspections by DSPs using unmanned aircraft systems with AI-enabled defect identification and data management. Since the programme's launch in July 2023, more than 50% of the facade inspections using drones are carried out by accredited DSPs, reflecting better competency in achieving high standards and quality in façade inspections.



The programme for DSPs ensures high-quality and significantly more productive inspections by DSPs using unmanned aircraft systems with AI-enabled defect identification and data management. (Photos credit: Operva AI)

Periodic Structural Inspection (PSI) Reports

BCA leverages AI to process its PSI Reports. The automated report analysis system was developed with a standardised set of criteria to classify building defects with precision and consistency. This helped to achieve around 20% in time savings when processing the reports.

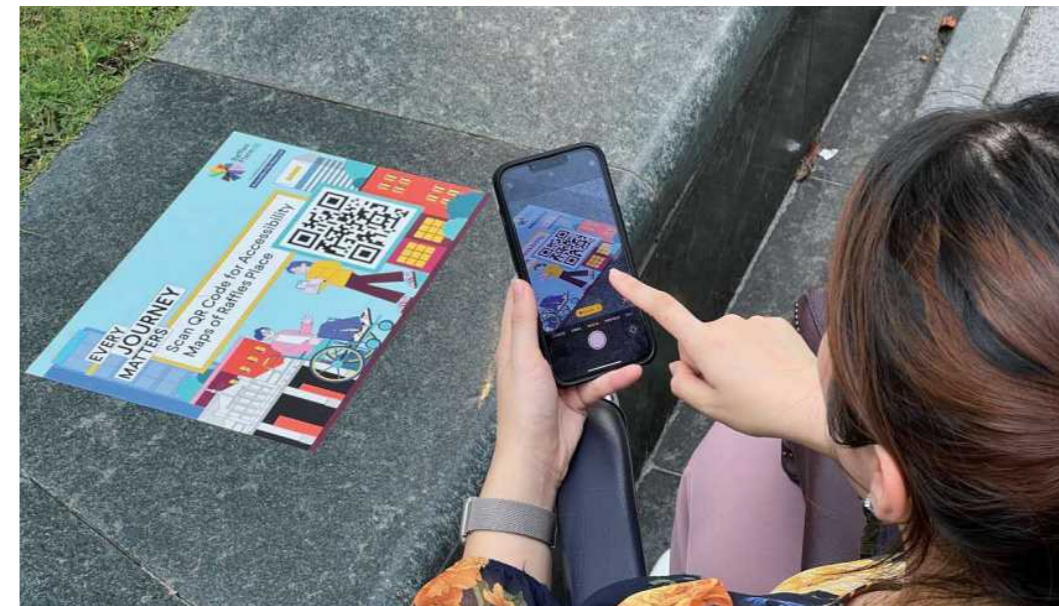
Safety of Foreshore Structures

BCA maintains seven jetties and other foreshore structures at various locations islandwide to ensure they are safe for public enjoyment. A comprehensive maintenance programme is implemented for these foreshore structures, including Changi Beach Park seawall, Kallang Basin vertical wall, Marina South revetment and East Coast Park breakwaters.

SHAPING AN INCLUSIVE BUILT ENVIRONMENT

Accessible City Network (ACN)

The ACN has adopted a community-driven, 3P (Public, Private and People) approach to address accessibility and inter-connectivity challenges. Through collaboration with end-users and government agencies, the ACN community partnership has successfully implemented improvements, including enhanced connectivity between buildings. One notable initiative is the development and rollout of Accessibility Maps for Raffles Place in partnership with the Raffles Place Alliance, significantly improving wayfinding between Raffles Place MRT station and the surrounding buildings.



Users can access the Accessibility Maps for Raffles Place via their mobile device to easily navigate accessible routes within the precinct.

Raffles Place Overall Street Level Accessible Routes

- Sheltered accessible route
- Unsheltered accessible route
- 🚶♿️ Accessible entrance / exit



Map taken from: www.rafflesplace.sg

Universal Design (UD) Index

BCA has begun gathering data on building accessibility through the UD Index framework, which is now available to the public via the [BCA Information Portal](#). The public can review the accessibility features of approximately 250 newly completed buildings and plan their visits accordingly. This UD Index also provides a self-assessment checklist that aids developers and Qualified Persons to integrate UD features into their projects and obtain an indicative measure of the level of user-friendliness. BCA will be working with different stakeholders to promote the portal and accessibility information.



Upgrading Private Residential Estates

BCA managed 24 Estate Upgrading Programme (EUP) projects for private estates on behalf of MND, benefiting around 15,000 households.



Sharing on the Code on Accessibility and Application of UD principles.



The Estate Upgrading Programme aims to incorporate barrier-free accessibility features to enhance connectivity for people of all ages and different mobility needs.

EMPOWERING STRATA COMMUNITIES

E-Learning Course for Management Corporation Strata Title (MCST)

In August 2023, BCA developed and piloted an E-Learning Course, aimed at educating council members on key provisions of the Building Maintenance and Strata Management Act (BMSMA) and their responsibilities in managing their estate. This initiative ensures that they possess a good understanding and fundamental knowledge of their obligations upon joining the council, which mitigates inefficiencies and disputes. Participants found the information valuable and would recommend the course to incoming or returning council members.

Pilot Study on Managing Agents' Performance

A pilot study was conducted to gather inputs from 162 residential MCSTs, regarding the performance of Managing Agents (MAs) and their attributes across various administrative domains. Findings indicated that accredited MA firms and individuals obtained higher scores for service performance.

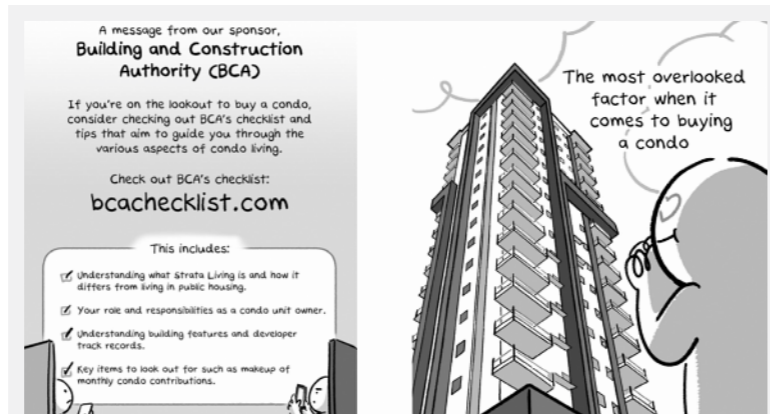
BCA recognises the MA accreditation schemes administered by the Association of Property & Facility Managers (APFM) and the Association of Strata Managers (ASM). Over 700 MA individuals and 36 MA firms have been accredited by either APFM or ASM.

Strata Management Guides

BCA has produced five more Strata Management Guides addressing common issues, such as common property and water seepage. With the complete set of 15 guides in total, they offer detailed explanations of key provisions in the Act and feature examples of best practices in strata management, which serve as valuable references for MCSTs in their decision-making processes.



One of the 15 new Strata Management Guides to help MCSTs understand the key provisions in the BMSMA and adopt good practices of strata management. Click [here](#) to find out more.



BCA's collaboration with The Woke Salaryman on Strata Management achieved an average reach of 200,000 across social media platforms.



Public engagement to clarify MCST concepts and streamline work.

Legislative Updates for Strata Developments

BCA has facilitated two legislative amendments to address the evolving demands of strata owners. The first amendment in the BMSMA pertains to accommodating the installation of electric vehicle charging points in MCST developments and includes the required resolution to be obtained for such installations. The second amendment allows MCSTs the flexibility to conduct general meetings virtually, either fully or partially, alongside in-person meetings.



CONQUAS® Banding

In May 2023, BCA launched the new six-tier CONQUAS® banding system to provide homebuyers with a clearer understanding of the quality performance of developers, builders and private residential projects. About one-third of the banded developers and builders have achieved the highest CONQUAS® Band 1, indicating that these firms consistently deliver projects with no or a very low incidence of major defects. To support the industry in delivering quality homes, BCA has been engaging industry stakeholders regularly to enhance awareness and understanding of building quality standards. One such outreach effort was the BCA-REDAS Seminar on BCA Quality Initiatives to share best practices.

BEacon of Industry Transformation

Driving Productivity, Innovation and Collaboration



Transformation is fundamental to the built environment sector's success. By constantly harnessing new innovations, enhancing our capabilities and improving our processes, we can evolve to do more and do better for our people and community.

BEacon of Industry Transformation

Driving Productivity and Innovation



FOSTERING A VIBRANT COMMUNITY

At the BCA Braddell Campus, BCA officially opened a seven-storey zero-energy building and a 16-storey Super Low Energy (SLE) building, which were constructed using innovative construction methods, sustainable materials, integrated digital planning and smart building systems. The new campus serves as a case study to motivate the industry to adopt collaborative practices, technologies and innovations to achieve stretched benchmarks on their projects.

A new Built Environment Innovation Hub (BEIH) was also established within the campus to foster the sharing of perspectives, expertise and resources among stakeholders as well as collectively testbed solutions. Global firms, including Pinnacle and Dafang AI, have set up innovation centres in the campus to tap into the synergy and drive innovation in the sector.

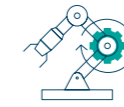


Guest-of-Honour Ms Indraneel Rajah, Minister in the Prime Minister's Office, Second Minister for Finance and Second Minister for National Development (centre, in red) officiated the launch of the Built Environment Innovation Hub.

ADVANCING RESEARCH AND DEVELOPMENT (R&D) AND TECHNOLOGY ADOPTION

Robotics and Automation (R&A) in Construction

In 2023, BCA made significant strides in promoting the adoption of R&A within the built environment (BE) sector. To enhance productivity and safety, BCA partnered with the Singapore Contractors Association Limited (SCAL) to host pivotal events including a dynamic technology exchange and networking session at BCA's BEIH focusing on R&A solutions, as well as a seminar where early adopters shared their experiences and the tangible benefits.



Over **15** R&A solutions implemented in more than 10 projects

Through collaborations with solution providers, BCA's efforts were instrumental in expanding the availability of R&A solutions in Singapore. These included robots for wall skimming and painting, drilling and anchoring, rebar-tying as well as tile grouting, which were deployed at various industrial and residential construction projects.



In June 2023, BCA and the Singapore Contractors Association Limited collaborated to host a technology exchange and networking session at the Built Environment Innovation Hub.

Urban Solutions and Sustainability (USS) R&D Congress

At the 2023 USS R&D Congress, BCA co-led an exhibition comprising 68 academia and solution provider exhibitors. This event provided a platform for academia and solution providers to showcase innovations, fostering knowledge exchange while driving advancements in urban solutions and sustainability.



The exhibition at the 2023 USS R&D Congress provided a platform to showcase innovations, fostering knowledge and driving advancements in urban solutions and sustainability.

Championing R&D of Cutting-Edge Technologies

As part of the Cities of Tomorrow (CoT) Research, Innovation & Enterprise (RIE) 2025 programme, BCA awarded two projects which supported transformation targets for productivity and sustainability. One of the projects focused on integrating R&A technologies to enhance on-site processes, targeting at least a 30% increase in productivity while enhancing safety.

Additionally, BCA launched the third Grant Call under CoT RIE2025, with a budget of \$20.5 million to support innovative urban solutions. This initiative received proposals for an integrated R&A system for the automated fit-out of Prefabricated Prefinished Volumetric Construction and Prefabricated Bathroom Unit modules, and advanced methodologies for enhancing the 3D concrete printing process to produce load-bearing prefabricated components.

Facilitating Trials and Test-bedding

Under the BE Robotics R&D Programme, BCA facilitated trials and test-bedding to refine R&D solutions tailored to industry needs. Notable projects included the remote control excavator trial at BCA Braddell Campus by the Advanced Remanufacturing and Technology Centre and the development of robotic inspection systems for Construction Quality Assessment System (CONQUAS®) and Temporary Occupation Permit (TOP) checks.



Teleoperation of excavator trialled at BCA Braddell Campus' Excavator Yard.

Centres of Innovation (COIs) Supporting Technology Adoption for Small and Medium-Sized Enterprises (SMEs)

BCA supported SMEs in embracing technology through COIs funded by Enterprise Singapore. One example will be the Centre of Innovation for Built Environment - Advanced Materials (COIBE - AM) by Singapore Polytechnic, Republic Polytechnic and Temasek Polytechnic. Among the notable achievements of COIBE - AM is the development of SME ALTO's high strength, fire-rated fiber-reinforced polymer solution, which can strengthen concrete structures by 12% and improve fire resistance by three ratings.

BCA also facilitated the establishment of the Centre of Innovation for Built Environment - Robotics & Automation (COI-BERA) by Ngee Ann Polytechnic and Temasek Polytechnic in August 2023 to help SMEs adopt R&A technologies. These solutions aim to create a competitive advantage for SMEs by, for example, streamlining repetitive tasks and reallocating human resources to more value-added activities.

COIBE-AM, since 2022:

- Delivered approximately **20** innovation projects
- Engaged over **200** SMEs

COI-BERA, since 2023:

- Embarked on **2** innovation projects with SMEs
- Engaged **29** local SMEs

ADVANCING DIGITAL COMPETENCIES AND INTEGRATION IN THE INDUSTRY

Inclusion of Building Information Modelling (BIM) in Tender Documents

Following the launch of BIM Handover Technical Guide and Sample Clauses in 2022 and 2023 respectively, five major government agencies and four private sector clients [i.e. City Developments Limited (CDL), Lendlease, CapitaLand and Hoi Hup] have started piloting the inclusion of BIM as part of their Contract Documents for construction tenders. This move aims to streamline the construction process and enhance project efficiency by reducing reworks from uncoordinated BIM models, reducing effort by consultants to produce an estimated 50 to 100 2D tender drawings, and saving time for contractors by leveraging consultants' BIM models.

Model Content Requirements (MCR)

BCA piloted MCR with stakeholders such as JTC Corporation (JTC), Housing & Development Board (HDB), MOH Holdings, Land Transport Authority (LTA) and Lendlease, following the rollout of the MCR guide in 2023. The initiative

aims to enhance project integration by standardising BIM data, establishing a common language between project stakeholders and facilities management (FM) teams and improving data exchange between project parties. The benefits include reduced effort required for clarification, time savings for model preparation, well-coordinated BIM models with accurate asset information and improved data quality for better analysis and decision making.



The BIM Handover Technical Guide recommends the essential model content and 2D drawings that form part of Contract Documents and provides a set of guidelines for BIM preparation and issuance at construction tender.

Digital Delivery Management (DDM) Accreditation

The DDM accreditation scheme, led by buildingSMART Singapore (bSS), has accredited over 500 BE professionals and enhanced their competencies. BCA played a key role in shaping the DDM framework, aligning it with industry best practices and upcoming regulatory requirements. For example, DDM Tier 4 now includes essential skills such as using Common Data Environment (CDE) for collaboration and issue tracking, exporting models in openBIM format with minimal data loss and making CORENET X submissions.

Through the bSS accreditation body, along with representatives from BCA and the industry as well as eight Institutes of Higher Learning (IHLs), over 900 individuals

are equipped with DDM competencies annually. Key government agencies such as DSTA, HDB, JTC and LTA now recognise DDM Tier 2 and 3 accreditation as an alternative to traditional qualifications in tender specifications.

Productivity Solutions Grant (PSG)

Recognising the importance of accelerating industry transformation among SMEs, BCA introduced a new tranche of the PSG on 1 April 2023. This will help local SMEs enhance their digital capabilities. Since 2020, the PSG scheme has supported over 950 construction and FM SMEs as they embarked on their own digital transformation journey to capitalise on growth opportunities and enhance productivity.



Graduates of Nanyang Polytechnic's Diploma in Architecture class of 2023, with curriculum aligned to the Digital Delivery Management skills framework. (Photo credit: Nanyang Polytechnic)

STRATEGIC PARTNERSHIPS FOR BE INNOVATION ECOSYSTEM

Built Environment Accelerate to Market Programme (BEAMP)

Throughout the year, BCA actively fostered strategic partnerships with the innovation ecosystem in the sector. BCA also expanded the sector's connections with new strategic multipliers, comprising accelerator programmes, venture capitalists and IHLs.

BCA also facilitated industry connections and partnerships, including strategic introductions between firms and innovators as well as the pilot deployments of new technologies.



BCA launched Cycle 5 of the BEAMP in March 2024 to sustain efforts in matching industry stakeholders with a global network of innovators.



Engaged **65** new start-ups and solution providers in strategic partnerships



Established connections with **40** new strategic multipliers



Facilitated around **90** industry connections and **15** resulting partnerships

BCA successfully catalysed close to \$2.5 million in direct industry spending by the end of FY2023, bringing the total industry spending to \$5.9 million since 2020, with a focus on Integrated Planning and Design and Advanced Manufacturing and Assembly. Furthermore, BCA fostered collaborations between start-ups and BE firms through BEAMP, bridging Research & Innovation efforts with market demands by facilitating seven instances of market adoption of new technology.



BEAMP alumnus Fabrica AI secured a commercial contract for their automated floor tile grouting robot to be deployed at a construction project.

To further encourage the development of solutions addressing industry challenges, BCA launched Cycle 5 of the BEAMP in March 2024 to sustain efforts in matching industry stakeholders with a global network of innovators.

Workforce and Collaborative Culture



DEVELOPING A COMPETENT WORKFORCE TO DRIVE TRANSFORMATION

Collaboration to Improve Human Resource (HR) Practices and Capabilities

To enhance workplace and local workforce capabilities, BCA worked to improve HR capabilities by engaging with progressive firms to identify and share good HR practices for talent attraction, development and retention within the BE sector. Insights from these discussions were disseminated at industry events such as the International Built Environment Week (IBEW) and SCAL HR Forum.

Collaborations with SCAL and Institute for Human Resource Professionals (IHRP) were aimed at encouraging firms to adopt the Human Capital Diagnostic Tool (HCDT) assessment to better understand and build up their HR capabilities. In addition, SCAL and IHRP co-developed the HR Guidebook for the BE sector. Comprising infographics, frameworks and case studies, it guides contractors in navigating human capital complexities.



BCA shared findings on good HR practices for talent attraction, development and retention from progressive firms at the SCAL HR Forum.



About **120** firms have participated in the HCDT assessment

Partnership with The Astronauts Collective

In 2023, BCA partnered with a registered charity organisation in Singapore, The Astronauts Collective, dedicated to helping youths from secondary schools to universities explore, pursue and discover meaningful careers. The collaboration comprised four career exploration events including job tasters and networking sessions at Lifelong Learning Institute, ITE and two secondary schools, which attracted about 2,000 participants. Over half of the youths particularly enjoyed the job tasters and networking sessions where they could connect with young professionals.

Through hands-on activities and interaction with BE professionals, students gained insights about the considerations that underpin different job roles within the sector.



Student activities at the "World X" career exploration event held at Lifelong Learning Institute.

Internship Opportunities for Undergraduates

In FY2023, BCA organised two networking sessions for Civil and Environmental Engineering students from the National University of Singapore and Nanyang Technological University (NTU), connecting 120 students with industry practitioners.



The networking sessions gave aspiring BE undergraduates a head start to exploring 130 internship opportunities and future employment prospects, thus helping them make informed decisions about future careers in the BE sector.

Built Environment Scholarships

BCA partnered the Ministry of Education to offer BE scholarships under the Singapore-Industry Scholarship (SgIS) to Singaporean undergraduates keen on working in leading BE organisations, helping progressive firms attract talents and nurture them into future business leaders.



During its inaugural cycle, **13** BE firms awarded **33** scholarships to undergraduates from local universities.



SgIS BE scholarships are offered to Singaporean undergraduates keen on working in leading BE organisations.

iBuildSG BE Formation Programme (iBEFP)

The iBEFP, a four-day industry preparatory programme for interns recommended by the Built Environment SkillsFuture Tripartite (BEST) Taskforce, served about 600 students across 17 sessions in FY2023. The programme, comprising training workshops, hands-on sessions, dialogues and industry sharing masterclasses, was aimed at enhancing participants' understanding of industry transformation and their sense of purpose in joining the BE sector.



Sharing by BE professionals to iBEFP participants in conjunction with the International Built Environment Week 2023.

Programmes for Future Leaders (FL) and Young Leaders (YL)

BCA organised activities to nurture relationships among FL and YL, exposing them to new technologies and deepening their skillsets and knowledge. Learning journeys to sites such as NTU Gaia, Samwoh Smart Hub, Sembcorp Tengah Solar Farm and Singtel Waterfront Theatre offered insights on sustainable materials, passive design and innovative construction methods. Other activities like the BE Retreat and informal chats facilitated the exchange of industry insights and knowledge.



The BE Retreat allowed close to 150 FLs/YLs to develop relationships through team-building activities and gain industry insights from their seniors through a fireside chat.

BuildSG LEAD Summit

In FY2023, BCA continued its commitment to fostering collective stewardship and collaboration across the BE value chain.

BCA also partnered with the industry on diverse LEAD programmes aimed at cultivating leadership at various levels. The LEAD Horizon and Milestone Programmes were curated for emerging leaders and enterprise-level leaders respectively to support the participants' transition to greater leadership roles. These collective efforts have empowered BE leaders to embrace collaboration, drive innovation and accelerate transformation while staying abreast of the latest insights.



The annual BuildSG LEAD Summit was a pivotal platform for the BE leadership community, fostering a shared vision and collective action to propel the sector forward.

BCA Academy as a dedicated Continuing Education and Training (CET) Centre

Working with SkillsFuture Singapore (SSG), BCA Academy has taken on the role as the dedicated CET Centre for the BE sector to strengthen enterprise development and workforce transformation. In collaboration with the industry, the CET Centre supports firms in developing in-demand skills, fostering industry capabilities in emerging areas and providing specialist training for competencies in plant operations and licensed technician roles.

The successful launch of the Integrated Work-Study Diploma (IWSD) programmes underscored the strong partnership with the industry in equipping young talents with broad transformative skillsets, such as Integrated Digital Delivery and sustainability, to prepare them for careers in the BE sector.



In November 2023, BCA Academy celebrated the accomplishments of 695 graduates from 17 programmes.

CET Programmes (2023 stats)

- Over **15,000** personnel across various BE-related fields received training that is aligned with the BCA corporate priorities and BE Industry Transformation Map enablers
- Equipped over **2,600** technical specialists and licensed personnel

IWSD Programmes

- **3** programmes
- Enrolled over **80** aspiring new entrants
- Gained support from **15** progressive firms to co-curate and deliver workplace training

2023 Graduation

- Trained **116** diploma graduates, contributing to the BE talent pool
- **86%** overall employment rate*
- **93%** employment rate for locals*
- **87%** employed, received job offers within 3 months from completion of studies

**full-time employment; 6 months from completion of studies*

Initiatives to Recruit Better Quality Migrant Workers

During the year, BCA worked with Ministry of Manpower, SCAL and industry partners on initiatives to recruit better quality migrant workers in the construction sector. These included:

- a KTC Group pilot to recruit skilled Thai hydraulic excavator operators directly for their Singapore projects; and

- SCAL's Foreign Worker Job Matching programme, which pre-matches employers and workers before the workers undergo skills testing at their source country. SCAL is looking to scale up and automate the matching process to support more firms and workers.



First batch of Hydraulic Excavator Operators trained under the alternative entry pathway at KTC training centre in Thailand.



Video showcasing CDL's partnership with its value chain partners.

FOSTERING A COLLABORATIVE CULTURE FOR TRANSFORMATION

Value-Chain Transformation via Industry-Led Alliances

Progressive developers and sector leaders are actively driving industry transformation by forming strategic alliances with their value chain partners. This collaborative approach enables them to collectively pursue best-in-class transformation outcomes and robust supply chains. For example, CapitaLand Development and CDL implemented a developer-hosted CDE for use among their value chain partners. The CDE serves as a centralised platform providing a single source of truth for key project information and BIM models. It enhances data sharing, improves data consistency and facilitates informed decision making. It is expected to increase productivity by 40% to 50% compared to conventional workflows.

Collaborative and Quality Procurement Practices

As of now, more than 10 public and private sector projects have either piloted or are planning to pilot provisions aimed at fostering collaborative contracting. BCA will continue to drive initiatives to build trust, enhance communication and promote a more balanced sharing of risks among contracting parties in both public and private sectors.

BCA has also enhanced the Quality Fee Method framework used by Government Procuring Entities (GPEs) to evaluate proposals for construction-related consultancy services. The enhancements include piloting a revised fee score formula with a disqualification mechanism to discourage excessively low-fee offers, placing greater emphasis on quality in consultancy tenders and encouraging sustainable bidding behaviour.



CapitaLand Development and alliance partners attending a workshop to align their mindset and approach towards data-driven decision making in their projects.

Supply Chain Efficiency and Optimising Land Use

BCA initiated the development of Integrated Construction Parks (ICPs) in Singapore to enhance construction supply chain efficiency and optimise land use. The first ICP, the Jurong Port Ready-Mixed Concrete (RMC) Ecosystem, commenced operations in FY2023. It integrates components of

the construction supply chain, such as RMC batching plants and aggregate terminals that have handling and storage capabilities, with existing cargo transportation at Jurong Port. This co-location aims to enhance efficiency, achieve economies of scale and reduce costs, fostering a streamlined and sustainable construction ecosystem.





The first ICP, Jurong Port RMC Ecosystem, aims to enhance efficiency, achieve economies of scale and reduce cost. (Photo credit: Jurong Port)

Singapore Firms' Global Presence

BCA collaborated with Singapore's BE firms on designing for Green Mark certification for their overseas projects, including meeting SLE standards. This has strengthened the branding and international marketability of these firms' capabilities in sustainability design and engineering.

Overseas Green Mark Certifications: 2023 Achievements

- 
3 significant Green Mark projects in the Middle East and Indonesia
- 
First overseas Green Mark for Districts certification for a carbon neutral 100-hectare industrial park in Batam, Tunas Prima Industrial Estate



The Tunas Prima Industrial Estate in Batam has received the first overseas Green Mark for Districts certification for its carbon-neutral industrial park.

TRANSFORMING THE FM SECTOR

Support for the FM Sector

In a joint initiative with JTC, BCA played a pivotal role in driving collaboration and idea exchange within the FM sector through the FM Community of Practice (CoP). Initially focused on engaging GPEs in FM transformation, the CoP now involves the broader industry in relevant sessions, fostering a more inclusive and comprehensive approach to FM implementation issues.

Furthermore, BCA has strategically partnered with the Singapore International Facility Management Association (SIFMA) to professionalise

the FM industry. SIFMA has accredited 35 companies under its Certified FM Company (CFMC) accreditation scheme and 496 FM practitioners under its Certified FM Expert (CFME) accreditation scheme, enhancing sector capabilities.

To support progressive service buyers and FM companies in their transformation, BCA launched the \$30 million Integrated Facilities Management and Aggregated Facilities Management grant in September 2022. BCA conducted a mid-term review in 1Q2024, with the aim of expanding firm participation and catalysing market transformation through more success stories.



BCA and JTC partnered to drive collaboration and idea exchange within the FM sector through the FM Community of Practice.

Design for Maintainability (DfM) and Smart FM

Under BCA's Green Mark 2021, building projects are assessed on DfM and adoption of Smart FM technologies under the Maintainability and Intelligence sections respectively. Badges are awarded for meeting the respective criteria.

For example, the Dulwich College (Singapore), a Green Mark Platinum Zero Energy building, attained badges for Intelligence, Health and Wellbeing, and Maintainability.

As of March 2024,

-  **11** projects have been awarded the Maintainability Badge
-  **6** projects have been awarded the Intelligence Badge



The Dulwich College (Singapore) demonstrated good DfM and incorporated smart features from the design stage, such as an Integrated FM platform with a unified dashboard for asset performance and operations.

BElieving in Our People



Our people are the heart of our work as we constantly push the boundaries of innovation and excellence in the built environment. We deeply value and recognise their contributions, which shape how we live, work and play today and in the future. At the same time, we are committed to enhancing people's capabilities and fostering social responsibility.

BElieving in Our People



CULTIVATING A FULFILLING WORK ENVIRONMENT AND WORKFORCE

By investing in comprehensive training programmes, fostering a culture of continuous learning and equipping our teams with cutting-edge skills, we ensure that they are empowered to excel in their roles. Through their expertise and commitment, we continue to lead the way in transforming Singapore's Built Environment (BE).

Employee Engagement

At BCA, our people are our greatest asset. We made a concerted effort to listen to our staff and address their needs, while introducing targeted initiatives aimed at enhancing employee well-being and career development. These included nominating wellness ambassadors, implementing ONE BCA Career Development Initiatives and BCA's Specialist Functional Competency Programme. Through various employee engagement platforms, such as townhalls and tea sessions with senior management, BCA worked to continually improve communication, collaboration and overall job satisfaction within the organisation.

Developing Future-Ready Digital Skills

BCA initiated its inaugural Hackathon and launched several design-thinking workshops in FY2023 to foster an innovative culture. Over 200 officers benefitted from the workshops and more than 50 solutions were surfaced. To further drive digitalisation, BCA established a training programme to equip nominated users with deeper digital and technology skills to co-create solutions with their stakeholders.

BCA also set up Robotic Process Automation (RPA) infrastructure and a Central Operations team to pursue RPA more effectively.



Engaging employees: BCA organised tea sessions between employees and senior management.



Innovating together: Participants explored creative solutions during BCA's inaugural Hackathon.

RECOGNITION FOR BCA'S ACHIEVEMENTS AND PROJECTS

In FY2023, BCA received the following awards in recognition of our efforts to pursue excellence and transformation through our initiatives and organisational practices.

Public Sector Transformation Awards 2023 - One Public Service Award

- National Effort to Electrify Singapore's Vehicle Population

Public Sector Transformation Awards 2023 - Regulatory Excellence Award



- Driving the Adoption of Remote Monitoring and Diagnostics (RM&D) Solutions in Lifts through a Regulatory Sandbox and the World's First RM&D Standard
- Green Economy Regulatory Initiative
- Review of Technical Requirements for Storey Shelters

Public Sector Transformation Awards 2023 - Exemplary SkillsFuture @ Public Service Award

- Zhang Yanrong

MND Minister's (Team) Award 2023

- Driving the Adoption of Remote Monitoring and Diagnostics (RM&D) Solutions in Lifts through a Regulatory Sandbox and the World's First RM&D Standard
- Phase 2 Intensification Project at BCA Braddell Campus



Pro-Enterprise Transformation Award - Gold

- Driving the Adoption of Remote Monitoring and Diagnostics Solutions in Lifts





Staff volunteered at the Singapore Association of the Visually Handicapped.

COMMITMENT TO CORPORATE SOCIAL RESPONSIBILITY (CSR)

Inspired by our core value, *We Care*, we take pride in every contribution as we serve with our hearts for the good of the community and shape an inclusive society. To achieve this, BCA has been inculcating a spirit of volunteerism among staff and organising purposeful programmes that help to foster an inclusive environment.

BCA staff also initiated collaborations with organisations and contributed positively to society.



Staff participated in tree planting for the OneMillion Trees Movement.



BCA volunteers hosted a charity bazaar to raise funds for the Singapore Association of the Visually Handicapped.



BCA staff volunteered at Food from the Heart.



BCA staff volunteered with Project Dignity, engaging in activities to experience the daily lives of individuals with visual impairment.

Highlights of BCA Awards 2023

The BCA Awards celebrate excellence in Singapore's BE sector, recognising outstanding projects, professionals and firms that exemplify innovation, sustainability, safety and quality. They underscore the industry's commitment and continued pursuit of excellence for leadership and best practices in building a resilient, inclusive and future-ready Singapore. The BCA Awards are a testament to our ongoing effort to shape a safe, sustainable and inspiring urban landscape for generations to come.



The three winners of BCA's Design and Engineering Safety Award, with Mr Desmond Lee, Minister for National Development and Minister-in-charge of Social Services Integration and BCA's CEO Mr Kelvin Wong.

Design and Engineering Safety Award (DESA)

Recognising Professional Engineers and their teams for applying innovative designs and engineering solutions in challenging projects, the 2023 edition of BCA's DESA was conferred to three Professional Engineers and their respective projects:



lyf one-north Singapore

PROFESSIONAL ENGINEER Teoh Eng Sin

lyf one-north Singapore features a three-storey-high link bridge engineered with innovative steel plate girders and slanted columns, thus ensuring unobstructed views and a ventilated corridor. Simultaneously, safety and structural integrity had to be maintained amidst site challenges such as a sloping terrain and close proximity to MRT tunnels.



Kallang Polyclinic and Long-Term Care

PROFESSIONAL ENGINEER Lim Keong Liam

Kallang Polyclinic and Long-Term Care is a healthcare facility featuring innovative Design for Manufacturing and Assembly techniques and lightweight steel Prefabricated Prefinished Volumetric Construction to overcome space constraints, achieving seamless connectivity with a construction duration of within 26 months.



Whistler Grand

PROFESSIONAL ENGINEER Heng Kim Huat

Whistler Grand showcases innovative Prefabricated Prefinished Volumetric Construction and a patented Composite Shear Wall System, ensuring space efficiency and seamless execution through early collaboration with the builder and advanced heavy-duty crane hoisting solutions.

Universal Design Excellence Award (UDEA)

Three projects won BCA's UDEA in 2023 for the implementation of Universal Design and innovations in user-friendly designs.



Bird Paradise & Mandai Wildlife West

DEVELOPER Mandai Wildlife Group **ARCHITECT** RSP Architects Planners & Engineers (Pte) Ltd

For Bird Paradise, adopting Universal Design principles and thinking were important considerations from the start, with its three guiding principles of inclusion, sustainability and integration.



Changi Airport Terminal 2 Expansion

DEVELOPER Changi Airport Group (Singapore) Pte Ltd **ARCHITECT** RSP Architects Planners & Engineers (Pte) Ltd

The project team for the expansion of Changi Airport Terminal 2 strived to upgrade the terminal to meet the evolving needs of passengers and visitors.



One Punggol

DEVELOPER People's Association **ARCHITECT** DP Architects Pte Ltd

As the first completed development within the civic and community district in Punggol, One Punggol houses various amenities in a single convenient location.



The National Cancer Centre Singapore was the sole winner of the 2023 BCA Built Environment Transformation Award.

Built Environment Transformation Award

The National Cancer Centre Singapore (NCCS), owned by MOH Holdings was the sole winner of the 2023 BCA Built Environment Transformation Award. The award honours projects that demonstrate exceptional industry transformation in productivity, digitalisation, sustainability and collaboration. The project completed four complex basements in just 25 months, with notable aspects including Strong Value Chain Collaboration, Digital Technology Integration and Advanced Construction Methods.

Quality Excellence Award

Three developers and three builders received BCA's Quality Excellence Award for consistently delivering high quality private residential buildings, achieving an average CONQUAS® performance of Band 1 in 2022 based on their track records between 2017 and 2022.

DEVELOPERS

 **Allgreen Properties Limited**

 **City Developments Limited**

 **CSC Land Group (Singapore) Pte. Ltd.**

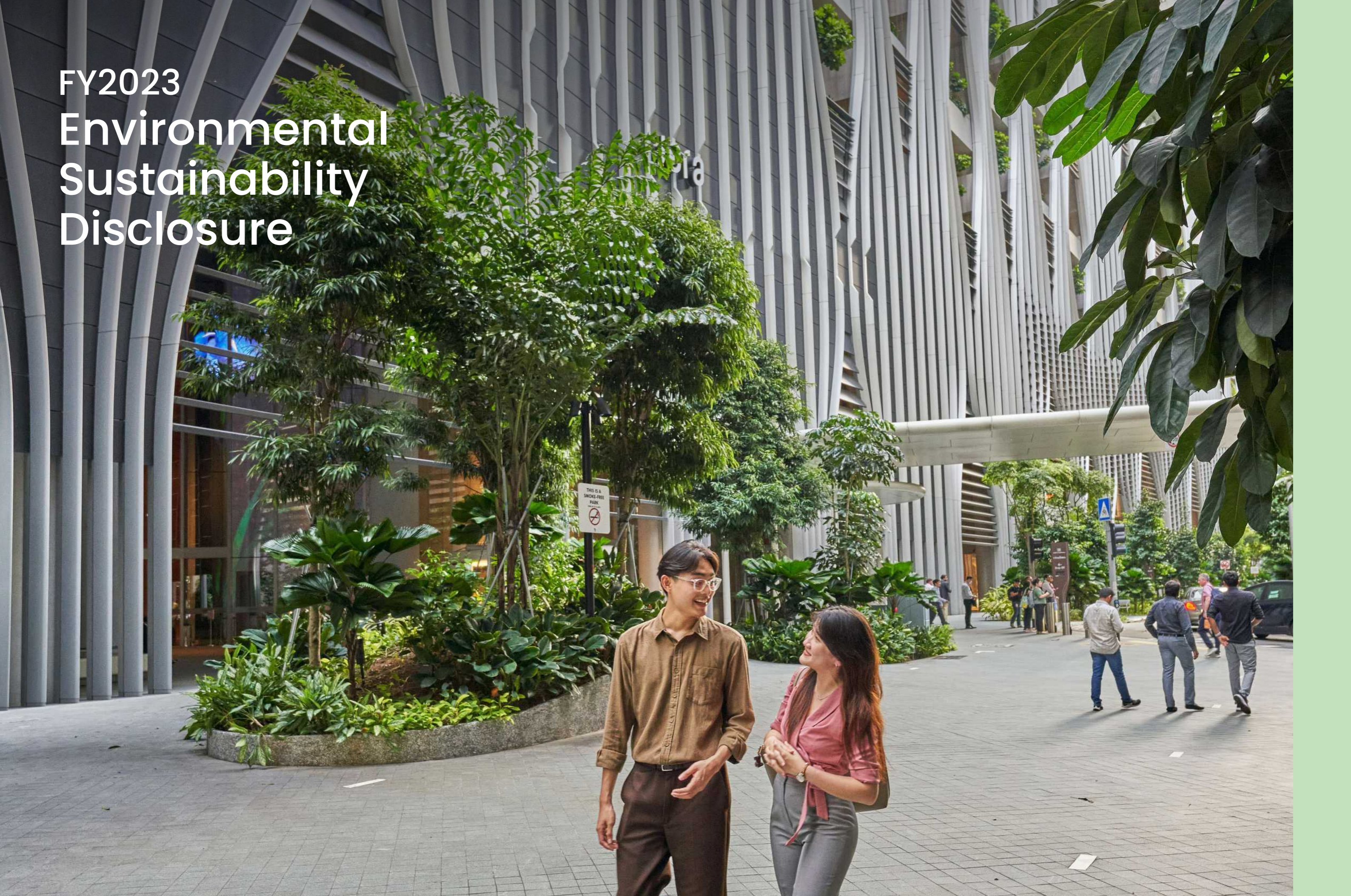
BUILDERS

 **TPS Construction Pte. Ltd.**

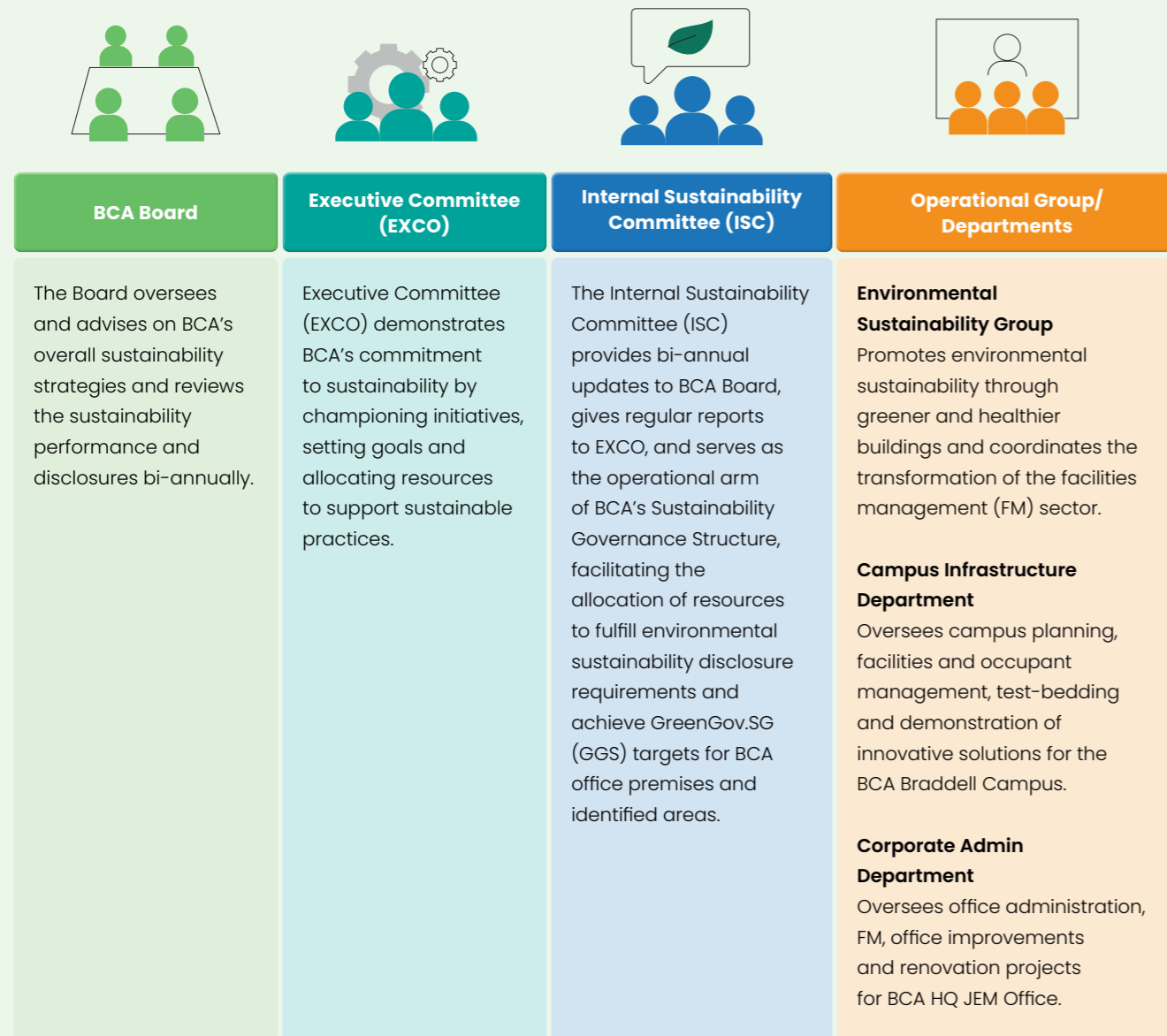
 **Unison Construction Pte. Ltd.**

 **Woh Hup (Private) Limited**

FY2023 Environmental Sustainability Disclosure



BCA's Environmental Sustainability Corporate Governance Structure



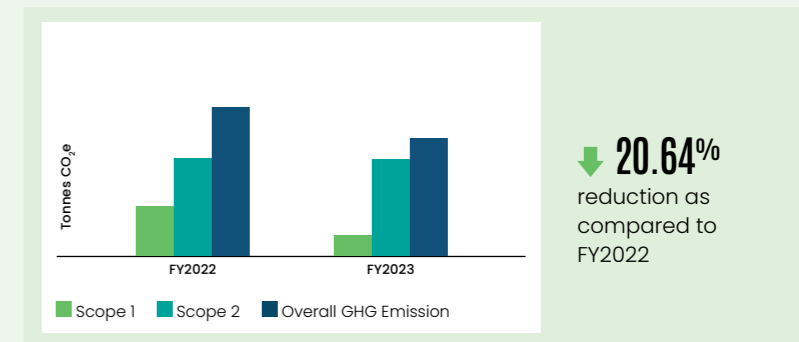
BCA's Environmental Sustainability Targets and Performance¹

- Peak emissions (Scope 1 and 2) by 2025 and achieve net zero emissions around 2045
- 10% reduction in Energy Utilisation Index (EUI) by 2030, compared to average of 2019-2020 levels
- 10% reduction in Water Efficiency Index (WEI) by 2030, compared to average of 2018-2020 levels
- 30% reduction in Waste Disposal Index (WDI) by 2030, compared to 2022 levels

Aligned with GreenGov.SG² targets, BCA consistently implements resource management measures to ensure efficient energy and water usage, as well as effective waste management within its premises.

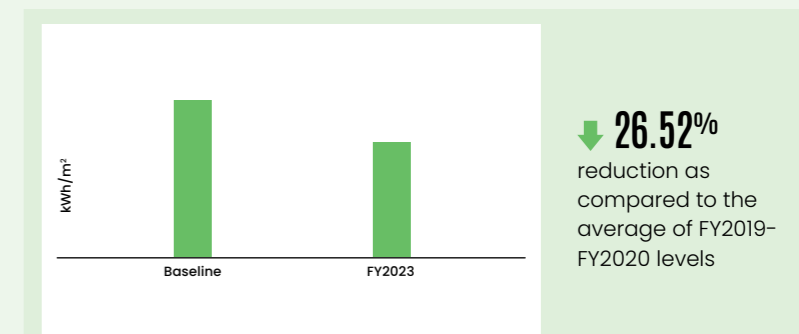
Greenhouse Gas (GHG) Emissions

The progressive transition to electric/hybrid training vehicles in BCA Braddell Campus has achieved a reduction in diesel consumption (Scope 1 emission), resulting in lower overall GHG emissions for FY2023.



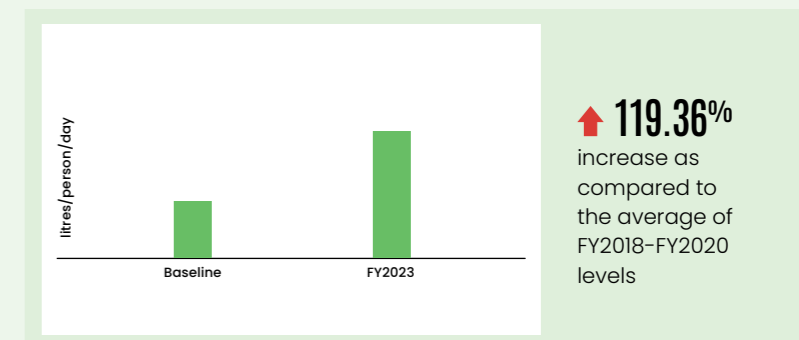
Energy Utilisation Index (EUI)

The use of energy-efficient mechanical and electrical systems, smart technology and extensive solar energy has reduced the overall EUI and placed both BCA Braddell Campus and BCA HQ JEM Office in the top 10% of the BCA Building Energy Benchmarking for FY2023³.



Water Efficiency Index (WEI)

The increase in WEI for FY2023 was mainly due to the testing and commissioning of the two new buildings - Block D (Zero Energy Building) and Block E (Super Low Energy Building) at BCA Braddell Campus. These included charging the sprinkler, hydrant and chilled water systems, topping up the cooling towers and intensified cleaning for occupancy.



¹ Refer to the Appendix for a detailed breakdown of the baseline and past year's environmental performance for premises directly managed by BCA, namely BCA HQ JEM Office and BCA Braddell Campus.

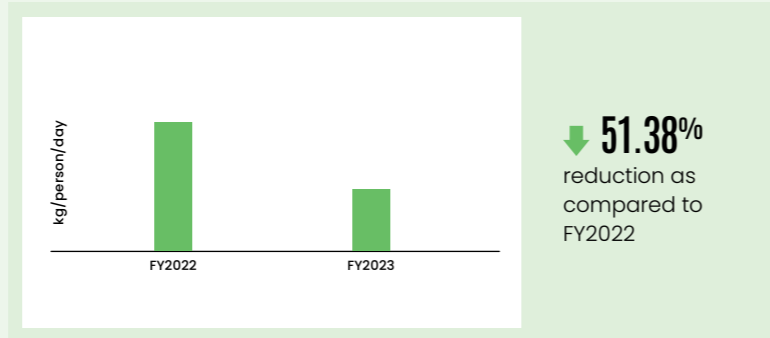
² The GreenGov.SG target is based on the calendar year, while BCA's environmental sustainability performance is reported in the Financial Year (FY). The targets remain consistent and unchanged, despite the difference in reporting periods.

³ [BCA Building Energy Benchmarking Report](#)

BCA's Environmental Sustainability Targets and Performance

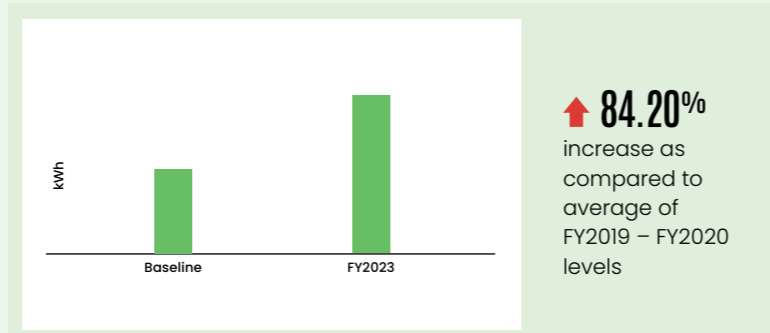
Waste Disposal Index (WDI)

BCA Braddell Campus consistently strives to manage waste efficiently through waste segregation and sorting, and advocates recycling to continually reduce WDI.



Renewable Energy

Up to 30% of BCA Braddell Campus' total energy consumed for FY2023 comes from solar energy. This amounts to 902,383 kWh, or the energy needed to power approximately 288 three-room HDB flats for a year⁴, and is one of the highest among Singapore educational institutions.



BCA Braddell Campus has attained net zero for Scope 2 emissions by utilising energy from renewable sources generated on premise and through Renewable Energy Certificates (RECs).



Achievements

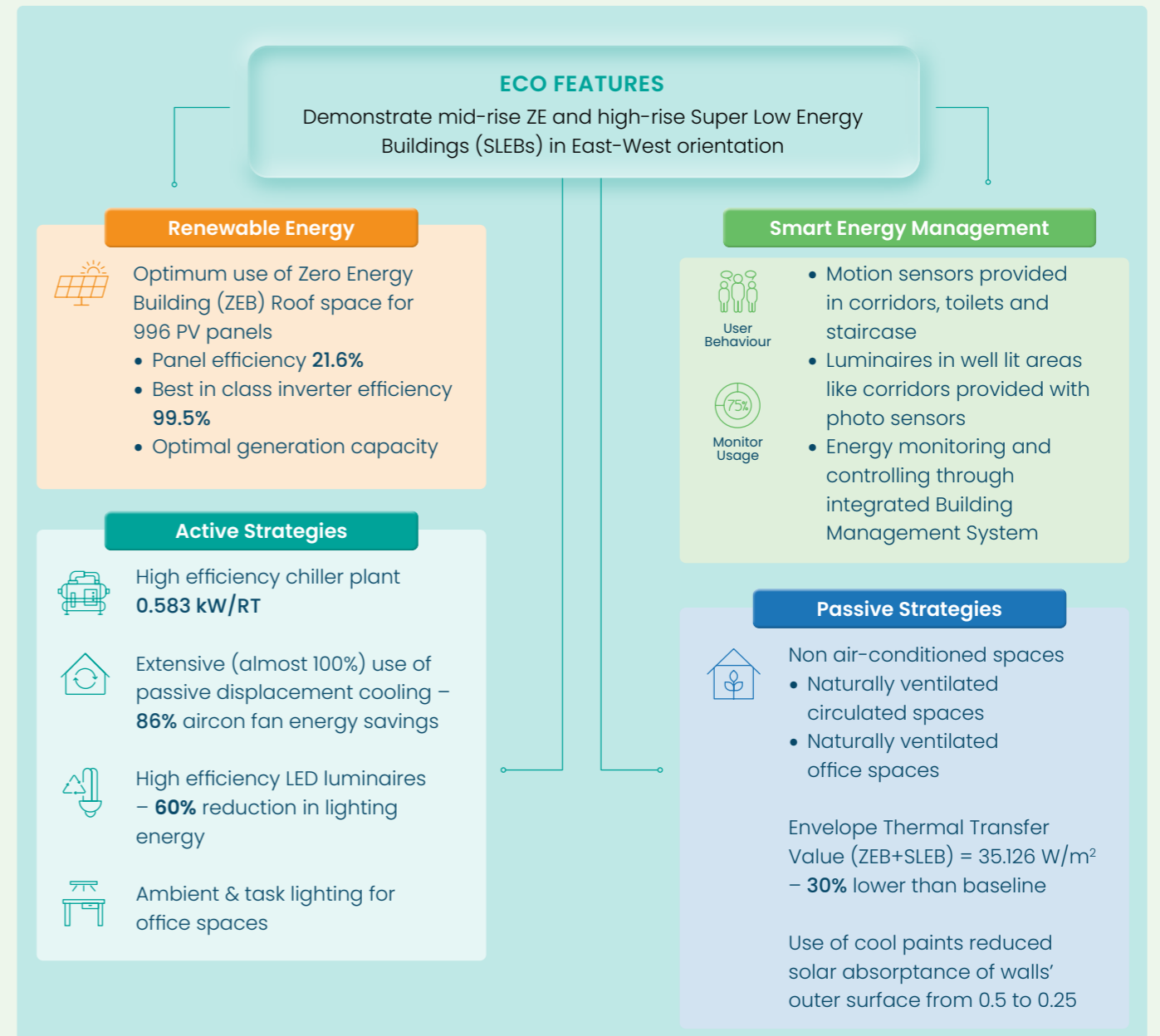
In FY2023, BCA Braddell Campus obtained the Green Mark Platinum Super Low Energy (SLE), and Zero Energy (ZE) certifications, as well as the ASEAN Energy Awards and PUB's Water Efficient Building and Friends of Water certifications. The Phase 2 Intensification Project at BCA Braddell Campus received the inaugural Institution of Engineers Singapore (IES) Sustainability Awards 2023 and the Ministry of National Development (MND) Minister Award 2023 for its innovative approach.



⁴ Average annual electricity consumption for a three-room HDB flat = 3,129 kWh as reported in the [Historical National Average Household usage for FY2023, SP Group calculation](#).

BCA's Corporate Sustainability Efforts

SUMMARY OF SUSTAINABLE URBAN SYSTEM

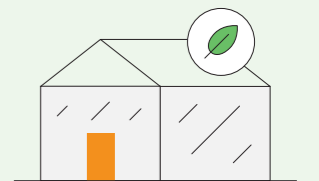


BCA Braddell Campus – Living Lab and Advocate

BCA Braddell Campus prides itself as a living lab and strong advocator of sustainability for the built environment (BE) by pushing boundaries and showcasing cutting-edge buildings. These include the best-in-class low-rise Positive Energy Building, mid-rise Zero Energy Building (ZEB) and high-rise SLEB. In 2023, the campus completed Phase 2 of its intensification works.

Achievements: Intensification Works Phase 2

- ✓ Won the inaugural IES Sustainability Awards 2023
- ✓ Inspires other organisations to drive sustainability through similar approaches



DEMONSTRATION AND INNOVATION

MASS ENGINEERED TIMBER (MET)



1 Manufactured in factory to precision to reduce wastage



2 Transported flat packed



3 Delivered 'Just in Time'



4 Stored at extended site



5 Assembly on site

MET is used for the construction of the 7-storey ZEB. MET has excellent insulation properties compared to traditional construction materials:

- Helps reduce heat transfer.
- Stabilises indoor temperatures.
- Lowers embodied carbon.

SUSTAINABLE CONSTRUCTION



Battery Generator is supplying power to site

CO₂ Emission Comparison (Jun 2021 to 2022)

Equipment	CO ₂ Emission (kg)	Reduction (%)
Diesel Generator	29,820 kg	62%
Battery Generator	11,277 kg	

Air Quality Comparison

Diesel Generator	Battery Generator	Reduction (%)
Emission of Carbon Monoxide (CO) Nitric Oxide (NOx) Particulate Matter (PM)	No emission of Carbon Monoxide (CO) Nitric Oxide (NOx) Particulate Matter (PM)	100%

BCA Braddell Campus hosts research and innovation (R&I) efforts by diverse stakeholders and experts that centre on sustainability. We pilot and showcase successful sustainable practices, technologies and solutions, while raising awareness and inspiring individuals, communities, businesses and Government Procuring Entities (GPEs) to adopt sustainable practices.

Bolstering Sustainability: Intensification Works Phase 2

Renewable energy

- Solar source accounts for 30% of total energy consumption – one of the highest among Singapore campuses.
- Part of BCA Braddell Campus' drive to achieve neutral carbon emissions by 2045.

Sustainable construction

- Use of MET⁵ in the construction of the 7-storey ZEB.
- Saved 4,547 tonnes of CO₂ equivalent for Phase 2⁶.

Advanced energy storage system

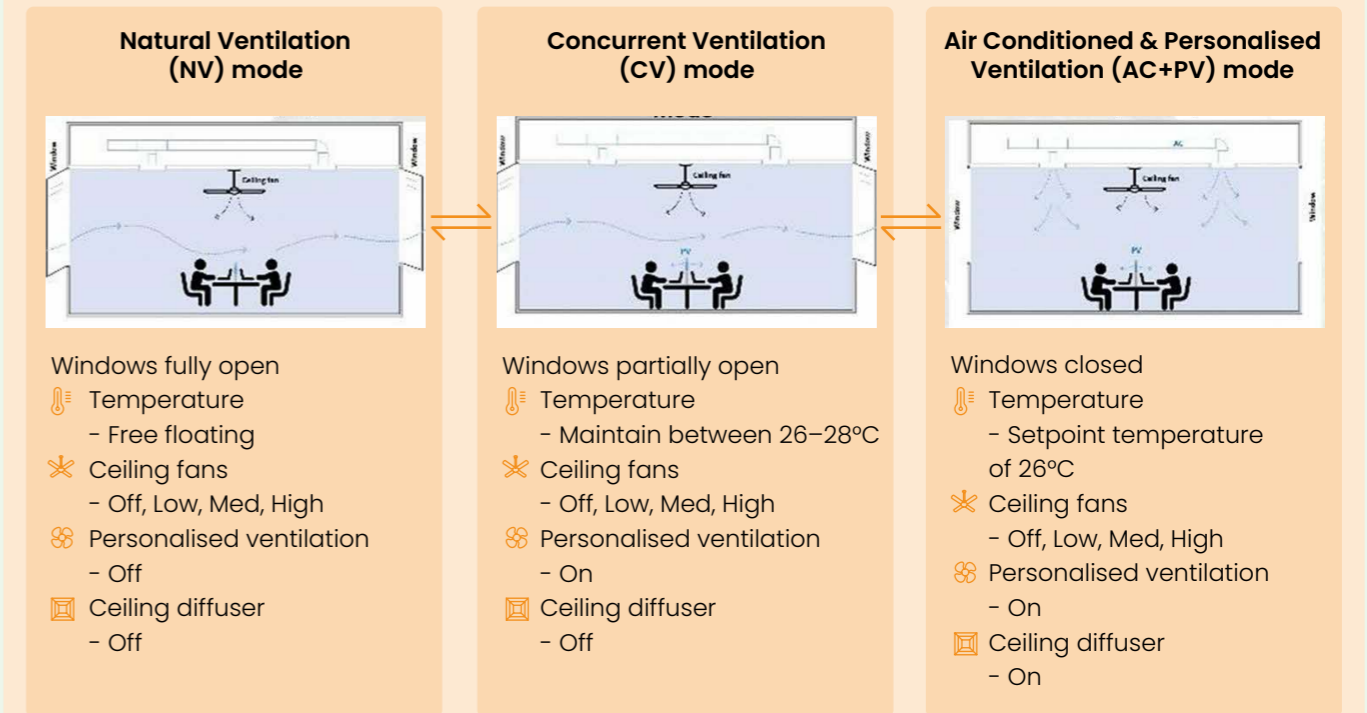
- Reduces carbon emissions by up to 62%
- Replaces conventional generators and limits excessive noise

TEST-BEDDING NOVEL TECHNOLOGIES

CONCEPT OF MIXED-MODE VENTILATION SOLUTION FOR LEVEL 14, BLOCK E, BCA BRADDELL CAMPUS

Aim to enhance occupant thermal comfort and energy savings potential through:

- 1 Higher setpoint temperature supplemented by elevated air movement from ceiling fans
- 2 Use of personalised ventilation supplemented with ceiling supply
- 3 Occupant centric controls that consider the three modes of "Natural Ventilation, Concurrent Ventilation and Air Conditioned & Personalised Ventilation" to achieve optimal thermal comfort and energy savings.



Depending on outdoor weather conditions, the building management system (BMS) will switch the ventilation system between the three modes to achieve optimal thermal comfort and energy savings.

One example is the project with the National University of Singapore (NUS) featuring a real-time occupant-centric sensing and control strategy that optimises total building performance for mixed-mode ventilation in our tropical climate.

⁵ MET lowers carbon by relying on renewable sources and a manufacturing process that typically requires less energy compared to traditional materials.

⁶ Refer to the Appendix on GHG emissions for emission factors used in the calculation.

Incorporating Sustainability Into Our Core Business Areas and Procurement Practices

DRIVING THE GREEN AGENDA: Promoting environmental responsibility and sustainability at BCA

At BCA, we are committed to:

- Implementing waste management strategies that prioritise reusing, reducing and recycling, as well as waste segregation, as part of our conscientious efforts towards environmental responsibility and sustainability.
- Encouraging staff, students and visitors to sort waste and recycle within BCA premises.
- Ensuring that green procurement practices for office and IT equipment are prioritised for products and services used within BCA offices and premises.
- Fostering a sustainable culture among the staff through proactive email communications and engaging activities.
- Extending environmental responsibility across all initiatives by ensuring that all BCA events strive to adhere to the GreenGov.SG (GGS) guidelines wherever possible, reflecting our dedication to sustainable practices and environmental stewardship.

DRIVING THE GREEN AGENDA: Advancing Sustainability in the BE Sector

BCA partnered the Singapore Green Building Council (SGBC) to develop the latest edition of the Singapore Green Building Masterplan (SGBMP) together with industry stakeholders and the community. Launched in March 2021, the SGBMP is a key component of the Singapore Green Plan 2030.

The SGBMP aims to deliver three key targets:



80% of buildings by gross floor area (GFA) to be green by 2030



80% of new developments to be SLE from 2030



80% energy efficiency (EE) improvement (from 2005 levels) by 2030

TARGET 01

80% of buildings by GFA to be green by 2030

Progress as of 2023: 58% of buildings green



KEY ENABLERS:

- **Minimum environmental sustainability standards for new buildings and existing buildings**
- **Mandatory Energy Improvement (MEI) Regime**
- **Green Mark Incentive Schemes (GMIS)**
- **Raise sustainability standards with Green Mark 2021**

MEI Regime - To intensify our greening efforts, BCA will introduce the MEI regime by the end of 2024. Under this regime, owners of buildings that are energy intensive will be required to carry out energy audits and implement energy efficiency improvement measures to reduce the overall environmental impact of their building operations.

GMIS - Through the GMIS, BCA has been supporting developers and building owners in reducing the initial costs associated with implementing sustainable initiatives in new building construction as well as energy retrofits in existing buildings. Both the Green Mark Incentive Scheme for New Buildings (GMIS-NB) and Green Mark Incentive Scheme for Existing Buildings (GMIS-EB) concluded in 2023.



Achievements as of FY2023

GMIS-NB

- **94** developers/building owners
- **62** architects
- **62** M&E consultants
- **101** projects
- Carbon reduction of approximately **0.086 MtCO₂e** per annum

GMIS-EB

- **70** developers/building owners
- **62** architects
- **24** ESCOs/M&E consultants
- **77** projects
- Carbon reduction of approximately **0.09 MtCO₂e** per annum

Building owners can continue tapping into the enhanced \$63 million Green Mark Incentive Scheme for Existing Buildings 2.0 (GMIS-EB 2.0) to retrofit existing buildings to achieve higher energy performance standards (i.e. Platinum, SLE and Zero Energy). As of December 2023, BCA has approved eight applications.

Enhanced Green Mark 2021 standards - Originally introduced in September 2021, the GM2021 Standards have been refreshed and the second edition was officially launched in October 2023.

GM2021 Standards: Growing decarbonisation efforts towards Net Zero

In FY2023,

- **Over 600** building developments met the Minimum Environmental Sustainability Standards
- **117** developments achieved Green Mark certifications
- **129** projects attained Green Mark standards such as SLE, Zero Energy and Positive Energy

THE LAKEGARDEN RESIDENCES

The LakeGarden Residences was awarded Platinum SLE with four sustainability badges - Whole Life Carbon, Resilience, Health and Well-being, and Maintainability.

By adopting good passive designs and energy efficient systems, the carbon abatement from SLE condominium units is equivalent to having 0.7 hectares of forest for every unit or removing one non-electric car off the road for every four units.

Prominent green features

- Provision of energy efficient air-conditioning units (five ticks) for both dwelling units and common areas
- More than **60%** of living rooms and bedrooms are designed with adequate openings for good natural ventilation
- **30%** of specific common area energy consumption is offset with solar photovoltaic (PV) systems



TARGET 02

80% of new developments to be SLE from 2030

Progress as of 2023: 7% of new developments are SLE



KEY ENABLERS:

- Driving SLE adoption in the public sector through GreenGov.SG and key districts
- Enabling private sector adoption through Government Land Sales (GLS) requirement and Built Environment Transformation GFA Incentive Scheme

GGG - To expand on the existing GGS initiative, BCA and the GGS Secretariat jointly developed the proposal for green construction procurement, which has been piloted by Land Transport Authority and JTC Corporation (JTC). The proposal aims to promote sustainable practices among construction firms at both company and project level by setting aside up to 5% for sustainability in tender evaluations for construction tenders above \$50 million.

Sustainability targets for key districts - Leveraging strategic districts to advance sustainability outcomes, BCA collaborated with the Urban Redevelopment Authority (URA) and key stakeholders to push for higher sustainability standards for Jurong Lake District (JLD) and Marina South. JLD now has a Net Zero target by 2045 - five years ahead of the national target in 2050.

Built Environment Transformation GFA Incentive Scheme - The SGBMP has been a catalyst for the private sector to aim for improved sustainability standards through targeted incentive schemes. One such initiative is the Built Environment Transformation Gross Floor Area Incentive Scheme. We expect SLE adoption to progressively rise and become more mainstream starting in 2025 or 2026 when the SGBMP levers are in full swing.

Highlights of the Built Environment Transformation Gross Floor Area Incentive Scheme

- A collaboration between BCA and URA
- Aim: To drive transformation in the BE sector to deliver the outcomes under the Construction Industry Transformation Map in the areas of digitalisation, productivity and sustainability
- 9 applications approved as of December 2023



PAYA LEBAR GREEN

In 2023, Paya Lebar Green achieved the prestigious Green Mark 2021 (GM: 2021) Platinum SLE rating. In addition, the development delivered a remarkable performance in various areas of sustainability.

SUSTAINABILITY BADGES	
Paya Lebar Green - South	Paya Lebar Green - North
Intelligence Health and Well-being Whole Life Carbon Maintainability	Achieved all 5 badges (i.e. Intelligence, Health and Well-being, Whole Life Carbon, Maintainability and Resilience badges)

Energy Efficiency

Paya Lebar Green has made strides to enhance energy efficiency by employing more effective cooling solutions and renewable energy, with both buildings expected to achieve over 40% in energy savings.

Paya Lebar Green - South	Paya Lebar Green - North
<ul style="list-style-type: none"> • High efficiency dual temperature chiller plant • Innovative hybrid cooling system that combines perimeter active chilled beam with interior Variable Air Volume Air Handling Unit (AHU) system • Onsite solar PV systems 	<ul style="list-style-type: none"> • High efficiency chiller plant • Onsite solar PV systems

Whole Life Carbon

Paya Lebar Green undertook a range of initiatives to achieve the Whole Life Carbon badge. Collectively, the carbon abatement from both buildings amounted to 150 tonnes of CO₂ emissions.

Paya Lebar Green - South	Paya Lebar Green - North
<ul style="list-style-type: none"> • Use of carbon mineralisation technology and low carbon concrete, sustainable products and finishes • Comprehensive Whole Life Carbon assessment • Enhanced demolition protocol 	<ul style="list-style-type: none"> • Conservation of existing structures that are over 30 years old

Maintainability and Intelligence

The buildings adopted various design strategies for better maintainability and more intelligent operations.

- Use of materials with low maintenance needs for flooring and façade.
- The façade is 100% accessible through suspended platforms with track-mounted trolleys and Mobile Elevated Working Platforms.
- The buildings operate intelligently on the Integrated Services Platform for monitoring, analysis and control of both base building and tenancy areas
- IoT sensors for indoor air quality and smart lighting with occupancy sensor for zonal demand control



TARGET 03

80% Energy Efficiency (EE) Improvement (from 2005 levels) by 2030

Progress as of 2023: 71% EE improvement



KEY ENABLERS:

- Driving the development and deployment of innovative Green Building Technologies
- Launch of Green Buildings Innovation Cluster (GBIC) 2.0
- Launched Carbon Tool development with JTC, Singapore Green Building Council (SGBC) and NUS Energy Studies Institute (ESI)
- Testing of innovative green building technologies at ZEB Plus and BCA SkyLab

GBIC – GBIC is a one-stop research, development and demonstration programme for technologies and innovations that advance building energy performance. Since its launch in 2014, the GBIC programme has supported the development of innovative energy-efficient technologies and solutions with a high potential for widespread adoption.

BCA also released GBIC e-publications featuring Tampines Secondary School and R&I Translation, with the aim of sharing innovative solutions with the industry to achieve best-in-class SLEB or ZEB.

Highlights of GBIC 2.0

- Enhanced funding of \$45 million
- Supported the development and demonstration of more than 80 innovative technologies from over 70 firms
- Focuses on key building typologies responsible for the highest contribution to energy consumption in the building sector
- First thematic Challenge Call launched in February 2023
 - Aim: To achieve 75% EE improvement for demonstration projects on high-rise commercial office and hotel buildings
 - Two R&I projects successfully awarded



Carbon tool development – On the carbon accounting front, the current Building Embodied Carbon Calculator (BECC) was developed by BCA, JTC, SGBC and NUS ESI to give the industry a unified carbon accounting tool with localised emission factors to account for the upfront carbon of buildings. Expanding on this initiative, the team introduced the web-based Singapore Building Carbon Calculator in June 2023 to enhance user experience.

BCA SkyLab – BCA SkyLab is an advanced test facility that provides the industry with opportunities to test-bed novel technologies to achieve greater energy savings and higher performance. In 2023, four technologies related to PV systems and façade design were tested at the facility.

SMU-CONNEXION

Singapore Management University (SMU) was supported by the GBIC programme to incorporate energy-efficient technologies in the development of SMU-Connexion.

Achievements:

- ✓ Verified energy savings of 68.8% from the 2005 baseline
- ✓ Green Mark Platinum (Zero Energy) certification

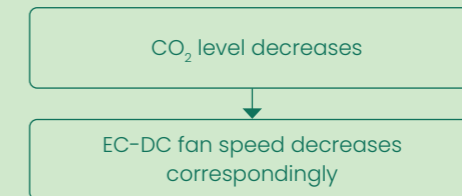
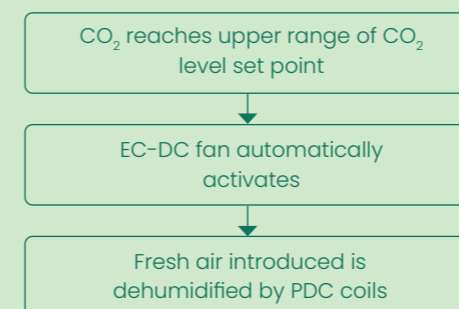
Enhanced Passive Displacement Cooling (PDC) System

SMU has adopted an innovative approach to PDC:

- Installation of PDC coils in the ceiling space without the need for cavity walls typically required for conventional PDC design. The result:
 - Air-conditioned areas are fully cooled by PDC
 - No AHUs or Fan Coil Units (FCUs) required.
 - Higher energy savings
- Integration of PDC system with the lighting system and the Mechanical, Electrical and Plumbing systems into a modularised system for ease of installation.

Electronically Commutated (EC) Direct Current (DC) fans

EC-DC fresh air fans and CO₂ sensors work together to optimise the supply of fresh air to air-conditioned spaces, preventing excessive outdoor air from being introduced.



Note: EC-DC fan stops when CO₂ level drops to the minimum range.

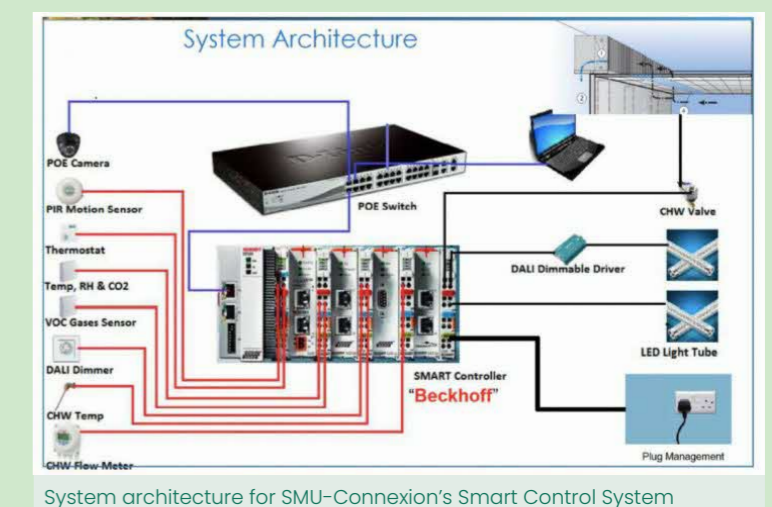
Additionally, the EC-DC fans feature a dual airflow direction capability, allowing the same fresh air fan to also serve as a purging air fan at night.

Smart Controllers

The operation centric smart controls system:

- integrates building services with networked sensors for temperature, relative humidity, carbon dioxide and occupancy to minimise energy consumption.
- leverages outdoor weather conditions to maintain the indoor air quality at optimum levels without overcooling by integrating the PDC systems, fresh air intake and occupancy sensing.
- controls the LED lighting system by dimming unoccupied zones and controlling the lux levels.

The plug load management system allows SMU to control the power supply through its BMS based on the operating hours or as and when needed.





Building Information Modelling (BIM) for FM

By leveraging the existing BIM, SMU created a digital twin that is integrated with both the BMS and computerised maintenance and management system. This allows SMU's FM team to monitor real-time data and carry out predictive and preventive maintenance.

The FM team can also respond to servicing requests using the digital twin to trace the location and update the status of the request once it has been resolved.

SMU plans to integrate the digital twin with other standalone systems (e.g. fire alarm system).

COLLABORATIVE APPROACH IN BUILDING GREEN CAPABILITIES

BCA collaborates with SGBC to enable capacity-building of Green Building professionals. Through the Green Mark Accredited Professionals programme, over 2,000 professionals have undergone upskilling to enrich their expertise in green buildings by end of FY2023.

Our partnership in advancing local proficiency in sustainability also extends to relevant courses offered by Institutes of Higher Learning, Technical Assistance Centres and the BCA Academy. Together, we are committed to building an effective ecosystem to decarbonise the BE sector.

BEYOND 2030

Towards Net Zero by 2050



KEY ENABLERS:

- Alternative cooling technologies (ACTs)
- Green financing
- Pandemic resilience

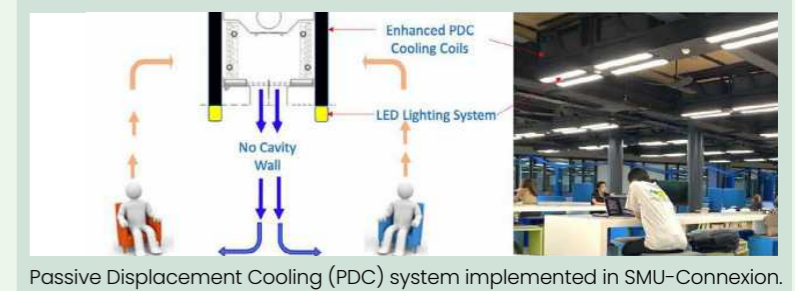
ACTs - In line with Singapore's net zero ambition by 2050, BCA has actively promoted passive design strategies to reduce energy consumption while maintaining good Indoor Environment Quality. These include:

- more natural ventilated spaces to reduce the use of air-conditioning;
- adopting ACTs; and
- leveraging hybrid cooling through higher air-conditioned temperatures of 26-27 °C and ceiling fans for increased airflow.

Our ZEB plus office serves as a live case study for visitors who are interested in adopting hybrid cooling systems.

BCA has identified Mixed Mode Ventilation (MMV) as a high-potential ACT for reducing cooling energy. In October 2023, NUS and the project team presented a compelling MMV showcase during the launch of the Built Environment Innovation Hub, following the successful Proof of Concept and Demonstration. This demonstration underscores the potential of MMV in real-life settings.

Green Financing - Green financing is a key instrument in facilitating the decarbonisation of economic activities. BCA has played an active role in supporting the Monetary Authority of Singapore's development of the Singapore-Asia Taxonomy for the Real Estate and Construction as well as the Information and Communications Technology sectors. Published in December 2023, it provides a unified framework for defining green and transition activities,



Passive Displacement Cooling (PDC) system implemented in SMU-Connexion.



Hybrid cooling system tested at BCA's ZEB Plus office. The hybrid cooling system operates by raising the setpoint temperature of the office air-conditioning system from 24 to 26.5°C, and is supplemented by ceiling fans. In doing so, the ZEB Plus office can achieve 32% energy savings on the air-conditioning system while maintaining thermal comfort for its occupants.

enabling developers and building owners to access sustainable financing for the decarbonisation of new and existing building assets.

Pandemic resilience - The COVID-19 pandemic has underscored the critical importance of indoor air quality. Throughout the pandemic, BCA collaborated closely with the National Environment Agency (NEA) and the Ministry of Health to mitigate the risk of airborne transmission in buildings. We conducted ventilation system audits in high-risk buildings to ensure sufficient ventilation and improved indoor air quality. In 2023, to foster energy efficient and resilient designs, BCA partnered the Institution of Engineers Singapore, NEA and industry stakeholders to kickstart the review process of Singapore Standards (SS) SS553: Air Conditioning and Mechanical Ventilation in Buildings. In addition, BCA is a key member of SS554: Indoor Air Quality for Air-Conditioned Buildings, shaping safer and healthier indoor environments in the face of future public health crises.

Appendix

BCA'S ENVIRONMENTAL SUSTAINABILITY TARGETS AND PERFORMANCE

BCA supports the GreenGov.SG initiative, launched in July 2021, which sets sustainability targets for the public sector. The targets encompass reaching peak carbon emissions (Scope 1 and 2) around 2025, achieving net zero emissions around 2045, a 10% reduction in energy and water consumption as well as a 30% reduction in waste disposal by 2030. To achieve these goals, BCA is continually implementing resource management measures for its premises. We continue to uphold sustainability practices by ensuring energy and water efficiency and effective waste management.

GHG emissions

Facilities			BCA HQ JEM Office	JEM Data Centre	Overall JEM	BCA Braddell Campus	Braddell Data Centre	Overall Braddell Campus	Overall BCA
Performance			tonnes CO ₂ e			tonnes CO ₂ e			tonnes CO ₂ e
Scope 1 emissions	FY2021	Gross emissions	1.098		1.098	59.970		59.970	61.068
		Emissions reduction	0.000		0.000	0.000		0.000	0.000
		Net emissions	1.098		1.098	59.970		59.970	61.068
	FY2022	Gross emissions	1.654		1.654	112.829		112.829	114.483
		Emissions reduction	0.000		0.000	0.000		0.000	0.000
		Net emissions	1.654		1.654	112.829		112.829	114.483
	FY2023	Gross emissions	2.320		2.320	45.002		45.002	47.322
		Emissions reduction	0.000		0.000	0.000		0.000	0.000
		Net emissions	2.320		2.320	45.002		45.002	47.322
Scope 2 emissions	FY2021	Gross emissions	98.488	125.979	224.467	587.280	83.212	670.492	894.959
		Emissions reduction	0.000	0.000	0.000	587.280	83.212	670.492	670.492
		Net emissions	98.488	125.979	224.467	0.000	0.000	0.000	224.467
	FY2022	Gross emissions	120.069	105.951	226.019	725.408	93.023	818.431	1044.450
		Emissions reduction	0.000	0.000	0.000	725.408	93.023	818.431	818.431
		Net emissions	120.069	105.951	226.019	0.000	0.000	0.000	226.019
	FY2023	Gross emissions	116.803	106.102	222.905	765.408	112.217	877.625	1100.529
		Emissions reduction	0.000	0.000	0.000	765.408	112.217	877.625	877.625
		Net emissions	116.803	106.102	222.905	0.000	0.000	0.000	222.905
Scope 3 emissions	FY2021	Gross emissions	99.586	125.979	225.565	647.250	83.212	730.462	956.027
		Emissions reduction	0.000	0.000	0.000	587.280	83.212	670.492	670.492
		Net emissions	99.586	125.979	225.565	59.970	0.000	59.970	285.535
	FY2022	Gross emissions	121.723	105.951	227.673	838.237	93.023	931.260	1158.933
		Emissions reduction	0.000	0.000	0.000	725.408	93.023	818.431	818.431
		Net emissions	121.723	105.951	227.673	112.829	0.000	112.829	340.502
	FY2023	Gross emissions	119.123	106.102	225.225	810.409	112.217	922.626	1147.851
		Emissions reduction	0.000	0.000	0.000	765.408	112.217	877.625	877.625
		Net emissions	119.123	106.102	225.225	45.002	0.000	45.002	270.227

Notes:

• Scope 1 emissions refers to direct emissions from sources that are owned or controlled by BCA. The emission factors for Scope 1 emissions were obtained from the 2006 Intergovernmental Panel on Climate Change (IPCC) Guidelines Volume 2 Chapters 2 and 3¹. On the other hand, Net Calorific Values (NCVs) were derived based on the GHG Protocol's Emissions Factor for Cross-Sector Tools. The emission factors used in our calculations are as follows:

Fuel Type	Carbon Dioxide (CO ₂)	Methane (CH ₄)	Nitrous Oxide (N ₂ O)
Units	(tC/TJ) ^{2,3}	(kg/TJ)	(kg/TJ)
Diesel	18.90	25	8
Petrol	20.20	3.9	3.9

• Scope 2 emissions refers to indirect emissions that result from the use of purchased electricity. The Energy Market Authority (EMA) Grid-average emissions factor data⁴ is used to calculate GHG emissions from electricity BCA purchased from the national grid.

- FY2023 = based on 2022 electricity grid emission factors = 0.0004168 tonnes CO₂/kWh
- FY2022 = based on 2021 = 0.0004085 tonnes CO₂/kWh
- FY2021 = based on 2020 = 0.0004074 tonnes CO₂/kWh

¹ 2006 IPCC Guidelines for National Greenhouse Gas Inventories Vol 2 Ch 2 , 2006 IPCC Guidelines for National Greenhouse Gas Inventories Vol 2 Ch 3

² 1996 IPCC Guidelines on Net Calorific Values and Emission Factors for Oils - Table 1

³ TC/TJ is tonnes of Carbon per Terajoule. For further conversion to CO₂, it needs to be multiplied by a factor of 44/12. TJ is in net calorific value basis.

⁴ SES Chapter 2: Energy Transformation, EMA

Electricity consumption

Facilities		BCA HQ JEM Office		BCA Braddell Campus		Overall BCA	
Performance		Purchased Energy (kWh)	Renewable Energy (kWh)	Purchased Energy (kWh)	Renewable Energy (kWh)	Purchased Energy (kWh)	Renewable Energy (kWh)
Electricity consumption	Baseline (FY2019 to FY2020)*	464,343.25	0.00	1,837,865.50	489,903.00	2,302,208.75	489,903.00
	FY2021	445,997.78	0.00	1,645,783.00	596,479.00	2,091,780.78	596,479.00
	FY2022	521,642.96	0.00	2,003,502.00	522,734.00	2,525,144.96	522,734.00
	FY2023	534,800.01	0.00	2,105,625.00	902,383.00	2,640,425.01	902,383.00
Performance		kWh/m ²		kWh/m ²		kWh/m ²	
EUI	Baseline (FY2019 to FY2020)*	53.72		54.64		54.87	
	FY2021	53.82		52.64		52.83	
	FY2022	62.95		59.30		59.90	
	FY2023	64.54		37.79		40.32	

Notes:

• * Electricity consumption data for BCA HQ JEM Office Data Centre and BCA Braddell Campus Data Centre are not available for FY2018. Baseline is based on FY2019 to FY2020.

• EUI is defined as the total electricity consumed by a facility in one year divided by its total gross floor area (GFA).

• The formula used to calculate the EUI is as follows:

$$\text{Agency EUI in Year}_n = \frac{\text{(Total amount of electricity consumed for all Agency premises in EUI in Year}_n\text{)}}{\text{(Total GFA for all Agency premises in EUI in Year}_n\text{)}}$$

Water consumption

Facilities		BCA HQ JEM Office	BCA Braddell Campus	Overall BCA
Performance		m ³	m ³	m ³
Water consumption	Baseline (FY2018 to FY2020)	3,525.71	27,175.00	30,700.71
	FY2021	1,418.80	23,129.00	24,547.80
	FY2022	2,116.00	35,139.00	37,255.00
	FY2023	2,148.20	36,766.00	38,914.20
Performance		litres/person/day	litres/person/day	litres/person/day
WEI	Baseline (FY2018 to FY2020)	24.17	88.25	67.66
	FY2021	34.40	92.10	124.69
	FY2022	24.01	310.96	185.23
	FY2023	30.61	191.49	148.42

Notes:

- WEI is defined as the water consumption per day divided by the total number of headcounts including visitors to the premises.
- The formula used to calculate WEI is as follows:
 - Premises WEI in Year_n = [Total amount of water consumed in Year_n × 1000] / [operational days in Year_n × (Average number of staff/ Full Time Onsite Contractors/ Auditors/ Service Providers/ Tenants/ Full Time Student per day) + (0.5 × Average Part Time Student per day) + (0.25 × Average number of visitors per day for all Agency premises)]
 - Agency WEI in Year_n = [Total amount of water consumed for all Agency premises in Year_n × 1000] / [operational days in Year_n × (Average number of staff/ Full Time Onsite Contractors/ Auditors/ Service Providers/ Tenants/ Full Time Student per day) + (0.5 × Average Part Time Student per day) + (0.25 × Average number of visitors per day for all Agency premises)]
- For the calculation of the baseline and FY2023 performance: Average number of operational days is taken to be 250 days [based on Public Sector Take the Lead in Environmental Sustainability (PSTLE) norm: 365 days – 104 weekends – 11 Public Holidays]. Total number of staff per day is taken as follows:

Visitorship (Average number per day)	BCA HQ JEM Office	BCA Braddell Campus	Overall BCA
Staff	269 ¹	158 ²	427
Full Time Onsite Contractors/ Auditors/ Service Providers/ Tenants etc.	0	369	369
Full Time Student	0	200 ³	316
Part Time Student	0	66	0
Visitor	47 ¹	32	47

- The daily staff and visitor occupancy at BCA HQ JEM Office was determined based on the actual count of staff and visitor from the daily entry records.
- The daily staff occupancy at BCA Braddell Campus was calculated by applying a 0.6 factor to the staff headcount based at the BCA Braddell Campus, taking into consideration BCA's work-from-home arrangements, which require staff to be physically present for 3 days a week.
- The daily Full Time Student was calculated by applying a 0.6 factor to the total number of enrolled full-time students, taking into consideration home-based learning.

Waste generation

Facilities		BCA Braddell Campus
Performance		kg
Waste disposed of	Baseline FY2022	25375
	FY2023	20970
Performance		kg/person/day
WDI	Baseline FY2022	0.2246
	FY2023	0.1092

Notes:

- BCA HQ at 52 Jurong Gateway Road, #11-00, Singapore 608550 is a tenant under Ministry of National Development (MND) and will be excluded from the waste generation report as waste is managed by landlord (Lendlease Global Commercial REIT).
- WDI is defined as the total waste disposed of per day divided by the total number of public officer headcount including visitors to the premises. Recyclables, food waste, e-waste, horticulture waste that are sorted and collected separately are not included.
- The formula used to calculate WDI is as follows:
 - Premises WDI in Year_n = [Total amount of waste disposed of in Year_n] / [operational days in Year_n × (Average number of staff/ Full Time Onsite Contractors/ Auditors/ Service Providers/ Tenants/ Full Time Student per day) + (0.5 × Average Part Time Student per day) + (0.25 × Average number of visitors per day for all Agency premises)]

Annual Financial Statements

Building and Construction Authority
and Its Subsidiaries

Statement by the Board

In our opinion:

- (a) the accompanying financial statements of Building and Construction Authority (the "Authority") and its subsidiaries (collectively, the "Group"), set out on pages 6 to 46 are properly drawn up in accordance with the provisions of the Public Sector (Governance) Act 2018 ("the PSG Act"), the Building and Construction Authority Act 1999 (the "Act") and Singapore Statutory Board Financial Reporting Standards ("SB-FRSs") so as to present fairly, in all material respects, the state of affairs of the Group and the Authority as at 31 March 2024, and the results and changes in reserves of the Group and the Authority, and cash flows of the Group for the financial year ended on that date;
- (b) the receipt, expenditure, investments 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 PSG Act, the Act and the requirements of any other written law applicable to moneys of or managed by the Authority; and
- (c) proper accounting and other records have been kept, including records of all assets of the Authority whether purchased, donated or otherwise.

On behalf of the Board of the Building and Construction Authority



Chairman
Lim Sim Seng



Chief Executive Officer
Kelvin Wong

1 August 2024

Independent Auditor's Report

To The Board Members of
Building and Construction Authority

Report on the Audit of the Financial Statements

Opinion

We have audited the financial statements of Building and Construction Authority (the "Authority") and its subsidiaries (collectively, the "Group"), which comprise the statements of financial position of the Group and the Authority as at 31 March 2024, statements of comprehensive income and statements of changes in reserves of the Group and the Authority, and consolidated statement of cash flow of the Group for the year then ended, and notes to the financial statements, including material accounting policy information, as set out on pages 6 to 47.

In our opinion, the accompanying consolidated financial statements of the Group, the statement of financial position, the statement of comprehensive income and the statement of changes in reserves of the Authority are properly drawn up in accordance with the provisions of the Public Sector (Governance) Act 2018 ("the PSG Act"), the Building and Construction Authority Act 1999 (the "Act") and Statutory Board Financial Reporting Standards ("SB-FRSs") so as to present fairly, in all material respects, the state of affairs of the Group and the Authority as at 31 March 2024 and results and changes in reserves, of the Group and the Authority and consolidated cash flows of the Group 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.

Information Other than Financial Statements and Auditor's Report Thereon

Management is responsible for other information. The other information comprises the Statement by the Board of the Authority set out on page 1, but does not include the financial statements and our auditor's report thereon.

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.

Independent Auditor's Report (cont'd)

To The Board Members 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 PSG Act, the Act and SB-FRSs, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

A statutory board is constituted based on its constitutional 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.

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:

- (a) 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.
- (b) 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.
- (c) Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- (d) 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. However, future events or conditions may cause the Group to cease to continue as a going concern.

Independent Auditor's Report (cont'd)

To The Board Members of
Building and Construction Authority

- (e) 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.
- (f) 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 year are, in all material respects, in accordance with the provisions of the PSG Act, the Act and the requirements of any other written law applicable to moneys of or managed by the Authority; 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 for 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 PSG Act, the Act and the requirements of any other written law applicable to moneys of or managed by the Authority. This responsibility includes monitoring related compliance requirements relevant to the Authority, and implementing internal controls as management determines are necessary to enable compliance with the requirements.

Independent Auditor's Report (cont'd)

To The Board Members of
Building and Construction Authority

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 PSG Act, the Act and the requirements of any other written law applicable to moneys of or managed by the Authority.

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 Authority's internal control. Because of the inherent limitations in any internal control system, non-compliances may nevertheless occur and not be detected.



Public Accountants and
Chartered Accountants
Singapore

1 August 2024

Statements of Financial Position

As at 31 March 2024

Note	Group		Authority		
	2024 \$'000	2023 \$'000	2024 \$'000	2023 \$'000	
ASSETS					
Non-current assets					
Property, plant and equipment	4	216,366	200,358	216,366	200,358
Investments in subsidiaries	5	-	-	-	-
Trade and other receivables	6	133,443	24,282	133,443	24,282
Total non-current assets		349,809	224,640	349,809	224,640
Current assets					
Trade and other receivables	6	98,011	51,437	98,369	50,760
Cash and bank balances	7	420,838	423,672	410,332	413,682
Total current assets		518,849	475,109	508,701	464,442
Total assets		868,658	699,749	858,510	689,082
LIABILITIES AND EQUITY					
Non-current liabilities					
Fees received in advance	8	34,259	27,658	34,259	27,658
Lease liabilities	9	150,600	27,954	150,600	27,954
Provision for pension costs	10(a)	2,479	2,605	2,479	2,605
Provision for reinstatement costs	10(b)	2,479	2,447	2,479	2,447
Deferred capital grants	11	3,107	9,370	3,107	9,370
Total non-current liabilities		192,924	70,034	192,924	70,034
Current liabilities					
Fee received in advance	8	54,705	57,139	51,516	53,391
Lease liabilities	9	79,994	39,929	79,994	39,929
Trade payables		9,463	9,406	9,462	9,255
Other payables and accruals	12	59,833	71,388	59,828	71,389
Provision for pension costs	10(a)	183	183	183	183
Grants received in advance	13	-	88	-	88
Deferred capital grants	11	656	1,554	656	1,554
Provision for contribution to consolidated fund	14	1,345	4,279	1,345	4,279
Income tax payables		27	77	-	-
Total current liabilities		206,206	184,043	202,984	180,068
Capital and reserves					
Share capital	15	53,943	36,887	53,943	36,887
Capital account	16	30,817	30,817	30,817	30,817
Accumulated surplus		384,768	377,968	377,842	371,276
Total capital and reserves		469,528	445,672	462,602	438,980
Total liabilities and equity		868,658	699,749	858,510	689,082
Net assets of trust and agency funds					
	17	17,396	25,739	17,396	25,739

See accompanying notes to financial statements.

Statements of Comprehensive Income

Year ended 31 March 2024

Note	Group		Authority		
	2024 \$'000	2023 \$'000	2024 \$'000	2023 \$'000	
Operating income					
Plan fees		31,295	31,854	31,295	31,854
Course fees		18,329	20,250	18,329	20,250
Trade test fees		23,853	39,297	23,853	39,297
Quality and green mark assessment fees		11,070	17,475	10,431	17,012
Advertisement licence fees		6,591	6,753	6,591	6,753
Contractors registration fees		5,564	4,840	5,564	4,840
Operating lease income		20,527	11,886	20,527	11,886
Management fees		10,740	13,321	10,740	13,321
Other income		20,472	17,110	20,799	15,836
Total operating income		148,441	162,786	148,129	161,049
Operating expenditure					
Employee benefit costs	19	137,284	134,879	137,284	134,879
Depreciation of property, plant and equipment	4	18,816	16,185	18,816	16,185
Provision of impairment loss on trade receivables	21/24	1,302	1,126	1,302	1,126
Other expenditure		96,208	71,363	96,141	70,165
Total operating expenditure		253,610	223,553	253,543	222,355
Net operating deficit		(105,169)	(60,767)	(105,414)	(61,306)
Non-operating income/(expenses)					
Interest income	21	16,554	7,561	16,538	7,561
Bad debt provision written back	24	9,792	-	9,792	-
Interest expense	21	(4,021)	(2,898)	(4,021)	(2,898)
Property, plant and equipment written off/expensed		(311)	(294)	(311)	(294)
		22,014	4,369	21,998	4,369
Deficit before government grants		(83,155)	(56,398)	(83,416)	(56,937)
Government grants					
Operating grants	13	83,981	81,072	83,981	81,072
Deferred capital grants amortised	11	7,346	1,037	7,346	1,037
		91,327	82,109	91,327	82,109
Surplus before contribution to consolidated fund and income tax		8,172	25,711	7,911	25,172
Contribution to consolidated fund	14	(1,345)	(4,279)	(1,345)	(4,279)
Income tax expense	20	(27)	(59)	-	-
Surplus for the year, representing total comprehensive income for the year	21	6,800	21,373	6,566	20,893

See accompanying notes to financial statements.

Statements of Changes in Reserves

Year ended 31 March 2024

	Note	Share capital \$000	Capital account \$000	Accumulated Surplus \$000	Total \$000
Group					
Balance at 1 April 2022		29,827	30,817	356,595	417,239
Surplus for the year, representing total comprehensive income for the year		-	-	21,373	21,373
Issue of share capital representing transactions with owners, recognised directly in equity	15	7,060	-	-	7,060
Balance at 31 March 2023		36,887	30,817	377,968	445,672
Surplus for the year, representing total comprehensive loss for the year		-	-	6,800	6,800
Issue of share capital representing transactions with owners, recognised directly in equity	15	17,056	-	-	17,056
Balance at 31 March 2024		53,943	30,817	384,768	469,528
Authority					
Balance at 1 April 2022		29,827	30,817	350,383	411,027
Surplus for the year, representing total comprehensive income for the year		-	-	20,893	20,893
Issue of share capital representing transactions with owners, recognised directly in equity	15	7,060	-	-	7,060
Balance at 31 March 2023		36,887	30,817	371,276	438,980
Deficit for the year, representing total comprehensive loss for the year		-	-	6,566	6,566
Issue of share capital representing transactions with owners, recognised directly in equity	15	17,056	-	-	17,056
Balance at 31 March 2024		53,943	30,817	377,842	462,602

See accompanying notes to financial statements.

Statements of Cash Flows

Year ended 31 March 2024

	Note	Group	
		2024 \$'000	2023 \$'000
Cash flows from operating activities			
Deficit before government grants		(83,155)	(56,398)
Adjustments for:			
Depreciation of property, plant and equipment	4	18,816	16,185
Interest income		(16,554)	(7,561)
Interest expense		4,021	2,898
Property, plant and equipment written-off/expensed		311	294
Impairment loss on receivables	24	1,302	1,126
Bad debt provision written back	21	(9,792)	-
Provision for pension costs	10(a)	62	65
Provision for reinstatement costs	10(b)	-	339
		(84,989)	(43,052)
Changes in working capital:			
Decrease in trade and other receivables		62,425	34,702
Increase/(Decrease) in fees received in advance		4,167	(751)
Increase in trade payables		56	767
(Decrease)/Increase in other payables and accruals		(11,549)	8,672
Decrease in cash not available for general use		(6,134)	(15,220)
		(36,024)	(14,882)
Cash flows used in operations			
Payment of contribution to consolidated fund		(4,279)	(3,447)
Payment of income tax		(77)	(348)
Pension paid	10(a)	(188)	(188)
		(40,568)	(18,865)
Net cash used in operating activities			
Cash flows from investing activities			
Purchase of property, plant and equipment (Note A)		(15,952)	(51,604)
Proceeds from disposal of property, plant and equipment		52	-
Interest received		9,027	3,116
		(6,873)	(48,488)
Net cash used in investing activities			
Cash flows from financing activities			
Payment of lease liabilities	9	(57,966)	(45,177)
Issuance of shares	15	17,056	7,060
Government grants received		83,893	83,985
Deferred capital grants received		185	200
Interest paid		(4,695)	(2,556)
		38,473	43,512
Net cash from financing activities			
		(8,968)	(23,841)
Net decrease in cash and cash equivalents		390,246	414,087
Cash and cash equivalents at beginning of the year		390,246	414,087
Cash and cash equivalents at end of the year	7	381,278	390,246

Statements of Cash Flows (cont'd)

Year ended 31 March 2024

	Note	Group	
		2024 \$'000	2023 \$'000
Note A:			
Purchase of property, plant and equipment:			
Additions of property, plant and equipment	4	35,187	47,737
Less: Non-cash movement for Right-of-Use Asset	4	(18,692)	-
Add: Opening accruals for the purchase of property, plant and equipment	12	3,288	7,155
Less: Closing accruals for the purchase of property, plant and equipment	12	(3,831)	(3,288)
		<u>15,952</u>	<u>51,604</u>

See accompanying notes to financial statements.

Notes to Financial Statements

Year ended 31 March 2024

1 Domicile and activities

The Authority is established as a statutory board in the Republic of Singapore under the Building and Construction Authority Act 1999 (the "Act"). The address of the Authority's registered office is 52 Jurong Gateway Road, #11-01, Singapore 608550.

The mission of the Authority is to transform the built environment sector and shape a liveable and smart built environment for Singapore. The principal activities of the subsidiaries are disclosed in Note 5 to the financial statements.

2 Basis of preparation

2.1 Statement of compliance

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. The related changes to material accounting policies are described in note 2.5.

2.2 Basis of measurement

The financial statements have been prepared on the historical cost basis except as otherwise described in the notes below.

2.3 Functional and presentation currency

These financial statements are presented in Singapore Dollars, which is the Authority's functional currency, unless otherwise stated.

2.4 Use of estimates and judgements

The preparation of the financial statements in conformity with SB-FRSs requires management to make judgements, estimates and assumptions that affect the application of accounting policies and the reported amounts of assets, liabilities, income and expenses. Actual results may differ from these estimates.

Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised in the period in which the estimates are revised and in any future periods affected.

Notes to Financial Statements (cont'd)

Year ended 31 March 2024

Information about significant areas of estimation uncertainty and critical judgements in applying accounting policies that have most significant effect on the amount recognised in the financial statements is included in the following notes:

- Note 3.7 (i) – provision for pension costs
- Note 3.8 – revenue recognition
- Note 3.3 (ii) – estimation of useful lives of property, plant and equipment
- Note 3.4 (i) – recoverability of trade and other receivables

The accounting policies used by the Group have been applied consistently to all periods presented in these financial statements.

2.5 Changes in accounting policies

New standards and amendments

On 1 April 2023, the Group and the Authority adopted all the new and revised SB-FRS pronouncements that are mandatorily effective and are relevant to its operations. The adoption of these new/revised SB-FRSs pronouncements did not result in changes to the Group's and the Authority's accounting policies and has no material effect on the disclosures or on amounts reported for the current or prior years except as below.

Amendments to SB-FRS 1 and SB FRS Practice Statement 2: Disclosure of Accounting Policies

The Group has adopted the amendments to SB-FRS 1 for the first time in the current year. The amendments change the requirements in SB-FRS 1 with regard to disclosure of accounting policies. Accounting policy information is material if, when considered together with other information included in an entity's financial statements, it can reasonably be expected to influence decisions that the primary users of general purpose financial statements make on the basis of those financial statements.

The supporting paragraphs in SB-FRS 1 are also amended to clarify that accounting policy information that relates to immaterial transactions, other events or conditions is immaterial and need not be disclosed. Accounting policy information may be material because of the nature of the related transactions, other events or conditions, even if the amounts are immaterial. However, not all accounting policy information relating to material transactions, other events or conditions is itself material.

The Group has applied materiality guidance in SB-FRS Practice Statement 2 in identifying its material accounting policies for disclosures in the related notes. The previous term 'significant accounting policies' used throughout the financial statements has been replaced with 'material accounting policy information'.

Notes to Financial Statements (cont'd)

Year ended 31 March 2024

3 Material accounting policies

The accounting policies set out below have been applied consistently to all periods presented in these financial statements, except as explained in note 2.5.

3.1 Basis of consolidation

Subsidiaries

Subsidiaries are entities controlled by the Group. The Group controls an entity when it is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. The financial statements of subsidiaries are included in the consolidated financial statements from the date that control commences until the date that control ceases.

The accounting policies of subsidiaries have been changed when necessary to align them with the policies adopted by the Group.

3.2 Financial instruments

(i) Recognition and initial measurement

Non-derivative financial assets and financial liabilities

Trade receivables are initially recognised when they are originated. All other financial assets and financial liabilities are initially recognised when the Group becomes a party to the contractual provisions of the instrument.

A financial asset (unless it is a trade receivable without a significant financing component) or financial liability is initially measured at fair value plus or minus, for an item not at fair value through profit or loss ("FVTPL"), transaction costs that are directly attributable to its acquisition or issue. A trade receivable without a significant financing component is initially measured at the transaction price.

(ii) Classification and subsequent measurement

Non-derivative financial assets

On initial recognition, a financial asset is classified as measured at: amortised cost; fair value through other comprehensive income ("FVOCI") – equity investment; or FVTPL.

Financial assets are not reclassified subsequent to their initial recognition unless the Group changes its business model for managing financial assets, in which case all affected financial assets are reclassified on the first day of the first reporting period following the change in the business model.

Financial assets at amortised cost

A financial asset is measured at amortised cost if it meets both of the following conditions and is not designated as at FVTPL:

- it is held within a business model whose objective is to hold assets to collect contractual cash flows; and
- its contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

Notes to Financial Statements (cont'd)

Year ended 31 March 2024

Financial assets: Business model assessment

The Group makes an assessment of the objective of the business model in which a financial asset is held at a portfolio level because this best reflects the way the business is managed and information is provided to management. The information considered includes:

- the stated policies and objectives for the portfolio and the operation of those policies in practice. These include whether management's strategy focuses on earning contractual interest income, maintaining a particular interest rate profile, matching the duration of the financial assets to the duration of any related liabilities or expected cash outflows or realising cash flows through the sale of the assets;
- how the performance of the portfolio is evaluated and reported to the Group's management;
- the risks that affect the performance of the business model (and the financial assets held within that business model) and how those risks are managed; and
- the frequency, volume and timing of sales of financial assets in prior periods, the reasons for such sales and expectations about future sales activity.

Transfers of financial assets to third parties in transactions that do not qualify for derecognition are not considered sales for this purpose, consistent with the Group's continuing recognition of the assets.

Financial assets that are held-for-trading or are managed and whose performance is evaluated on a fair value basis are measured at FVTPL.

Non-derivative financial assets: Assessment whether contractual cash flows are solely payments of principal and interest.

For the purposes of this assessment, 'principal' is defined as the fair value of the financial asset on initial recognition. 'Interest' is defined as consideration for the time value of money and for the credit risk associated with the principal amount outstanding during a particular period of time and for other basic lending risks and costs (e.g. liquidity risk and administrative costs), as well as a profit margin.

In assessing whether the contractual cash flows are solely payments of principal and interest, the Group considers the contractual terms of the instrument. This includes assessing whether the financial asset contains a contractual term that could change the timing or amount of contractual cash flows such that it would not meet this condition. In making this assessment, the Group considers:

- contingent events that would change the amount or timing of cash flows;
- terms that may adjust the contractual coupon rate, including variable rate features;
- prepayment and extension features; and
- terms that limit the Group's claim to cash flows from specified assets (e.g. non-recourse features).

Notes to Financial Statements (cont'd)

Year ended 31 March 2024

A prepayment feature is consistent with the solely payments of principal and interest criterion if the prepayment amount substantially represents unpaid amounts of principal and interest on the principal amount outstanding, which may include reasonable additional compensation for early termination of the contract. Additionally, for a financial asset acquired at a significant discount or premium to its contractual par amount, a feature that permits or requires prepayment at an amount that substantially represents the contractual par amount plus accrued (but unpaid) contractual interest (which may also include reasonable additional compensation for early termination) is treated as consistent with this criterion if the fair value of the prepayment feature is insignificant at initial recognition.

Non-derivative financial assets: Subsequent measurement and gains and losses.

Financial assets at amortised cost

These assets are subsequently measured at amortised cost using the effective interest method. The amortised cost is reduced by impairment losses. Interest income, foreign exchange gains and losses and impairment are recognised in profit or loss. Any gain or loss on derecognition is recognised in profit or loss.

Non-derivative financial liabilities: Classification, subsequent measurement and gains and losses

Financial liabilities are classified as measured at amortised cost or FVTPL. A financial liability is classified as at FVTPL if it is classified as held-for-trading or it is designated as such on initial recognition. Financial liabilities at FVTPL are measured at fair value and net gains and losses, including any interest expense, are recognised in profit or loss. Directly attributable transaction costs are recognised in profit or loss as incurred.

Other financial liabilities are initially measured at fair value less directly attributable transaction costs. They are subsequently measured at amortised cost using the effective interest method. Interest expense and foreign exchange gains and losses are recognised in profit or loss. These financial liabilities comprised trade and other payables.

(iii) Derecognition

Financial assets

The Group derecognises a financial asset when:

- the contractual rights to the cash flows from the financial asset expire, or
- it transfers the rights to receive the contractual cash flows in a transaction in which either:
 - substantially all of the risks and rewards of ownership of the financial asset are transferred or
 - the Group neither transfers nor retains substantially all of the risks and rewards of ownership and it does not retain control of the financial asset.

Transferred assets are not derecognised when the Group enters into transactions whereby it transfers assets recognised in its statement of financial position but retains either all or substantially all of the risks and rewards of the transferred assets.

Notes to Financial Statements (cont'd)

Year ended 31 March 2024

Financial liabilities

The Group derecognises a financial liability when its contractual obligations are discharged or cancelled, or expire. The Group also derecognises a financial liability when its terms are modified and the cash flows of the modified liability are substantially different, in which case a new financial liability based on the modified terms is recognised at fair value.

On derecognition of a financial liability, the difference between the carrying amount extinguished and the consideration paid (including any non-cash assets transferred or liabilities assumed) is recognised in profit or loss.

(iv) Cash and cash equivalents

Cash and cash equivalents comprise cash at bank and cash balances with the Accountant-General Department that are subject to an insignificant risk of change in their fair value.

For the purpose of the consolidated statement of cash flows, cash and cash equivalents comprise cash at bank and cash with the AGD excluding cash at bank not available for general use.

(v) Share capital

Ordinary shares

Pursuant to Finance Circular Minute No. M26/2008 on capital management framework for statutory boards, equity injection from the government is recorded as share capital.

(vi) Financial guarantees

Financial guarantees are financial instruments issued by the Group that require the issuer to make specified payments to reimburse the holder for the loss it incurs because a specified debtor fails to meet payment when due in accordance with the original or modified terms of a debt instrument.

Financial guarantees issued are initially measured at fair value. Subsequently, they are measured at the higher of the loss allowance determined in accordance with SB-FRS 109 and the amount initially recognised less, when appropriate, the cumulative amount of income recognised in accordance with the principles of SB-FRS 115.

Expected credit losses ("ECL") are a probability-weighted estimate of credit losses. ECLs are measured for financial guarantees issued as the expected payments to reimburse the holder less any amounts that the Authority expects to recover.

3.3 Property, plant and equipment

(i) Recognition and measurement

Items of property, plant and equipment are measured at cost, which includes capitalised borrowing costs, less accumulated depreciation and accumulated impairment losses.

Notes to Financial Statements (cont'd)

Year ended 31 March 2024

Cost includes expenditure that is directly attributable to the acquisition of the asset. The cost of self-constructed assets includes:

- the cost of materials and direct labour;
- any other costs directly attributable to bringing the assets to a working condition for their intended use; and
- when the Group has an obligation to remove the asset or restore the site, an estimate of the costs of dismantling and removing the items and restoring the site on which they are located.

Purchased software that is integral to the functionality of the related equipment is capitalised as part of that equipment.

If significant parts of an item of property, plant and equipment have different useful lives, they are accounted for as separate items (major components) of property, plant and equipment.

Any gain or loss on disposal of an item of property, plant and equipment (calculated as the difference between the net proceeds from disposal and the carrying amount of the item) is recognised in profit or loss.

(ii) Depreciation

Depreciation is based on the cost of an asset less its residual value. Significant components of individual assets are assessed and if a component has a useful life that is different from the remainder of that asset, that component is depreciated separately.

Depreciation is recognised as an expense in profit or loss on a straight-line basis over the estimated useful lives of each component of an item of property, plant and equipment, unless it is included in the carrying amount of another asset.

Depreciation is recognised from the date that the property, plant and equipment are installed and are ready for use, or in respect of internally constructed assets, from the date that the asset is completed and ready for use.

The estimated useful lives for the current year are as follows:

- | | |
|------------------------------------------------------------------|-----------------|
| • Right-of-use assets | 2 and 30 years |
| • Office buildings and structures | 29 and 30 years |
| • Site office and land improvement | 10 years |
| • Office, training and mechanical & electrical ("M&E") equipment | 5 to 10 years |
| • Furniture, fittings and fixtures | 8 years |
| • Data processing equipment | 3 to 5 years |

Depreciation methods, useful lives and residual values are reviewed at the end of each reporting period and adjusted if appropriate.

Notes to Financial Statements (cont'd)

Year ended 31 March 2024

3.4 Impairment

(i) Non-derivative financial assets

The Group recognises loss allowances for expected credit losses ("ECLs") on financial assets measured at amortised cost.

Loss allowances of the Group are measured on either of the following bases:

- 12-month ECLs: these are ECLs that result from default events that are possible within the 12 months after the reporting date (or for a shorter period if the expected life of the financial asset is less than 12 months); or
- Lifetime ECLs: these are ECLs that result from all possible default events over the expected life of a financial asset or contract asset.

Simplified approach

The Group applies the simplified approach to provide for ECLs for all trade receivables. The simplified approach requires the loss allowance to be measured at an amount equal to lifetime ECLs.

General approach

The Group applies the general approach to provide for ECLs on all other financial assets. Under the general approach, the loss allowance is measured at an amount equal to 12-month ECLs at initial recognition.

At each reporting date, the Group assesses whether the credit risk of a financial asset has increased significantly since initial recognition. When credit risk has increased significantly since initial recognition, loss allowance is measured at an amount equal to lifetime ECLs.

When determining whether the credit risk of a financial asset has increased significantly since initial recognition and when estimating ECLs, the Group considers reasonable and supportable information that is relevant and available without undue cost or effort. This includes both quantitative and qualitative information and analysis, based on the Group's historical experience and informed credit assessment and includes forward-looking information.

If credit risk has not increased significantly since initial recognition or if the credit quality of the financial assets improves such that there is no longer a significant increase in credit risk since initial recognition, loss allowance is measured at an amount equal to 12-month ECLs.

The Group considers a financial asset to be in default when the borrower is unlikely to pay its credit obligations to the Group in full, without recourse by the Group to actions such as realising security (if any is held).

The maximum period considered when estimating ECLs is the maximum contractual period over which the Group is exposed to credit risk.

Notes to Financial Statements (cont'd)

Year ended 31 March 2024

Measurement of ECLs

ECLs are probability-weighted estimates of credit losses. Credit losses are measured at the present value of all cash shortfalls (i.e. the difference between the cash flows due to the Group in accordance with the contract and the cash flows that the Group expects to receive).

Credit-impaired financial assets

At each reporting date, the Group assesses whether financial assets carried at amortised cost are credit-impaired. A financial asset is 'credit-impaired' when one or more events that have a detrimental impact on the estimated future cash flows of the financial asset have occurred.

Evidence that a financial asset is credit-impaired includes the following observable data:

- significant financial difficulty of the borrower or issuer;
- breach of contract such as a default;
- the restructuring of a loan or advance by the Group on terms that the Group would not consider otherwise; or
- it is probable that the borrower will enter bankruptcy or other financial reorganisation.

Presentation of allowance for ECLs in the statement of financial position

Loss allowances for financial assets measured at amortised cost are deducted from the gross carrying amount of these assets.

Write-off

The gross carrying amount of a financial asset is written off (either partially or in full) to the extent that there is no realistic prospect of recovery. This is generally the case when the Group determines that the debtor does not have assets or sources of income that could generate sufficient cash flows to repay the amounts subject to the write-off. However, financial assets that are written off could still be subject to enforcement activities in order to comply with the Group's procedures for recovery of amounts due.

(ii) Non-financial assets

The carrying amounts of the Group's non-financial assets are reviewed at each reporting date to determine whether there is any indication of impairment. If any such indication exists, then the asset's recoverable amount is estimated. An impairment loss is recognised if the carrying amount of an asset or its related cash-generating unit ("CGU") exceeds its estimated recoverable amount.

The recoverable amount of an asset or CGU is the greater of its value in use and its fair value less costs of disposal. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset or CGU. For the purpose of impairment testing, assets that cannot be tested individually are grouped together into the smallest group of assets that generates cash inflows from continuing use that are largely independent of the cash inflows of other assets or CGUs.

Notes to Financial Statements (cont'd)

Year ended 31 March 2024

Impairment losses are recognised in profit or loss. Impairment losses recognised in respect of CGUs are allocated to reduce the carrying amounts of the other assets in the CGU (group of CGUs) on a pro rata basis.

Impairment losses recognised in prior periods are assessed at each reporting date for any indications that the loss has decreased or no longer exists. An impairment loss is reversed if there has been a change in the estimates used to determine the recoverable amount. An impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortisation, if no impairment loss had been recognised.

3.5 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 statements of financial position.

Trust and agency funds are reported on a cash basis.

3.6 Employee benefits

(i) 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.

(ii) 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.

(iii) 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 Statements of financial position in accordance with the Pensions Act 1956.

The Authority had engaged an actuarial to assess the provision for pension costs.

An actuarial valuation is conducted once every three 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

Notes to Financial Statements (cont'd)

Year ended 31 March 2024

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.

(iv) 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.

3.7 Provisions

Provisions are recognised when the Group has a present or constructive obligation that can be estimated reliably, and it is probable that an outflow of economic benefits will be required to settle the obligation. Provisions are determined by discounting the expected future cash flows at a pre-tax rate that reflects current market assessments of the time value of money and the risks specific to the liability. The unwinding of the discount is recognised as finance cost.

(i) Provision for pension cost

As described in Notes 3.6(iii) and 10(a), the Group determines the provision for pension cost due to pensionable officers based on the expected pay-outs to be made by the Group in respect of services provided by these pensionable officers up to reporting date.

Any possible change in key assumptions, on which the provision for pension is based, will affect the amount of employee benefit costs in the income and expenditure account.

(ii) 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 will be 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.

Notes to Financial Statements (cont'd)

Year ended 31 March 2024

3.8 Revenue

Revenue is recognised when the Group satisfies a performance obligation ("PO") by transferring control of a promised good or service to the customer. The amount of revenue recognised is the amount of the transaction price allocated to the satisfied PO. 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 each category of project (by size and nature of work). Judgement is required to determine the expected duration of each category of projects based on historical information on the duration required to complete the 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 and green mark assessment 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; and
- Management fees are recognised as income over the period of services rendered.

Source of estimation uncertainty

Plan fees are recognised as income over the expected duration of each category of projects. The Group reviews the estimated duration of the projects regularly to determine the amount of revenue to be recorded at each financial year. Changes in the expected duration of the projects could impact the revenue and consequently affect the Group's results.

3.9 Government grants

Government grants are recognised initially at fair value when there is reasonable assurance that they will be received and the Group will comply with all the conditions associated with the grants.

(i) Operating grants from Government

Government grants that compensate the Group for expenses incurred are recognised in profit or loss on a systematic basis in the same periods in which the expenses are recognised.

(ii) Development grants

Government grants received from other agencies for specific development project expenditure are recognised as grant received in advance on the statement of financial position and are recognised in profit or loss on a systematic basis in the same periods in which the development expenses are recognised.

Notes to Financial Statements (cont'd)

Year ended 31 March 2024

3.10 Leases

At inception of a contract, the Group assesses whether a contract is, or contains, a lease. A contract is, or contains, a lease if the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration.

(i) As a lessee

At commencement or on modification of a contract that contains a lease component, the Group allocates the consideration in the contract to each lease component on the basis of its relative stand-alone prices. However, for the leases of property, the Group has elected not to separate non-lease components and account for the lease and non-lease components as a single lease component.

The Group recognises a right-of-use asset and a lease liability at the lease commencement date. The right-of-use asset is initially measured at cost, which comprises the initial amount of the lease liability adjusted for any lease payments made at or before the commencement date, plus any initial direct costs incurred and an estimate of costs to dismantle and remove the underlying asset or to restore the underlying asset or the site on which it is located, less any lease incentives received.

The right-of-use asset is subsequently depreciated using the straight-line method from the commencement date to the end of the lease term, unless the lease transfers ownership of the underlying asset to the Group by the end of the lease term or the cost of the right-of-use asset reflects that the Group will exercise a purchase option. In that case the right-of-use asset will be depreciated over the useful life of the underlying asset, which is determined on the same basis as those of property and equipment. In addition, the right-of-use asset is periodically reduced by impairment losses, if any, and adjusted for certain remeasurements of the lease liability.

The lease liability is initially measured at the present value of the lease payments that are not paid at the commencement date, discounted using the interest rate implicit in the lease or, if that rate cannot be readily determined, the Group's incremental borrowing rate. Generally, the Group uses its incremental borrowing rate as the discount rate.

The Group determines its incremental borrowing rate by using Ministry of Finance's risk-free rate, with adjustments made for tenure, to reflect the terms of the lease and type of the asset leased.

Lease payments included in the measurement of the lease liability comprise the fixed payments, including in-substance fixed payments. The lease liability is measured at amortised cost using the effective interest method. It is remeasured when there is a change in future lease payments arising from a change in an index or rate, if the Group changes its assessment of whether it will exercise a purchase, extension or termination option or if there is a revised in-substance fixed lease payment.

When the lease liability is remeasured in this way, a corresponding adjustment is made to the carrying amount of the right-of-use asset, or is recorded in profit or loss if the carrying amount of the right-of-use asset has been reduced to zero.

Short-term leases and leases of low-value assets

The Group has elected not to recognise right-of-use assets and lease liabilities for leases of low-value assets and short-term leases, including IT equipment. The Group recognises the lease payments associated with these leases as an expense on a straight-line basis over the lease term.

Notes to Financial Statements (cont'd)

Year ended 31 March 2024

(ii) As a lessor

At inception or on modification of a contract that contains a lease component, the Group allocates the consideration in the contract to each lease component on the basis of their relative stand-alone prices.

When the Group acts as a lessor, it determines at lease inception whether each lease is a finance lease or an operating lease.

To classify each lease, the Group makes an overall assessment of whether the lease transfers substantially all of the risks and rewards incidental to ownership of the underlying asset. If this is the case, then the lease is a finance lease; if not, then it is an operating lease. As part of this assessment, the Group considers certain indicators such as whether the lease is for the major part of the economic life of the asset.

When the Group is an intermediate lessor, it accounts for its interests in the head lease and the sub-lease separately. It assesses the lease classification of a sub-lease with reference to the right-of-use asset arising from the head lease, not with reference to the underlying asset. If a head lease is a short-term lease to which the Group applies the exemption described above, then it classifies the sub-lease as an operating lease.

3.11 Statutory contribution to consolidated fund

The Authority is required to make contributions to the Consolidation Fund in accordance with the Statutory Corporation (Contributions to Consolidated Fund) Act 1989 and in accordance with the Finance Circular Minute No. M5/2005 with effect from 2004/2005. The contribution is based on a percentage, as decided by Ministry of Finance, of the net surplus of the Authority (before donations) for the financial period. Contribution to consolidated fund is provided for on an accrual basis.

3.12 Interest income

Interest income is recognised as it accrues in the statement of comprehensive income, using the effective interest method.

3.13 Tax

Current tax is recognised in profit or loss.

Current tax is the expected tax payable or receivable on the taxable income or loss for the year, using tax rates enacted or substantively enacted at the reporting date, and any adjustment to tax payable in respect of previous years. The amount of current tax payable or receivable is the best estimate of the tax amount expected to be paid that reflects the uncertainty related to income taxes, if any.

In determining the amount of current tax, the Group takes into account the impact of uncertain tax positions and whether additional taxes and interest may be due. The Group believes that its accruals for tax liabilities are adequate for all open tax years based on its assessment of many factors, including interpretations of tax law and prior experience. This assessment relies on estimates and assumptions and may involve a series of judgements about future events. New information may become available that causes the Group to change its judgement regarding the adequacy of existing tax liabilities; such changes to tax liabilities will impact tax expense in the period that such a determination is made.

Notes to Financial Statements (cont'd)

Year ended 31 March 2024

3.14 Standards issued but not yet effective.

At the date of authorisation of these financial statements, the Group and the Authority have not applied the following SB-FRSs pronouncements that have been issued but are not yet effective:

Effective for annual periods beginning on or after 1 January 2024

- Amendments to SB-FRS(I) 1-1: *Classification of Liabilities as Current or Non-current*

Notes to Financial Statements (cont'd)

Year ended 31 March 2024

4 Property, plant and equipment

The Group and the Authority reviews annually the estimated useful life of property, plant and equipment based on factors such as business plans and strategies, expected level of usage and future technological developments. It is possible that future results of operations could be materially affected by changes in these estimates brought about by changes in the factors mentioned above. A reduction in the estimated useful life of property, plant and equipment would increase the net deficit and decrease the carrying value of property, plant and equipment.

	Right-of-use assets	Office buildings and structures	Site office and land improvement	Office, training and M&E equipment	Furniture, fitting and fixtures	Data processing equipment	Assets under construction	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Group and Authority								
Cost:								
Balance at 1 April 2022	88,270	56,762	1,986	27,413	31,843	38,633	73,041	317,948
Additions	339	-	-	31	3	3,854	43,510	47,737
Reclassification	-	-	-	-	-	6,059	(6,059)	-
Disposal ⁽ⁱ⁾	(10,999)	-	-	-	-	-	-	(10,999)
Written-off ⁽ⁱⁱ⁾	-	(464)	-	(979)	(388)	(3,468)	-	(5,299)
At 31 March 2023	77,610	56,298	1,986	26,465	31,458	45,078	110,492	349,387
Additions	18,692	595	-	2,046	1,393	5,020	7,441	35,187
Reclassification	-	71,537	-	12,005	-	647	(84,189)	-
Disposal ⁽ⁱ⁾	-	-	-	(603)	-	-	-	(603)
Written-off ⁽ⁱⁱ⁾	-	-	-	(2,470)	(2,422)	(5,545)	-	(10,437)
At 31 March 2024	96,302	128,430	1,986	37,443	30,429	45,200	33,744	373,534

Notes to Financial Statements (cont'd)

Year ended 31 March 2024

	Right-of-use assets	Office buildings and structures	Site office and land improvement	Office, training and M&E equipment	Furniture, fitting and fixtures	Data processing equipment	Assets under construction	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Group and Authority								
Accumulated depreciation:								
Balance at 1 April 2022	29,138	36,768	1,386	24,959	26,093	30,504	-	148,848
Depreciation for the year	7,226	925	175	679	2,944	4,236	-	16,185
Disposals ⁽ⁱ⁾	(10,999)	-	-	-	-	-	-	(10,999)
Written-off ⁽ⁱⁱ⁾	-	(181)	-	(979)	(377)	(3,468)	-	(5,005)
At 31 March 2023	25,365	37,512	1,561	24,659	28,660	31,272	-	149,029
Depreciation for the year	7,886	3,160	175	1,880	1,291	4,424	-	18,816
Disposals ⁽ⁱ⁾	-	-	-	(603)	-	-	-	(603)
Written-off ⁽ⁱⁱ⁾	-	-	-	(2,470)	(2,215)	(5,389)	-	(10,074)
At 31 March 2024	33,251	40,672	1,736	23,466	27,736	30,307	-	157,169
Carrying amounts:								
At 31 March 2023	52,245	18,786	425	1,806	2,798	13,806	110,492	200,358
At 31 March 2024	63,051	87,758	250	13,977	2,693	14,893	33,744	216,366

Property, plant and equipment includes right-of-use assets of \$58,991,000 (2023: \$42,493,000) relating to leasehold land and \$4,060,000 (2023: \$9,752,000) relating to office buildings and structures. See Note 22.

⁽ⁱ⁾ Assets disposed refer to assets that have been sold or whose right-of-use has expired.

⁽ⁱⁱ⁾ Assets written-off refer to assets that that have been discarded without any sale proceeds.

Notes to Financial Statements (cont'd)

Year ended 31 March 2024

5 Investments in subsidiaries

Unquoted shares at cost are at \$2 (2023: \$2).

The subsidiaries at 31 March 2024 are:

Name of subsidiaries	Country of incorporation and principal place of business	Principal activities	Percentage of ownership interest	
			2024	2023
			%	%
BCA International Private Limited	Singapore	Construction-related consultancy and advisory services	100	100
Built Environment Technology Alliance Ltd	Singapore	Research and experimental development on engineering	100	100

6 Trade and other receivables

	Group		Authority	
	2024	2023	2024	2023
	\$'000	\$'000	\$'000	\$'000
Trade receivables	16,014	13,428	15,931	13,075
Other receivables	4,858	9,852	4,775	9,044
Lease receivables	208,712	48,722	208,712	48,722
Grant receivable	192	1,921	192	1,921
Amounts due from subsidiaries	-	-	524	541
Deposits	15	101	15	101
Trade and other receivables	229,791	74,024	230,149	73,404
Prepayments	1,663	1,695	1,663	1,638
Total trade and other receivables	231,454	75,719	231,812	75,042
Represented by:				
Current	98,011	51,437	98,369	50,760
Non-current	133,443	24,282	133,443	24,282
	231,454	75,719	231,812	75,042

Other receivables

The other receivables are mainly interests receivables from Accountant-General's Department ("AGD") under the Centralised Liquidity Management ("CLM") scheme and amount due from sundry debtors.

Amounts due from subsidiaries

The amounts due from subsidiaries are unsecured, interest-free, repayable on demand and are to be settled in cash. The outstanding balances are not impaired as at the financial year end.

Notes to Financial Statements (cont'd)

Year ended 31 March 2024

Impairment losses

In determining the recoverability of a receivable, the Group considers any change in the credit quality of the receivables from the date credit was initially granted up to the reporting date. 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 creditworthiness of the Group's customers and that majority of the Group's trade receivables are within their expected cash collection cycle.

Source of estimation uncertainty

The Group evaluates at the end of each reporting period whether there is any objective evidence that trade and other receivables are impaired and determines the amount of impairment loss as a result of the inability of the customers to make required payments having considered the probability of insolvency and credit-worthiness of its receivables except for the impaired receivables, the Group believes that no impairment loss is necessary in respect of the remaining receivables due to the good track record of its customers.

The Group's exposure to credit risk and impairment losses from trade and other receivables are disclosed in note 24.

7 Cash and bank balances

	Group		Authority	
	2024	2023	2024	2023
	\$'000	\$'000	\$'000	\$'000
Cash at bank	12,344	18,599	1,838	8,609
Cash with the AGD	408,494	405,073	408,494	405,073
	420,838	423,672	410,332	413,682
Less: Cash at bank not available for general use	(39,560)	(33,426)	(39,560)	(33,426)
Cash and cash equivalents in cashflow statement	381,278	390,246	370,772	380,256

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 2024 is 3.38% per annum (2023: 1.56% per annum).

Notes to Financial Statements (cont'd)

Year ended 31 March 2024

8 Fees received in advance

	Group		Authority	
	2024 \$'000	2023 \$'000	2024 \$'000	2023 \$'000
At beginning of the year	84,797	85,548	81,049	82,053
Add: Fees received	105,406	123,879	105,166	123,266
Less: Fees recognised as revenue	(101,239)	(124,630)	(100,440)	(124,270)
At end of the year	88,964	84,797	85,775	81,049
Represented by:				
Current	54,705	57,139	51,516	53,391
Non-current	34,259	27,658	34,259	27,658
	88,964	84,797	85,775	81,049

Amounts relating to fees received in advance are balances received from customers for services to be performed by the Group and the Authority. The Group and the Authority will recognise contract liability for payment received and work has not been performed. Any amount previously recognised as a contract liability is recognised in revenue when the services are delivered to the customer.

There are no significant changes in the contract liabilities balances during the reporting period.

The following table shows how much of the revenue recognised in the current reporting period relates to brought-forward fees received in advance. There was no revenue recognised in the current reporting period that related to performance obligations that were satisfied in a prior year.

	Group		Authority	
	2024 \$'000	2023 \$'000	2024 \$'000	2023 \$'000
Operating income	53,929	54,781	53,179	54,370

9 Lease Liabilities

	Group and Authority	
	2024 \$'000	2023 \$'000
Maturity analysis:		
- Less than one year	86,393	41,274
- One to two years	75,978	11,893
- Two to three years	41,956	1,507
- Three to four years	9,756	1,285
- Four to five years	9,756	1,285
- More than five years	25,169	19,170
Total undiscounted lease liabilities	249,008	76,414
Unearned interest	(18,414)	(8,531)
Net lease liabilities	230,594	67,883
Analysed as:		
Current	79,994	39,929
Non-current	150,600	27,954
	230,594	67,883

Notes to Financial Statements (cont'd)

Year ended 31 March 2024

Reconciliation of movement of liabilities to cash flows arising from financing activities

	Lease liabilities	
	2024 \$'000	2023 \$'000
Balance as at 1 April	67,883	108,685
Changes from financing cash flows		
Payment of lease liabilities	(57,966)	(45,177)
Interest paid	(4,695)	(2,556)
Total changes from financing cash flows	(62,661)	(47,733)
Other changes		
Interest expense	4,695	2,588
New leases	234,215	4,343
Re-measurement of lease liability	952	-
Waiver of payment by lessor	(14,490)	-
Total other changes	225,372	6,931
Balance as at 31 March	230,594	67,883

The Group and the Authority do not face a significant liquidity risk with regard to its lease liabilities. Lease liabilities are monitored within the Group's and the Authority's finance function.

10 Provisions

(a) Provision for pension costs

	Group and Authority	
	2024 \$'000	2023 \$'000
At beginning of the year	2,788	2,911
Add: Amount provided during the year	62	65
	2,850	2,976
Less: Pension paid during the year	(188)	(188)
At end of the year	2,662	2,788
Represented by:		
Current	183	183
Non-current	2,479	2,605
	2,662	2,788

The above provision includes the provision for pension costs for 12 (2023: 12) pensioners who have exercised the option for reduced pension with gratuity payment under the pension scheme other than CPF. There is no employee 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.

Notes to Financial Statements (cont'd)

Year ended 31 March 2024

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

- (i) Full pension;
- (ii) Reduced pension with gratuity payment; or
- (iii) Fully commuted pension gratuity.

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.

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

These defined benefit plans expose the Group to actuarial risks, such as longevity risk and interest rate risk.

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

- Discount rate – Gratuity : 2.3% per annum (2023: 2.3% per annum)
- Discount rate – Pension : 2.3% per annum (2023: 2.3% per annum)
- Expected salary increment : Nil (2023: Nil)
- Mortality rate : Singapore Mortality Table
- Expected retirement age : 62(2023: 62)

Assumptions regarding future mortality have been based on published statistics and mortality tables. The current longevities underlying the values of the defined benefit obligation at the reporting date were as follows:

	2024	2023
<u>Longevity at age 62 for current pensioners</u>		
Males	24	24
Females	26	26

At 31 March 2024, the weighted-average duration of the defined benefit obligation was 11 years (2023: 11 years).

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 all other assumptions were held constant:

	Group and Authority			
	2024		2023	
	Increase/ (decrease)	\$'000	Increase/ (decrease)	\$'000
Discount rates	+ 25 basis points	(58)	+ 25 basis points	(63)
	- 25 basis points	61	- 25 basis points	66
Mortality rates	+ 1 year	107	+ 1 year	105
	- 1 year	(109)	- 1 year	(107)

Notes to Financial Statements (cont'd)

Year ended 31 March 2024

(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	
	2024	2023
	\$'000	\$'000
At beginning of the year	2,447	2,062
Add: Amount provided during the year	-	339
Add: Unwinding of discount on reinstatement costs provision	32	46
At end of the year	2,479	2,447
Represented by:		
Non-current	2,479	2,447

11 Deferred capital grants

	Group and Authority	
	2024	2023
	\$'000	\$'000
At beginning of the year	10,924	7,839
Add: Government grants received/receivable		
- Transferred from grants received in advance	-	2,913
- Assets funded by grants	185	1,209
Less: Amortisation of deferred capital grants	(7,346)	(1,037)
At end of the year	3,763	10,924
Represented by:		
Current	656	1,554
Non-current	3,107	9,370
	3,763	10,924

Notes to Financial Statements (cont'd)

Year ended 31 March 2024

12 Other payables and accruals

	Group		Authority	
	2024 \$'000	2023 \$'000	2024 \$'000	2023 \$'000
Amounts due to MND ⁽ⁱ⁾	10,767	15,799	10,767	15,799
Amounts due to Maritime and Port Authority of Singapore ("MPA") ⁽ⁱⁱ⁾	588	750	588	750
Amounts due to subsidiary - non-trade ⁽ⁱⁱⁱ⁾	-	-	-	12
Maintenance deposits	8	8	8	8
Sundry creditors ^(iv)	869	3,045	864	3,035
Accruals for unconsumed leave	5,620	5,543	5,620	5,543
Accruals for operating expenses	20,135	20,430	20,135	20,430
Advances received for Corenet 2.0 ^(v)	6,184	7,720	6,184	7,720
Accruals for the purchase of property, plant and equipment	3,831	3,288	3,831	3,288
Security/tender deposits ^(vi)	9,848	11,993	9,848	11,993
Scholarships	1,983	2,812	1,983	2,811
Total other payables and accruals	59,833	71,388	59,828	71,389

(i) The amounts collected on their behalf by the Authority for certain projects which the Group acts as an agent, are unsecured, interest-free, repayable on demand and are to be settled in cash.

MND has programs to support initiatives in developing Singapore's economy which the Authority administers for MND. These projects include infrastructural development undertaken on behalf of the government, consultancy works and managing government quarantine facilities.

The Authority disbursed funds to external parties who participated in these programs. The agency funds payable/receivable from the MND relates to the amount that is received in advance/to be reimbursed by MND for amounts disbursed. During the year, the agency funds amounts received from MND and disbursed to external parties are \$6,754,000 (2023: \$22,203,000) and \$8,724,000 (2023: \$23,729,000) respectively.

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

(iii) Amount due to subsidiary is unsecured, interest-free and repayable on demand.

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

(v) This amount was collected in advance from participating agencies in the development of Corenet 2.0.

(vi) Included in security/tender deposits is an amount of \$3,515,000 (2023: \$6,372,000) collected under the Balcony Bonus Gross Floor Area Incentive Scheme and \$2,622,000 (2023: \$2,622,000) collected under the Green Mark Gross Floor Area Incentive Scheme.

Notes to Financial Statements (cont'd)

Year ended 31 March 2024

13 Grants received in advance

Note	Operating grants		Development grants		Total	
	2024 \$'000	2023 \$'000	2024 \$'000	2023 \$'000	2024 \$'000	2023 \$'000
Group and Authority						
At 1 April	-	-	88	75	88	75
Government grants received/receivable	83,981	83,985	(88)	-	83,893	83,985
Interest earned	-	-	-	13	-	13
Transfer to deferred capital grants	-	(2,913)	-	-	-	(2,913)
Transfer to income or expenditure	(83,981)	(81,072)	-	-	(83,981)	(81,072)
At 31 March	-	-	-	88	-	88

14 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 1989 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 FY2023/2024 is the prevailing corporate tax of 17% (2023: 17%).

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

	Authority	
	2024 \$'000	2023 \$'000
Surplus of the Authority subject to contribution	7,911	25,172
Contribution at 17% (2023: 17%)	1,345	4,279

15 Share capital

	Group and Authority			
	2024		2023	
	No. of shares	\$'000	No. of shares	\$'000
Issued and fully paid up:				
At beginning of the year	36,887,178	36,887	29,827,178	29,827
Issue of ordinary shares	17,056,185	17,056	7,060,000	7,060
At 31 March	53,943,363	53,943	36,887,178	36,887

Injection of capital is part of the Capital Management Framework for Statutory Boards under Finance Circular Minute M26/2008. The shares have been fully paid and are held by the Minister for Finance, a body incorporated by the Minister for Finance (Incorporation) Act 1959.

Notes to Financial Statements (cont'd)

Year ended 31 March 2024

16 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.

17 Net assets of trust and agency funds

The trust and agency funds comprise 13 funds (2023: 16 funds) managed by the Authority on behalf of other agencies.

The following funds were set up 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.

(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) *Built Environment Assistance Package*

The Built Environment Assistance Package is one of the support measures approved by Ministry of Finance as part of the Fortitude Budget announced in May 2020 to help the Built Environment sector amid the COVID-19 pandemic.

Notes to Financial Statements (cont'd)

Year ended 31 March 2024

The following funds were granted by the Productivity Fund Administration Board:

(h) *Construction Productivity and Capability Fund*

The Construction Productivity and Capability Fund inclusive of Construction Industry Transformation Map grant aims to transform the construction sector through workforce development, technology adoption and capability development.

(i) *SkillsFuture Study Awards for Built Environment Sector*

The SkillsFuture Study Awards targets Singaporeans in their early to mid-career stages 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 fund was set up by Ministry of National Development and Sino-Singapore Tianjin Eco-City Administrative Committee (ECAC):

(j) *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 funds were set up by the National Research Fund:

(k) *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.

The following fund was granted by Workforce Singapore:

(l) *Professional Conversion Programme for BIM Professionals*

The Professional Conversion Programme aims to equip mid-career job seekers with the necessary knowledge and skills to take on a new career in the built environment industry.

The following grant was launched by the Authority, National Environment Agency and Economic Development Board:

(m) *Grant for Low-GWP Refrigerant Chillers*

The Grant for Low-GWP (Global Warming Potential) Refrigerant Chillers aims to encourage companies to make an early switch to water-cooled chillers using lower GWP refrigerants. The Authority will be administering the grant for existing buildings.

Notes to Financial Statements (cont'd)

Year ended 31 March 2024

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	
	2024	2023
	\$'000	\$'000
At beginning of the year	25,739	18,324
Add: Receipts		
- Grants received	25,946	46,148
- Cash float to trust fund	-	1,500
- Interest income	417	48
- Others	62	167
	<u>26,425</u>	<u>47,863</u>
Less: Disbursements to:		
- External Parties	(31,744)	(37,700)
- The Authority	(1,614)	(1,615)
Admin grants paid to the Authority	(1,390)	(1,111)
Fund returned due to project closure	(20)	(22)
	<u>(34,768)</u>	<u>(40,448)</u>
At end of the year	<u>17,396</u>	<u>25,739</u>
Represented by:		
Cash at bank	3,954	7,508
Cash with AGD	13,442	18,231
Total cash representing net assets as at 31 March	<u>17,396</u>	<u>25,739</u>

18 Commitment

Capital commitments

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

	Group and Authority	
	2024	2023
	\$'000	\$'000
Amount approved and committed	<u>54,470</u>	<u>57,536</u>
Amount approved but not committed	<u>7,633</u>	<u>550</u>

Notes to Financial Statements (cont'd)

Year ended 31 March 2024

19 Employee benefit costs

	Group		Authority	
	2024	2023	2024	2023
	\$'000	\$'000	\$'000	\$'000
Salaries, allowances and bonus	116,097	114,942	116,097	114,942
Central Provident Fund contribution	15,349	16,029	15,349	16,029
Pension benefits	62	65	62	65
Other staff costs	5,776	3,843	5,776	3,843
	<u>137,284</u>	<u>134,879</u>	<u>137,284</u>	<u>134,879</u>

20 Tax expense

Subsidiaries of the Authority are subject to tax under Section 10(1) and Section 11(2) of the Singapore Income Tax Act 1947:

	Group	
	2024	2023
	\$'000	\$'000
Current tax expense		
Current year	27	77
Over provision in prior year	-	(18)
	<u>27</u>	<u>59</u>

Reconciliation of effective tax rate

Surplus before contribution to consolidated fund and taxation	8,172	25,711
Less: The Authority's surplus before contribution to consolidated fund and income tax expense	(7,911)	(25,172)
Subsidiaries' surplus before income tax expense	<u>261</u>	<u>539</u>
Tax at statutory rate of 17% (2023: 17%)	44	92
Tax exempt income	(17)	(17)
Non-deductible items	-	2
Over provision in prior year	-	(18)
Tax expense	<u>27</u>	<u>59</u>

Notes to Financial Statements (cont'd)

Year ended 31 March 2024

21 Surplus/(Deficit) for the year

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

	Group		Authority	
	2024 \$'000	2023 \$'000	2024 \$'000	2023 \$'000
Bad debt provision written back	(9,792)	-	(9,792)	-
Builders licensing fees	(2,455)	(2,372)	(2,455)	(2,372)
Importers licensing fees	(3,450)	(3,129)	(3,450)	(3,129)
Impairment loss on receivables	1,302	1,126	1,302	1,126
Input GST disallowed	4,863	4,100	4,863	4,100
Property tax	1,250	1,250	1,250	1,250
Contribution to consolidated fund	1,345	4,279	1,345	4,279
Board members' allowances	124	113	124	113
Foreign exchange loss	16	3	16	3
Interest income:				
- Interest income from cash and cash equivalents	12,471	5,382	12,455	5,382
- Interest income on lease receivables	4,083	2,179	4,083	2,179
	<u>16,554</u>	<u>7,561</u>	<u>16,538</u>	<u>7,561</u>
Interest expenses:				
- Interest expenses on lease liabilities	4,695	2,588	4,695	2,588
- Unwinding of discount on reinstatement costs provision	32	46	32	46
- (Waiver on interest)/interest expense on late payment, net	(706)	264	(706)	264
	<u>4,021</u>	<u>2,898</u>	<u>4,021</u>	<u>2,898</u>

22 Leases

Leases as lessee (SB-FRS 116)

The Group leases several assets including leasehold land, foreign workers' dormitories, integrated construction and precast hubs, office space and others. The average lease term is 5 years for office buildings and structures and 30 years for leasehold land and building (2023: 5 years and 30 years respectively).

The extension and termination options on the lease have been considered in the leases of the Group and the Authority.

All lease liabilities are transacted with other Statutory Boards. Information about leases for which the Group is a lessee is presented below.

Right-of-use assets

Right-of-use assets related to leased properties that do not meet the definition of investment property and are presented as property, plant and equipment (see note 4).

Notes to Financial Statements (cont'd)

Year ended 31 March 2024

Group and Authority

	Leasehold land and building \$'000	Office buildings and structures \$'000	Total \$'000
Balance at 1 April 2022	44,072	15,060	59,132
Additions to right-of-use assets	4,343	339	4,682
Depreciation charge for the year	(1,579)	(5,647)	(7,226)
Derecognition of right-of-use assets as a result of entering into finance sub-lease	(4,343)	-	(4,343)
Balance at 31 March 2023	42,493	9,752	52,245
Additions to right-of-use assets	252,748	159	252,907
Depreciation charge for the year	(2,035)	(5,851)	(7,886)
Derecognition of right-of-use assets as a result of entering into finance sub-lease	(234,215)	-	(234,215)
Balance at 31 March 2024	<u>58,991</u>	<u>4,060</u>	<u>63,051</u>

- (a) The foreign workers' dormitories leased from Singapore Land Authority has a remaining tenure ranging from 1 year to 5 years. The integrated construction and precast hub leased from JTC Corporation has a remaining tenure of 19 years. The foreign workers' dormitories and integrated construction and precast hub were sub-leased to third parties with the same tenure period. For the integrated construction and precast hub, the sublease was terminated. BCA is in the progress of sourcing for a new tenant.
- (b) The Group leases industrial lands for the development of the integrated construction and precast hub. As the leases were prepaid by the Group, no lease liabilities were recognised.
- (c) During the financial year, the Group renewed leases for foreign workers' dormitories. The foreign workers' dormitories leased from Singapore Land Authority is for the period till 2029. As a result of entering into these finance sub-leases, lease receivables and lease liabilities of \$234,215,000 (2023: \$4,343,000) were recognised.

Amounts recognised in profit or loss:

Lease under SB-FRS 116

	2024 \$'000	2023 \$'000
Interest on lease liabilities	4,695	2,588
Expenses relating to short-term leases	20,527	11,397
Expenses relating to non-lease component	1,874	1,886
Expenses relating to leases of low-value assets, excluding short-term leases of low-value assets	1,132	850

Amounts recognised in the statement of cash flows:

	2024 \$'000	2023 \$'000
Total cash outflow for leases	<u>62,661</u>	<u>47,733</u>

Notes to Financial Statements (cont'd)

Year ended 31 March 2024

Leases as lessor (SB-SB-FRS 116)

For the sub-leases of the foreign workers' dormitories, ready-mixed concrete sites and integrated construction and precast hubs, interest income on lease receivables of \$4,083,000 (2023: \$2,179,000) were recognised by the Group.

The following table sets out a maturity analysis of lease receivables, showing the undiscounted lease payments to be received after the reporting date.

	Group	
	2024	2023
	\$'000	\$'000
- Less than one year	81,297	35,709
- One to two years	74,622	8,182
- Two to three years	40,600	1,507
- Three to four years	8,400	1,285
- Four to five years	8,400	1,285
- More than five years	6,300	19,170
Total undiscounted lease receivables	219,619	67,138
Unearned finance income	(10,907)	(8,273)
Impairment loss	-	(10,143)
Net investment in the lease	208,712	48,722

23 Related party

In addition to the related party information disclosed elsewhere in the financial statements, significant transactions between the Group and related parties took place on 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.

Key management personnel compensation

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 Authority	
	2024	2023
	\$'000	\$'000
Short-term benefits	6,775	7,271
CPF contributions	329	365
	7,104	7,636

Notes to Financial Statements (cont'd)

Year ended 31 March 2024

Government-related entities 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 Singapore Government has control over the Authority, as well as Ministries, Organs of State and other Statutory Boards.

Collectively, but not individually significant transactions

The following significant transactions took place between the Group and other Ministries, Organs of State and other Statutory Boards. 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.

	Group and Authority	
	2024	2023
	\$'000	\$'000
Service rendered		
Plan fees	6,083	12,846
Course fees	1,569	1,450
Quality and green mark assessment fees	3,377	4,648
Management fee	4,159	6,880
Service received		
Employee benefit costs	2,383	1,964
IT services	19,014	7,474
Leases	82,490	57,051

24 Financial instruments

(i) Financial risk management

Overview

The Group has exposure to the following risks arising from financial instruments:

- credit risk
- liquidity risk
- market risk

This note presents information about the Group's exposure to each of the above risks, the Group's objectives, policies and processes for measuring and managing risk, and the Group's management of capital.

Notes to Financial Statements (cont'd)

Year ended 31 March 2024

Movement in allowance for impairment in respect of trade and other receivables

The movement in the allowance for impairment in respect of trade and other receivables during the year was as follows:

	Lifetime ECL	
	2024	2023
	\$'000	\$'000
At beginning of the year	12,322	11,196
Allowance for impairment loss	1,302	1,126
Utilisation of provision	(1,253)	-
Bad debt provision written back	(9,792)	-
At end of the year	2,579	12,322

The Group and the Authority believe that the unimpaired amounts are still collectible in full, based on historic payment behaviour and extensive analyses of customer credit risk.

Financial guarantees

The Group participated in an agreement with financial institutions to provide financial guarantees to qualifying scheme applicants since 1 April 2018 under The Building Retrofit Energy Efficiency Financing ("BREEF") Scheme. As at the respective financial years ended, the Authority has an outstanding guarantee to a bank in respect of credit facilities granted to 1 (2023: 1) scheme applicant. The guarantee is subject to the impairment assessment under SB-FRS 109.

At 31 March 2024 and 31 March 2023, the risk shared by the Authority on the outstanding banking facility amounted to \$ 65,000 and \$191,000 respectively.

Based on the annual credit review by the financial institution, the scheme applicant has the financial capacity to meet the contractual cash flow obligations in the near future and hence, the Authority does not expect significant credit losses from this guarantee.

Cash and bank balances

The cash and bank balances as disclosed in Note 7 to the financial statements are held with bank and financial institution counterparties which are rated P-1, based on Moody's ratings. The Authority participated in the Centralised Liquidity Management scheme starting from 25 March 2010.

Impairment on cash and bank balances has been measured on the 12-month expected loss basis and reflects the short maturities of the exposures. The Group and the Authority consider that its cash and bank balances have low credit risk based on the external credit ratings of the counterparties. The amount of the allowance on cash and bank balances is negligible.

Notes to Financial Statements (cont'd)

Year ended 31 March 2024

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 bank balances to enable them to meet their normal operating commitments.

Analysis of financial instruments by remaining contractual maturities

All financial liabilities in 2023 and 2024 are repayable on demand or due within 1 year from the end of the reporting period, except for lease liabilities.

Market risk

There has been no change to the Group's exposure to these financial risks or the manner in which it manages and measures the risk. Market risk exposures are measured using sensitivity analysis indicated below.

Interest rate risk management

The Group's interest-bearing financial instruments mainly relates to cash and bank balances which are all short-term. Hence, management does not expect future fluctuations in interest rates to have significant impact on the Group's results or cash flows.

(ii) 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, except for long term lease receivables and lease liabilities as disclosed in Notes 6 and 9 to the financial statement.

(iii) Capital risk management policies and objectives

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.



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