





02	MISSION AND VISION
03	STRATEGIC THRUSTS
03	CORE VALUES
04	CORPORATE SOCIAL RESPONSIBILITY STATEMENT
05	CORPORATE GOVERNANCE
06	CHAIRMAN'S MESSAGE
10	BOARD OF DIRECTORS
12	SENIOR MANAGEMENT
14	BCA ORGANISATION STRUCTURE
16	YEAR IN REVIEW
35	DATA & STATISTICS

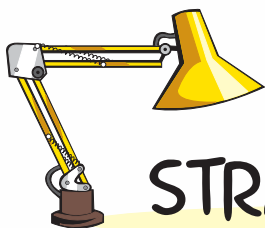
Like a strategic mind map, BCA goes about its operations in a meticulous fashion, always moving with changing trends and needs. But more than just being forward-looking, it requires the collective effort of policies, regulations, programmes, as well as interaction with various stakeholders to champion the development of an excellent built environment for Singapore. And this is how it all comes together for our built environment now and in the future.



MISSION AND VISION

Our mission is to shape a safe, high quality, sustainable and friendly built environment.

Safety, Quality, Sustainability and User-friendliness are four key attributes of our built environment where BCA has a significant influence on. They distinguish Singapore's built environment from those of other cities. Hence, our vision is to have the best built environment for Singapore, our distinctive global city.



STRATEGIC THRUSTS

We aim to be a caring and progressive organisation that values its people, the innovative spirit, integrity, and service excellence.

We ensure high safety standards and promote quality excellence in the built environment.

We champion barrier-free accessibility and sustainability of the built environment.

We lead and transform the building and construction industry by:

- enhancing skills and professionalism
- improving design and construction capabilities
- developing niche expertise
- promoting export of construction-related services

We forge effective partnerships with the stakeholders and the community to achieve our vision.

CORE VALUES



We care for the well-being of our staff, the community and the environment.
We serve our customers with respect and integrity.



We dare to be innovative and seek opportunities to transform BCA and the industry.



We are a resilient organisation with the confidence, courage and ability to overcome challenges.

BCA'S CORPORATE SOCIAL RESPONSIBILITY STATEMENT

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

SERVING THE COMMUNITY

To us, serving the community is a privilege. Embedded in our core value, We care, we take pride in each and every contribution as we serve with our hearts for the better good of the community and an inclusive society. To achieve this, BCA will:

- shape a friendly built environment for Singapore through improving accessibility and promoting Universal Design;
- inculcate a spirit of volunteerism among staff;
- organise purposeful programmes that help to bring about a better built environment for all; and
- raise public awareness of the importance of a friendly built environment through dialogues, public education and collaborative projects.

GREENING THE BUILT ENVIRONMENT (BCA'S ENVIRONMENTAL POLICY)

BCA takes pride as the Green Leader for Singapore's built environment. Care for the environment is embedded strongly in our core values, and we are committed to championing this worthy cause together with our stakeholders to help promote environmentally sustainable developments.

To achieve this, BCA will:

- spearhead green strategies and initiatives towards sustainability in the built environment;
- champion and lead the building and construction industry in the development of sustainable building and sustainable construction;
- actively engage stakeholders through dialogues, public education and collaborative projects; and
- inculcate environmental awareness and commitment amongst our staff through educational and actionable programmes.



CORPORATE GOVERNANCE

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

BOARD MEMBERS

The Board currently consists of 12 members. All are non-executive members, except Dr John Keung who is BCA's Chief Executive Officer (CEO). The Board comprises representatives from the industry, academia and Ministries. The diverse representation of the Board provides an appropriate range of experience, skills, knowledge and perspectives to enable it to play an active role in guiding BCA to achieving its mission and vision.

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

The Board meets at least six times a year to evaluate, approve and monitor the plans and budgets of BCA. It also oversees the work and performance of the Management and assesses the financial health of BCA. The BCA Act empowers the Board to form committees from among its members to support the work of the Board.

FINANCE AND AUDIT

INTERNAL CONTROLS

The Board ensures that the Management maintains a sound system of internal controls to safeguard the interests and assets of BCA. It also ensures that a review of BCA's material internal controls, including financial, operational and compliance controls, and risk management, is conducted annually through internal and/or external audits according to the direction of the Finance and Audit Committee.

FINANCE AND AUDIT COMMITTEE

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



CHAIRMAN'S MESSAGE

Over the years, BCA and the building and construction sector have contributed extensively to the vibrant built environment that we see today. While this is an achievement that we can all be proud of, we will still endeavour to improve on our goal to shape a world-class built environment for our nation. To this end, BCA has been placing much emphasis on promoting quality, sustainability and user-friendliness while regulating the safety of our buildings. In the past year, we have reaped remarkable results and have raised our profile internationally, particularly in the area of sustainability.

Developing capabilities to boost productivity

One of BCA's key priorities for the next few years would be to raise productivity and develop capabilities within the building and construction sector. To sustain economic growth, the government has called for a boost in productivity. The building and construction sector, being labour intensive, is one area where we can drive this change. BCA has identified manpower development, design of buildings that are easier to construct, and technology adoption as drivers for raising productivity in this sector.

BCA will be working with the Ministry of Manpower to implement manpower policies to moderate demand for low cost foreign workers, and encourage the retention of higher skilled and more experienced foreign workers. In addition, BCA will also be stepping up the Job Recreation Programme and enhancing the CoreTrade Scheme to build up a larger core of experienced and highly skilled local workforce. Other measures include greater push for easier-to-construct buildings through enhancing the current buildability legislative framework.

To help the industry adapt to these policy changes, a quarter of the \$1 billion National Productivity Fund has been dedicated to raising productivity and building capability in the construction sector.

In addition to the \$250 million Construction Productivity and Capability Fund, BCA has set up a Construction Productivity Centre to work with industry players as well as other knowledge institutions to re-engineer their work processes and to adopt appropriate construction technologies to achieve productivity gains.



A Centre for Construction IT would also be established to serve as a test-bedding platform for new technologies such as the Building Information Modelling (BIM), provide chaperone services to support firms in IT adoption, and conduct relevant programmes to raise the IT competency of the industry. BCA has also started accepting the e-submission of BIM architectural plans through CORENET. With this accomplishment, I'm proud to highlight that BCA was conferred the Autodesk BIM Recognition Award in 2009 for having the world's first BIM Architectural e-submission system.

The suite of new measures, including the \$250 million fund, will enable us to help the industry in adopting new technologies and in developing manpower capability. A more technological advanced construction industry together with a better trained and developed workforce will provide the impetus for greater productivity and efficiency in the building and construction industry. The BCA Academy will continue to be one of the training institutions leading the effort to provide programmes at diploma, graduate, postgraduate and professional levels to drive capability building within the sector.

As for BCA's core mission areas of safety, high quality, environmental sustainability and user-friendliness in our built environment, BCA will continue to implement our various masterplans to advance the mission.

Ensuring safety of the built environment

The safety of our built environment has always been one of BCA's main priorities. BCA has been progressively reviewing its regulatory framework and strengthening legislation to ensure that the rules and regulations are relevant to changing needs and time.

BCA will also be playing a more prominent role in the built environment with the new national Geological Office that will serve as the authority on geological information in Singapore. The Office will assist development agencies in geological matters for underground projects to ensure optimal and cost-effective planning and development of underground space.

To ensure that Singapore's coastline is well-protected, BCA will also be working with experts from the Coastal Protection and Management Steering Committee (CPMSC) to develop a coastline protection regulatory system and related initiatives.

Maintaining quality standards

As the quality of life improves over the years, homeowners have also set higher benchmarks for quality homes. In Singapore, BCA's CONQUAS and Quality Mark remain the key indicators of assurance of quality building workmanship. BCA will continue to raise industry quality standards by continually reviewing and raising the CONQUAS and Quality Mark targets. We will also be formulating and rolling out a Quality Mark publicity plan to enhance awareness and induce user demand for Quality Mark.



Enhancing environmental sustainability

To further Singapore's goals for sustainable development, BCA will continue to champion the adoption of Green Buildings and Sustainable Construction practices. Some new initiatives include raising the bar for Green Mark standards for new buildings and mandating building energy consumption data submission for existing buildings.

On sustainable construction, we will be introducing minimum requirements on sustainable construction in the Green Mark requirements to push for wider adoption of sustainable construction practices. To help the industry cope with the rising demand for green buildings, more training courses will be rolled out to build up the industry's capabilities in environmental sustainability to design, construct, operate and maintain green buildings.

One of our milestone events in 2009 was the inaugural Singapore Green Building Week which was a resounding success. The event saw delegates from all over the world come together to discuss and share expertise on improving sustainability. During the week, the newly-formed Singapore Green Building Council was also introduced. To further profile our industry players in their expertise in sustainable development, BCA will work with the Singapore Green Building Council to bring the World Green Building Congress to Singapore in September 2010.

BCA's very own Zero Energy Building (ZEB) was also launched at the Singapore Green Building Week last year. It was indeed a proud moment for the entire BCA family. The ZEB, which is fully retrofitted with green building design features and technologies, serves as a test-bedding centre for new green technologies. BCA will continue to work with research partners to evaluate the building performance of ZEB@BCA Academy and collaborate with the industry and research institutes to facilitate the adoption of these innovations in other public and private sector buildings. We will also explore the incorporation of other state-of-the-art green building technologies into the BCA flagship R&D project.

To attract more locals to the industry, BCA is embarking on rebranding the building and construction sector and built environment careers to ride on the green building movement and the need for a strong green collar workforce. BCA will continue to intensify our outreach programmes to potential new entrants through career talks, learning journeys, exhibitions, the BCA-Industry Built Environment Scholarship programme, the building careers portal and others.



Designing a friendly city for all

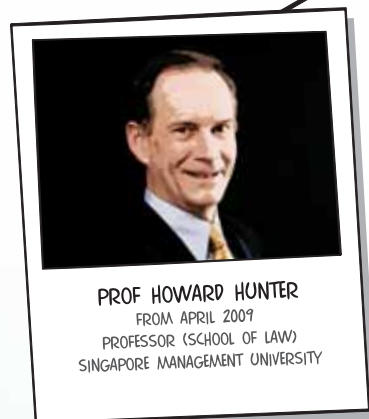
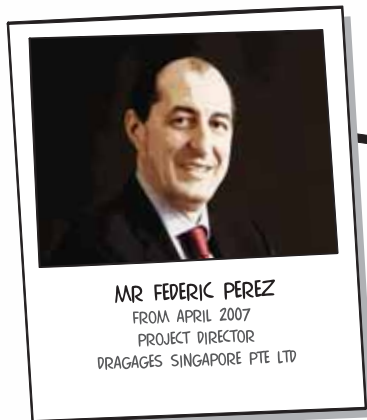
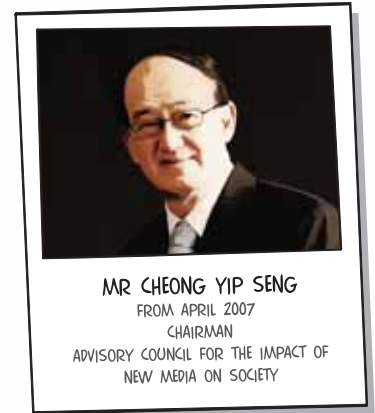
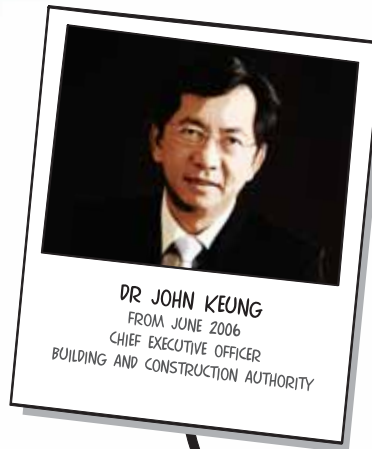
BCA is aware of the need to build a city that caters to the diverse needs of its people. For several years, we have been advocating Universal Design (UD) in public and commercial buildings and have even successfully integrated barrier-free accessibility (BFA) into the private estate upgrading scheme. BCA will continue to play a key role in supporting the whole-of-government effort to make Singapore an inclusive society and endearing home for all.

To create an elderly-friendly built environment, we will implement the various initiatives and measures under the BFA Masterplan. These will include encouraging more building owners to provide BFA for their existing buildings using the Accessibility Fund; reviewing the need for additional UD requirements for selected building types; and working with the relevant agencies to incorporate BFA/UD features at planning stage to ensure seamless connectivity in public spaces.

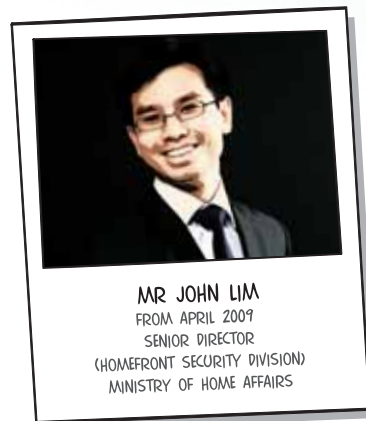
In conclusion, productivity will be high on our agenda for the year ahead. BCA will work in partnership with the stakeholders in the building and construction sector to achieve the desired productivity target.

As we move into another challenging year, I would like to put on record my appreciation to my fellow Board Members for their valuable advice and guidance, and most importantly to the BCA Management and staff, who have worked tirelessly to deliver remarkable results. Let us continue to exceed expectations as we gear towards our goal of achieving the best built environment for Singapore, our distinctive global city.

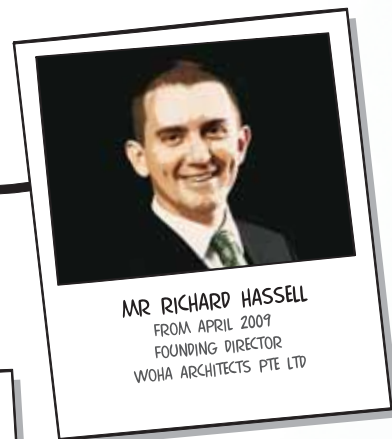
Quek See Tiat
Chairman



BOARD OF



DIRECTORS



SENIOR MANAGEMENT

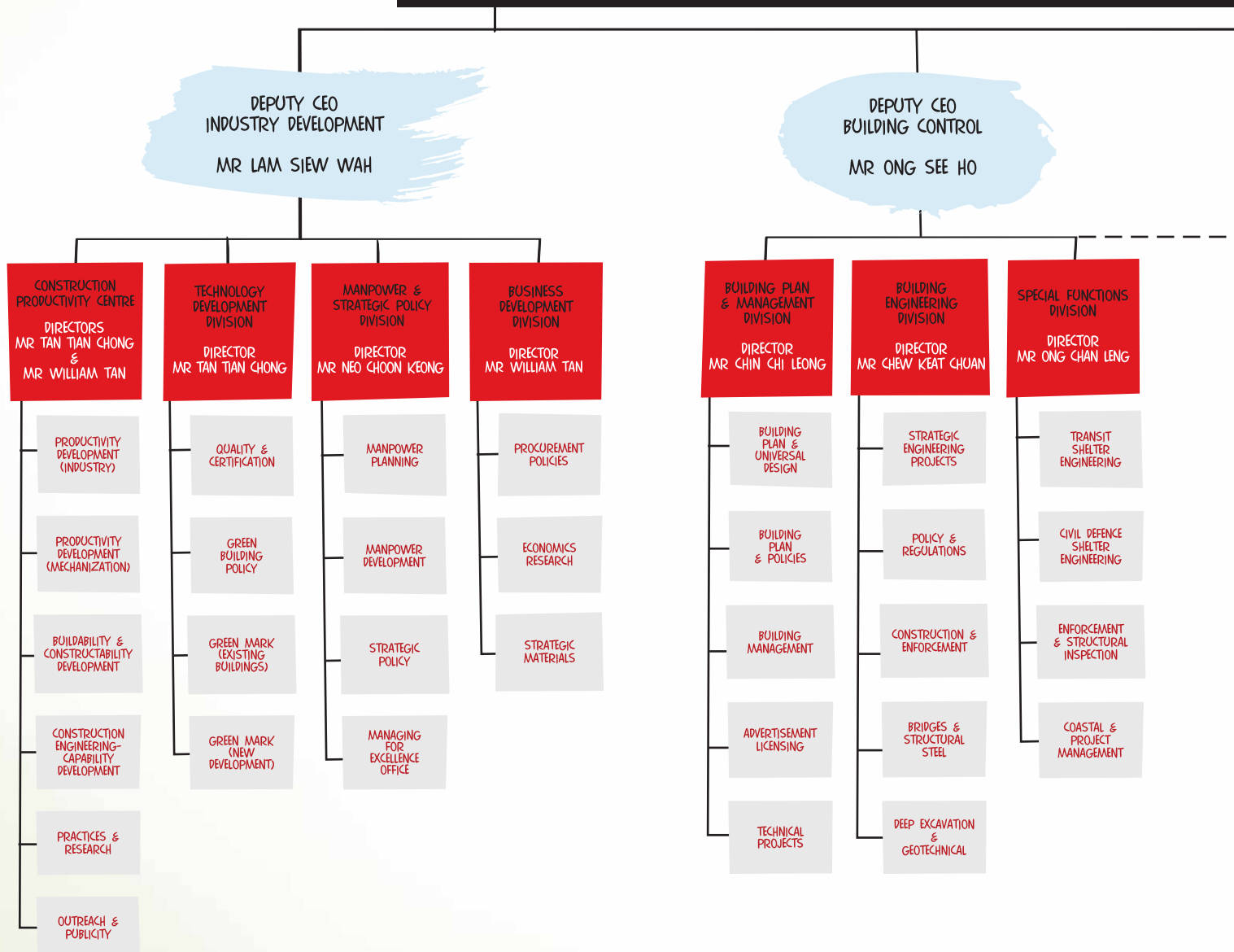
01. DR JOHN KEUNG
CHIEF EXECUTIVE OFFICER
02. MR BENEDICT TAN
MANAGING DIRECTOR (BCA ACADEMY)
03. MR LAM SIEW WAH
DEPUTY CEO, INDUSTRY DEVELOPMENT
04. MR ONG SEE HO
DEPUTY CEO, BUILDING CONTROL
COMMISSIONER OF BUILDING CONTROL
05. MR CHOO WHATT BIN
EXECUTIVE DIRECTOR, SERVICES
06. MR WONG WAI CHING
DEPUTY MANAGING DIRECTOR, TRAINING AND
PROFESSIONAL DEVELOPMENT (BCA ACADEMY)
07. MR TAN TIAN CHONG
DIRECTOR, TECHNOLOGY DEVELOPMENT DIVISION
DIRECTOR, CONSTRUCTION PRODUCTIVITY CENTRE
08. MR WILLIAM TAN YONG KEH
DIRECTOR, BUSINESS DEVELOPMENT DIVISION
DIRECTOR, CONSTRUCTION PRODUCTIVITY CENTRE
09. MR ONG CHAN LENG
DIRECTOR, SPECIAL FUNCTIONS DIVISION
10. MR CHIN CHI LEONG
DIRECTOR, BUILDING PLAN AND MANAGEMENT DIVISION
COMMISSIONER OF BUILDINGS
11. MR CHENG TAI FATT
DIRECTOR, CORPORATE DEVELOPMENT DIVISION
DEPUTY MANAGING DIRECTOR,
CORPORATE SERVICES (BCA ACADEMY)
12. MR CHEW KEAT CHUAN
DIRECTOR, BUILDING ENGINEERING DIVISION
13. MR ANG KIAN SENG
DIRECTOR, RESEARCH DIVISION
14. MR NEO CHOON KEONG
DIRECTOR, MANPOWER AND STRATEGIC POLICY DIVISION
15. MR KOH LIN JI
ACTING DIRECTOR, INTERNATIONAL DEVELOPMENT DIVISION

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BCA ORGANISATION

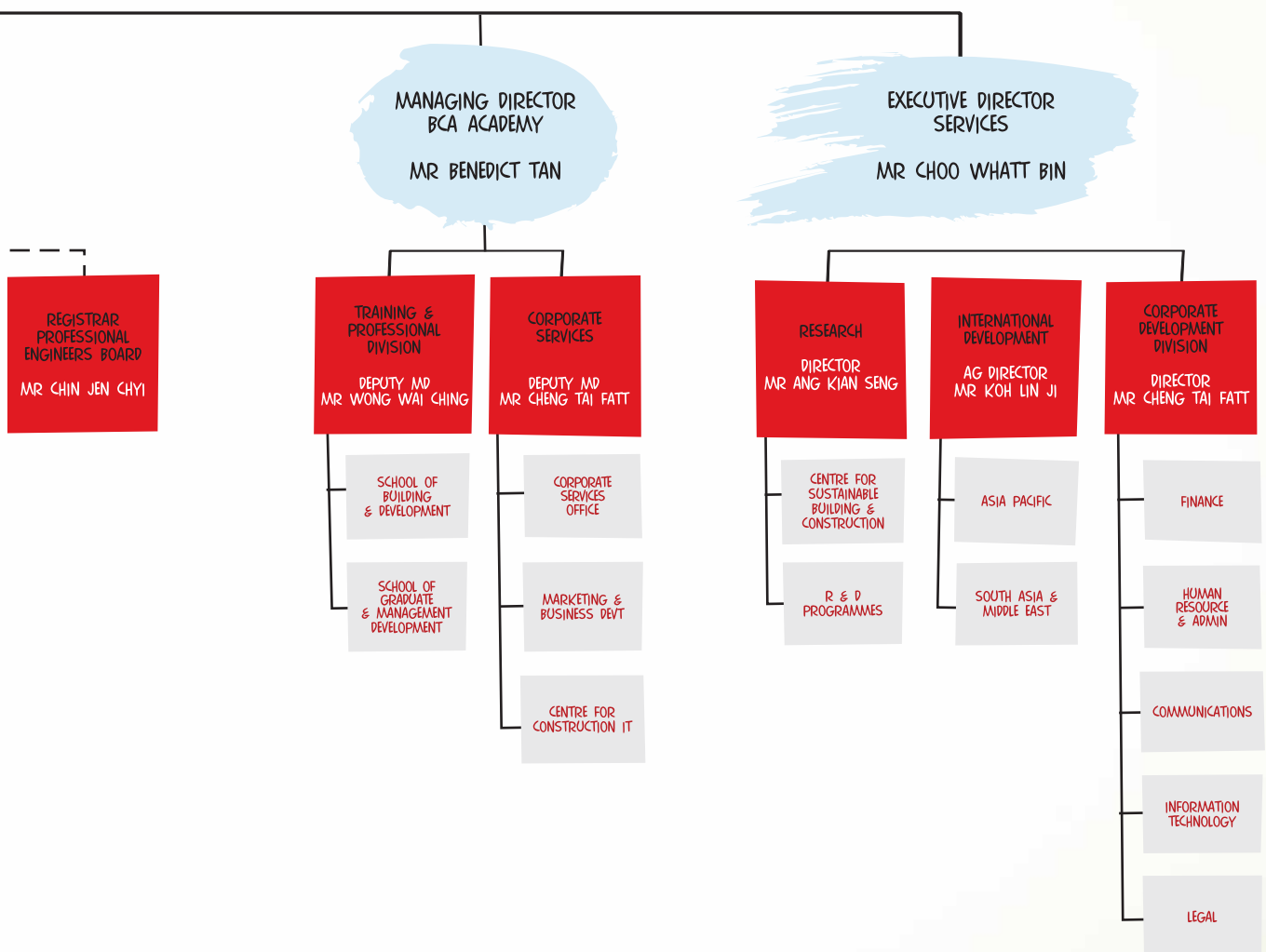
CHIEF EXECUTIVE OFFICER



STRUCTURE

(WITH EFFECT FROM 1 AUGUST 2010)

DR JOHN KEUNG





SAFE BUILT ENVIRONMENT

REGULATIONS & LEGISLATIONS

- Continuous Review of Regulatory Requirements
- **Regulatory Control of Earth Retaining or Stabilising Structures**
- Licensing of Builders
- **New Guidelines on Outdoor Advertisements**
- Civil Defence Shelters
- **Coastal Protection and Foreshore Structures**

KEY EVENTS

- Civil Defence Shelter Seminar
- **Structural Inspection and Maintenance of Buildings Seminar**
- Dialogue on Slope Stability and more...



QUALITY LIVING ENVIRONMENT

CONQUAS

QUALITY MARK



PROGRAMMES & INITIATIVES

- BCA-REDAS Quality Seminar
- **Certified CONQUAS/ Quality Mark Managers Course**
- BCA Built Environment Leadership Award and more...

YEAR IN REVIEW



INCENTIVE SCHEMES

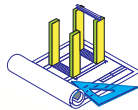
- Green Mark Gross Floor Area Incentive Scheme
- **MND Research Fund for the Built Environment**
- Sustainable Construction Capability Development Fund
- **Green Mark Incentive Scheme for Existing Buildings** and more...

KEY EVENTS

- 2nd International Panel of Experts on Sustainability of the Built Environment
- **Inaugural Singapore Green Building Week & International Green Building Conference**
- Launch of Zero Energy Building

TRAINING

- Master of Science in Sustainable Building Design
- **Diploma in Electrical Engineering & Clean Energy**
- Executive Development Programme on Leadership in Environmental Sustainability and more...



SUSTAINABLE CITY



PROGRAMMES & INITIATIVES

- 2nd Green Building Masterplan
- **Sustainable Construction Masterplan**
- Green and Gracious Builder Award
- **Development of Green Capabilities**
- Research and Development on Recycled Construction Materials and more...

LEAD AND TRANSFORM



MITIGATE IMPACT OF GLOBAL FINANCIAL CRISIS

INITIATIVES

- Enhancement of Government Financing Scheme
- Provision of Information on Industry Demand

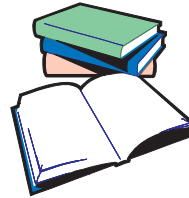


PUBLIC ENGAGEMENT INITIATIVES

- Green Building Exhibition
- Window Safety Day
- MOE Learning Journey and more...



- SMU-BCA Advanced Management Programme
- Tsinghua University-BCA Advanced Management Programme
- Vietnam National University-BCA Advanced Management Programme and more...



KNOWLEDGE SHARING INITIATIVES

- Facilitated Business Mission Trips for Local Firms
- Export of Green Services and Technologies
- Development of Green Building Evaluation Standard for Sino-Singapore Tianjin Eco-city
- Customised Training Courses for Overseas Officials

MANPOWER AND TECHNOLOGY DEVELOPMENT



INITIATIVES

- Training & Upgrading Courses at BCA Academy
- CoreTrade Registration Scheme
- Built Environment Young Leaders' Programme
- Built Environment Scholarship, Training and Career Fair
- BCA-Industry Built Environment Scholarship
- Building Information Modelling and more...



INCLUSIVE SOCIETY



Estate Upgrading Scheme

KEY EVENTS

- International Panel of Experts Meeting on Universal Design
- Roving Exhibitions
- Universal Design is Good Design Seminar

PROGRAMMES & INITIATIVES

- Barrier Free Accessibility
- Universal Design
- Review of Accessibility Masterplan
- BCA's Friendly Portal
- Accessibility Rating System

DESIGNING THE BEST BUILT ENVIRONMENT FOR SINGAPORE



CHAMPIONING A SAFE BUILT ENVIRONMENT

Buildings should be safe to live and work in, and this would not be possible without a robust building control system. BCA proactively reviews its regulations regularly to ensure that they evolve with changing needs.



- **Improving regulatory requirements for construction safety**

For a couple of years, BCA has been reviewing the regulatory requirements for the Earth Retaining or Stabilising Structures (ERSS) in construction sites. It was finalised after a consultation with a panel of technical experts. An advisory note was then issued in April 2009 to inform the industry of the change and enhancements to the regulatory controls of the ERSS.

- **Upholding standards within the industry**

Since the implementation of the licensing scheme for builders in June 2009, BCA licensed more than 740 Class 1 and 1,650 Class 2 General Builders. This was on top of the existing 446 licensed Specialist Builders.



In addition, an accreditation scheme has also been provided for ready-mixed concrete suppliers under the Singapore Accreditation Council-Singapore Laboratory Accreditation Scheme (SAC-SINGLAS) to ensure the quality of the concrete supplied to construction sites. The new Singapore Standards on concrete specifications were also incorporated in the Approved Document (which sets out the acceptable solutions – specifications, materials, designs or methods of construction – under the performance based regulations) to facilitate the adoption of European Standards.

- **Regulating outdoor advertisements and signage**

Outdoor advertisements are necessary to create buzz and to add vibrancy to our streetscape. It is important that these signage and signboards are properly displayed, well-maintained and safe. BCA has been carrying out enforcement blitzes on outdoor signs at targeted areas. Together with the Urban Redevelopment Authority (URA), BCA released new guidelines under the Building Control (Outdoor Advertising) Regulations for the Central Area and outside the Central Area in September 2009, so that they are compatible with the overall planning intention of the place at which they are displayed.



- **Ensuring structural safety of buildings**

BCA has been working with building owners under the mandatory Periodic Structural Inspection requirement to ensure the structural safety of existing buildings. Such inspections lead to the early detection and rectification of any possible structural defects. Building owners whose buildings are found to be unsafe would have to restore the structural integrity and safety of the building and if need be, close the building altogether.

- **Regulating and improving civil defence shelters**

Civil defence shelters serve an important function in protecting people during wartime. BCA contributes to this essential role through the regulation of design and commissioning of household, storey and staircase shelters within residential buildings as well as public transit shelters in MRT stations. To date, transit shelters have been successfully incorporated in the design of the new Circle Line (CCL), Downtown Line stage 2 and 3. In FY09, six CCL 2 and 3 transit shelters, and one Fusionopolis carpark shelter were tested and commissioned by BCA. The technical requirements of staircase and storey shelters were also recently reviewed, revised and implemented to provide greater design flexibility.



- **Managing coastal protection and foreshore structures**

With global concerns on the rising sea level, BCA was tasked as the lead agency overseeing coastal protection. Recently, the Coastal Protection and Management Steering Committee (CPMSC) was formed to drive the development of government operational setup and mechanisms to carry out regulatory functions. To ensure that globally recognised standards were met, BCA also engaged an international panel of reviewers to review the scope of a proposed risk map study.

BCA currently maintains five jetties and 8-km run of foreshore structures around Singapore. A regular inspection, repair and maintenance schedule is implemented to ensure that these structures remain safe for public use.

BCA is also involved in the shoreline restoration works at the beaches along East Coast and Pasir Ris Parks. The project is expected to be completed by 4th quarter 2010.

- **Setting up Singapore's Geological Office**

In FY09, BCA set up the Geological Office which serves as the authority on geological information in Singapore. The Office centralises, manages and provides geological information and advice to development agencies on geological matters.



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DELIVERING A QUALITY BUILT ENVIRONMENT



- **Raising industry quality performance**

BCA continues to leverage on the CONQUAS and Quality Mark schemes to enhance the quality standards of building projects in Singapore. In FY09, 90% of new private residential and commercial projects (by value) adopted CONQUAS, with the industry achieving an average CONQUAS score of 82.0. This was an improvement from the 80.6 mean score in FY05.

The Quality Mark scheme is also gaining greater support and acceptance from the industry. Since its launch in FY02, the demand for Quality Mark had been rising steadily from 24% in FY05 to a high 56% in FY09. So far, developers and builders are able to ensure that high quality homes are delivered to homeowners consistently through the Quality Mark scheme. Homeowners of units that are certified with Quality Mark are also reportedly more satisfied with their purchases, which required less rectification work.



GREENING THE BUILT ENVIRONMENT

- **Unveiling the 2nd Green Building Masterplan**

The sustainability of our built environment has always been a key focus of BCA. In April 2009, the Inter-Ministerial Committee for Sustainable Development (IMCSD) unveiled a blueprint for Singapore's sustainable development, and set a target to green 80% of buildings in Singapore by 2030. With this new target, BCA went on to set new benchmarks under the 2nd Green Building Masterplan. Various initiatives were rolled out under the masterplan to ensure that both new and existing buildings would be Green Mark certified by 2030. To encourage private building owners to green their existing buildings, a \$100 million Green Mark Incentive Scheme was introduced to incentivise the upgrading of those buildings.

- **Encouraging higher Green Mark standards**

To further encourage private building owners to develop their buildings to higher Green Mark standards, the Green Mark Gross Floor Area scheme was also introduced by BCA and the Urban Redevelopment Authority (URA). Developments that have attained the Green Mark Platinum or Gold^{PLUS} standards would be granted additional floor area over and above the Master Plan Gross Plot Ratio (GPR). In FY09, BCA received 35 applications from new developments for Green Mark Platinum or Gold^{PLUS} certification.

An additional land sales condition was further imposed by BCA and URA, requiring new developments in Marina Bay and Downtown Core, Kallang Riverside, Jurong Gateway @ Jurong Lake District and Paya Lebar Central to meet higher Green Mark standards.

- **Introducing new Green Mark assessment frameworks**

BCA's Green Mark scheme has gained strong recognition locally and regionally as a rating system developed for the tropical climate. Three new assessment frameworks for other building types were introduced to the Green Mark scheme in May 2009. These include infrastructure, office interior and landed houses. A new category – Green Mark for Districts – was also introduced to promote and recognise environmentally friendly and sustainable practices in the masterplanning and implementation of precinct or district developments.



- **Spearheading the inaugural Singapore Green Building Week**

The inaugural Singapore Green Building Week was a resounding success with BCA reaching out to green practitioners from around the world. Held in October 2009, the key events and activities that took place include:



(a) The inaugural Singapore International Green Building Conference (IGBC) supported by the World Green Building Council (WGBC) & United Nations Environment Programme (UNEP).

(b) The formation of Singapore Green Building Council (SGBC) and the conferment of the World Green Building Council's emerging member status.

(c) The launch of the Zero Energy Building (ZEB) at BCA Academy, a BCA flagship R&D project, to showcase advanced Green Building Technologies, with an emphasis on energy efficiency.



(d) The meeting of the 2nd International Panel of Experts (IPE) on Sustainability of the Built Environment where the IPE, together with BCA and key representatives from the public, private and people sectors, reviewed the various initiatives under the 2nd Green Building Masterplan.

(e) The signing of a Memorandum of Understanding with United Nations Environment Programme (UNEP) to collaborate in the review of green building policies and to facilitate outreach in the region.



(f) The design, construction and management of the Singapore Green Pavilion at BEX Asia 2009. The Pavilion received more than 6,400 visitors, a 63% increase from the previous year. It was a platform to showcase BCA's ZEB and the successful projects under the MND Research Fund, to raise awareness of the industry's Research & Development efforts and to share research findings.

(g) The hosting of the United Nations Environment Programme Sustainable Buildings and Climate Initiative (UNEP-SBCI) Roundtable. This marked the first step towards harmonising a Common Carbon Metric Tool for measurement and reporting of building performance in terms of energy and carbon. BCA also co-organised a Regional Roundtable on Sustainable Buildings with UNEP for regional participants, including building stakeholders and government officials.



- **Developing green capabilities**

With more sustainable developments coming up, it is crucial to build up capabilities in green building design and technologies. To this end, BCA has put in place a range of training programmes, conferences, seminars, overseas study trips and publications to train a pool of competent green professionals.

In collaboration with the University of Nottingham, BCA launched the Master of Science Degree in Sustainable Building Design and a new Diploma programme in Electrical Engineering & Clean Energy.

Green stewardship was also promoted among industry leaders through an Executive Development Programme on Leadership in Environmental Sustainability, conducted in partnership with the Carnegie Mellon University at their campus in Pittsburgh, USA.

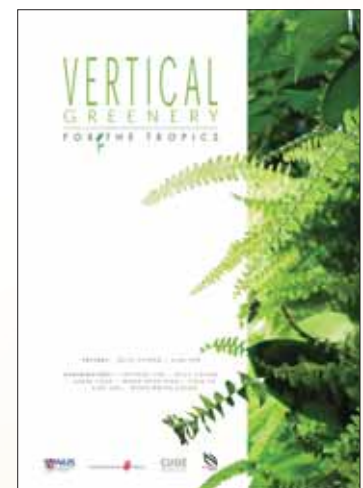
More green building courses are in the pipeline to achieve the target of training 18,000 to 20,000 green professionals over the next 10 years. To date, BCA has trained about 1,300 Green Mark Managers and 70 Green Mark Professionals.



- **Initiating research projects**

Through collaboration with the industry and academia, BCA initiated research projects such as the post occupancy evaluation of Green Mark buildings and Singapore's first Zero Energy House to evaluate the benefits of PV installation in a residential setting.

A Green Building Platinum Series of guidebooks was developed by BCA to share best sustainable solutions and practices with the industry. Another industry guidebook, Vertical Greenery for the Tropics, was also published in collaboration with NParks' Centre for Urban Greenery and Ecology (CUGE) and the National University of Singapore (NUS), under one of the completed research projects to disseminate research findings to the industry.





- **Formulating the Sustainable Construction Masterplan**

BCA introduced the Sustainable Construction Masterplan to educate and propel the industry towards more sustainable construction materials and practices, with the aim of reducing 30% of natural aggregates in building projects. An International Panel of Experts from relating fields was also formed to discuss issues and solutions pertaining to sustainable construction.

- *\$15 million fund to support sustainable construction*

Under the Masterplan, a Sustainable Construction Capability Development Fund was launched to help industry players in the sustainable construction supply chain. Demolition contractors, recyclers, ready-mixed concrete suppliers and contractors were able to tap on the fund to build capabilities in technology and enhance their work processes.

- *Action plan to save resources*

BCA formulated the “Waste to Resource Action Plan” to encourage the recycling of materials. A Demolition Protocol was introduced and incorporated into the Code of Practice for Demolition or CP11 to set out procedures to maximise resource recovery for demolition waste. This would help generate cleaner demolition waste that could in turn be used to produce high-quality recycled concrete aggregates (RCA).

- *Positive R&D results on recycled materials*

Before the recycled materials could be put to use, BCA collaborated with the industry and academia to do an in-depth study on these materials. They were successfully adopted in building projects such as The Samwoh Eco-Building and Tampines Concourse Building, proving the viability of using such materials for structural works. The industry-wide application of recycled materials would be beneficial as it would help lower the dependence on natural construction materials and reduce the building’s embodied carbon emission.

The study on recycled materials was part of the sustainable construction related projects funded by the MND Research Fund for the Built Environment. On behalf of MND, BCA administers the Research Fund and manages Research & Development (R&D) projects through collaboration with government agencies, industry and research institutions. To date, \$32 million has been committed for 48 R&D projects that cover two strategic R&D clusters - Green Buildings and Sustainable Urban Living.

- **Recognising exemplary Green and Gracious builders**

Exemplary builders who had taken efforts to minimise impact on the environment and community were also accorded recognition through the new Green and Gracious Builder Award which was introduced in 2009. The award sets standards for green and gracious practices during construction and helps to raise the environmental consciousness and professionalism of builders. This inaugural award had 14 builders conferred the Excellent and Merit awards when it was initiated.







BUILDING AN INCLUSIVE SOCIETY

- **Promoting Barrier Free Accessibility**

BCA has attained significant progress in championing a user-friendly built environment. Besides enhancing the accessibility of Government buildings, about 80% of buildings along Orchard Road had also achieved basic barrier-free accessibility (BFA). As of March 2010, 1,700 buildings were rated under the Accessibility Rating System.

BFA was also successfully incorporated as an integral part of the private estate upgrading scheme, with MacPherson Garden Estate being the pilot project. To better meet residents' needs, BCA will be collaborating with the Working Committee (comprising members of Neighbourhood Committee and the estate residents) to incorporate BFA into future estate upgrading projects.

- **Facilitating accessibility of information**

Improvements have been made to BCA's Friendly Buildings Portal to encourage greater public interest and participation in creating a Friendly Built Environment. A detailed map featuring the level of BFA in buildings along Orchard Road was also published on the Portal. With these new enhancements, information on accessible buildings is readily available with just a click of the mouse. In addition, BCA will continue to train students in Universal Design Audits for the Accessibility Rating System.

- **Initiating IPE meeting on Universal Design**

BCA organised the inaugural International Panel of Experts (IPE) meeting on Universal Design in March 2010 to review initiatives under the Accessibility Masterplan and to seek recommendations on future plans. Moving forward, BCA would be formulating a holistic set of action plans aligned along the IPE's key recommendations, including a Code review and the development of capability building programmes.





LEADING & TRANSFORMING THE INDUSTRY



MITIGATING IMPACT OF GLOBAL FINANCIAL CRISIS

- **Enhancing government financing schemes and initiatives**

During the global financial crisis, BCA moved in swiftly and implemented mitigating measures to assist construction and consultancy firms. These measures include requiring all Government Procurement Entities (GPEs) to make frequent, prompt and full payments for works done and to lower the quanta for security deposits for construction projects till 30 June 2010. In addition, advisory notes were issued to inform GPEs of the early release of retention sums, revised payment schedule for consultancy services and waiver on the imposition of Security Deposits and Liquidated Damages on consultants.

- **Providing information on industry demand**

BCA began providing online updates on a 3-year construction demand forecast as well as four quarters of public sector consultancy and construction tenders in the pipeline. With more information, industry players would have better visibility of projects in the near horizon to help them facilitate their planning of manpower and resources.

BUILDING CAPABILITIES TO BOOST PRODUCTIVITY

- **Nurturing a competent workforce**

As Singapore works towards greater sustainability and higher productivity, a wider pool of professionals would be needed to helm the industry. In FY10, a \$250 million Construction Productivity and Capability Fund (CPCF) will be injected into the industry through various initiatives to boost productivity and build capabilities. Firms can tap on this fund to enhance construction productivity through wider technology adoption and manpower development.



- **Training and upgrading courses at BCA Academy**

To support the upgrading and development of building professionals, BCA Academy, the training arm of BCA, has been collaborating with renowned universities, both locally and abroad, to introduce a range of degree, postgraduate and Executive Development courses. Each year, the BCA Academy holds an Open House to allow interested individuals to find out more about the training opportunities offered.

The Academy also organises market immersion training programmes for practitioners and firms. These programmes are joint initiatives with overseas partners such as the Tsinghua University and Vietnam National University. Locally, BCA collaborates with the Singapore Management University (SMU) to offer the SMU-BCA Advanced Management Programme. These programmes allow industry leaders and senior managers to be familiarised with the growing complexities and challenges of construction in local and overseas markets.

There are also rigorous skills training and assessments for tradesmen and construction supervisors in architectural, structural, building services, workplace safety and health as well as construction equipment operations. In FY09, the Academy enrolled and trained more than 38,000 supervisors and tradesmen for the local construction industry.

BCA has been reviewing the skills test requirements and standards to further raise the quality and skills levels of new foreign workers. As a result of this review, the range of overseas trade tests was widened from nine to 22 in 2009.

- **Increasing career opportunities and recognition for skilled workers**

The CoreTrade Registration scheme was implemented in 2009 to retain the better and more experienced tradesmen (both local and foreign) by providing a clear career progression path and giving them due recognition. This would also help build up a pool of skilled and experienced workers for the expanding construction industry.

Currently, more than 7,500 CoreTrade personnel are registered with BCA. In 2009, more than 20 projects worth over \$12 billion were required to comply with CoreTrade deployment requirements. In addition, a tiered-levy framework was also introduced to encourage the retention of the higher skilled and more experienced foreign workers.

To attract more locals at the tradesmen level, BCA worked with the Singapore Workforce Development Agency (WDA) and the National Trades Union Congress (NTUC) to train, upgrade and/or place about 1,200 locals under the Job Recreation Programme (JRP) from January to December 2009.



- **Developing young professionals and retaining experienced locals**

BCA has been leveraging on various outreach platforms to attract more locals at the PMET level. A Built Environment Young Leaders' Programme was initiated to identify, nurture and retain young professionals for leadership renewal. The first cohort of Young Leaders was selected from industry firms with the aim of giving them a greater stake in the advancement of the industry. Existing professionals also have the opportunity to upgrade themselves through the range of courses and training programmes organised by the BCA Academy.

- **Promoting career opportunities**

Held in January 2009 at the BCA Academy, the aim of the inaugural Scholarship, Training and Career Fair was to raise profile and visibility of built environment careers. The success of the fair led to a 2nd Training and Career Fair in January 2010, which saw the participation of over 30 firms and organisations and more than 1,200 visitors. A recruitment fair was also held in July 2009 to facilitate the hiring needs of industry firms.



- **Nurturing potential students for the built environment**

BCA continues to reach out to potential students by offering them an opportunity to take up a challenging career in the Built Environment. Together with the support of 16 leading industry players, a total of 19 scholarships were awarded to deserving students in 2009.



ENHANCING DESIGN AND SUBMISSION PROCESSES

- **Easing submission processes online**

For the fourth consecutive year, Singapore was named the world's most business friendly economy in 2009 by the World Bank Report on Doing Business. This was in recognition of the whole-of-government effort in ensuring a regulatory environment that is highly conducive to business. The ranking was based on ten indicators, one of which is the ease and speed of obtaining construction permits through CORENET e-submission.

- **Designing buildings with BIM**

BCA successfully piloted the Building Information Modelling (BIM) architectural electronic submissions design template and subsequently accepted the e-submission of BIM architectural building plans through CORENET from January 2010. The BIM, which is a 3D parametric building modeling technology, would help simulate the performance and cost of new or retrofitted buildings before actual construction takes place, thus reducing the likelihood of abortive work. For having the world's first BIM Architectural e-submission system, BCA was conferred the Autodesk BIM Recognition Award.

BRINGING SINGAPORE'S EXPERTISE ABOVE AND BEYOND

- **Sharing green knowledge**

Singapore has built up much expertise and technologies within the building industry over the past decades. Beyond working with local stakeholders to create a liveable built environment, BCA has also joined world-wide efforts in the journey towards greater sustainability.

With greater demand for green services and technologies both locally and abroad, BCA had been able to share knowledge through the export of services to regional countries. BCA schemes such as the Green Mark and CONQUAS are well-received in the ASEAN region, China and India. In particular, there are close to 70 Green Mark certified overseas projects across South East Asia and China.

BCA also worked with the Chinese team, comprising representatives from the People's Republic of China (PRC) Ministry of Housing and Urban-Rural Development and the Tianjin Municipal Housing and Urban-Rural Development Commission, to develop the Green Building Evaluation Standard (GBES) as the local standard for the Sino-Singapore Tianjin Eco-city.

Additionally, BCA organised business mission trips for local firms to facilitate the export of services. To date, 31 firms have participated in four business missions to China and India, securing an estimated \$26.5 million worth of initial projects.

- **Customising training courses for overseas officials**

At the BCA Academy, customised training programmes are available for overseas government officials and professionals to enable them to find out more about Singapore's building control framework, strategies and policies. One of the programmes includes the specialist 'Train-the-Trainer' programme in craft skills and plant operations. More than 550 officials from China, Rwanda, Nigeria, Malaysia, Middle East, Southeast Asia and Latin America were trained under these programmes.





REACHING OUT TO THE PUBLIC

- **Promoting BCA's public initiatives**

BCA has been actively reaching out to the public to raise awareness of ongoing initiatives and public campaigns. In December 2009, the first public green building exhibition was held to promote green buildings and professionals. It was also the first time the public was introduced to BCA's green building mascots, Greco and Beco.

On top of the green exhibition, BCA also worked with the Housing & Development Board (HDB) to initiate the 6/6 and 12/12 Window Safety Days to raise awareness of the importance of maintaining windows in Singapore's dense built environment. Information on the campaigns was updated on popular social media networks such as Facebook and attracted more than 2,000 fans on cyberspace.

- **Learning with stakeholders**

Since the opening of the Zero Energy Building (ZEB), the ZEB Visitor's Centre and BCA Gallery have received visitors from all walks of life, including foreign delegates and school students. With the implementation of the MOE learning journey and through direct collaboration with the schools, more than 4,000 students visited the Gallery, Sensory Garden and Zero Energy Building. BCA also worked with industry partners such as Ong&Ong Architects to include visits to the Gallery, Sensory Garden and ZEB as part of their orientation programme for new employees. To date, more than 8,000 people have visited the BCA Gallery.



FOSTERING A CULTURE OF EXCELLENCE

- **Engaging BCA's staff**

Over the years, BCA has continuously strived towards organisational excellence. To further champion this organisational excellence journey, a Service Quality Award (SQA) Steering Committee led by the CEO and senior management was formed in 2008. The key milestones and achievements include:

- Singapore Quality Class in 2002
- Innovation Class in early 2008
- People Developer in 2009
- Renewal of Singapore Quality Class in 2009
- Public Service Milestone Award in early 2010

As an employer of over 600 staff, BCA is constantly looking for ways to engage its staff to develop and improve functions within the agency. Structured platforms called the BCA SPARKS teams (for Management Executive officers) and the BCA SPICE teams (for non-Management Executive officers) were launched in July 2008 and February 2009 respectively to garner inputs from the staff. These platforms allowed a bottom-up approach to encourage staff to propose and volunteer for projects that they were interested in. The strong participation and pro-activeness shown in these projects signified the success of BCA's efforts towards the PS21 spirit.



CARING FOR THOSE WHO MATTER

- **Improving welfare of foreign workers**

Foreign workers contribute extensively to the construction industry. Therefore, it is one of BCA's priorities to ensure that these workers are accommodated in decent living environments while working in Singapore. About 7,800 new bed spaces were successfully completed in purpose-built dormitories, equipped with the necessary facilities and services, to cater to these workers.

- **Showing our care through action**

More than just into the green movement, BCA also upholds the core value "We Care" by providing staff with the opportunity to make a positive impact within the community.

Throughout the year, BCA partnered Voluntary Welfare Organisations (VWOs) such as the Singapore Association of the Visually Handicapped (SAVH) and the Asian Women's Welfare Association (AWWA) to raise funds for the less fortunate. Over 250 enthusiastic BCA volunteers also spruced up and painted washrooms, grilles at SAVH as well as one-room HDB flats for the elderly under AWWA. Donations were also made to charities such as the MND Family Heart Charity Bus and MND Charity Golf.





STATISTICS

ON OUR BUILT ENVIRONMENT SINCE 1999

- **29,696** ADVERTISEMENT LICENSES ISSUED
- **2,761** MANAGEMENT CORPORATIONS IN SINGAPORE
- **23,487** LIFTS LODGED WITH BCA
- **40** PRIVATE ESTATES UPGRADED
- **64,553** HOUSEHOLD SHELTERS AND **2,810** STOREY SHELTERS
IN PUBLIC AND PRIVATE RESIDENTIAL BUILDINGS WERE COMMISSIONED
- **535** PUBLIC SHELTERS AND **30** TRANSIT SHELTERS WERE TESTED AND COMMISSIONED
- HIGHEST CONQUAS SCORE FOR A BUILDING **95.6**
- **435** GREEN MARK PROJECTS
- CLOSE TO **29,200** RESIDENTIAL UNITS COMMITTED TO QUALITY MARK
- **1,700** BUILDINGS RATED WITH 5 DIFFERENT LEVELS OF FRIENDLINESS
- **52** BUILDINGS TO BE UPGRADED OR UPGRADED WITH SUPPORT FROM THE ACCESSIBILITY FUND

BCA AND INDUSTRY STATISTICS (FY 2009)

₹20 MILLION FULLY COMMITTED FOR **102** PROJECTS UNDER THE GREEN MARK INCENTIVE SCHEME (GMIS) FOR NEW BUILDINGS

42 APPLICATIONS RECEIVED FOR GREEN MARK GROSS FLOOR AREA (GM GFA) INCENTIVE SCHEME

48 R&D PROJECTS APPROVED UNDER MND RESEARCH FUND OF **₹32 MILLION**

CLOSE TO **7,500** CORETRADE PERSONNEL REGISTERED WITH BCA

38,936 WORKERS AND **14,892** PMETS HAVE BEEN TRAINED BY THE BCA ACADEMY

112 PROJECTS WITH TOTAL VALUE OF MORE THAN **₹12 BILLION** DEPLOYING CORETRADE PERSONNEL

22 TRADE TESTS OFFERED AT **25** OVERSEAS TESTING CENTRES

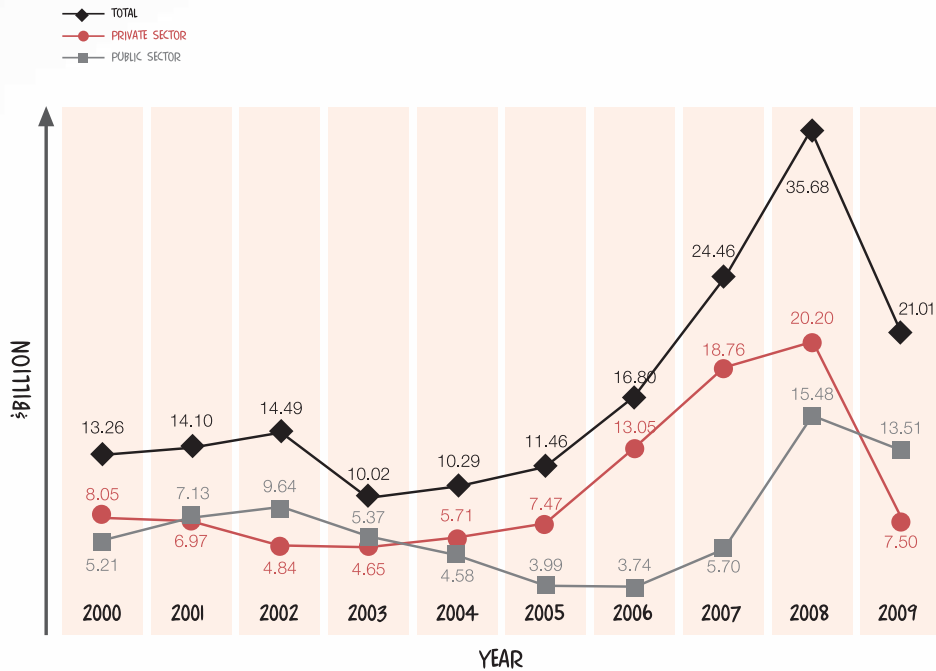
₹3.5 BILLION WORTH OF OVERSEAS CONSTRUCTION CONTRACTS CLINCHED IN 2009

BCA OVERSEES **16** COMMERCIAL DORMITORIES FOR CONSTRUCTION WORKERS

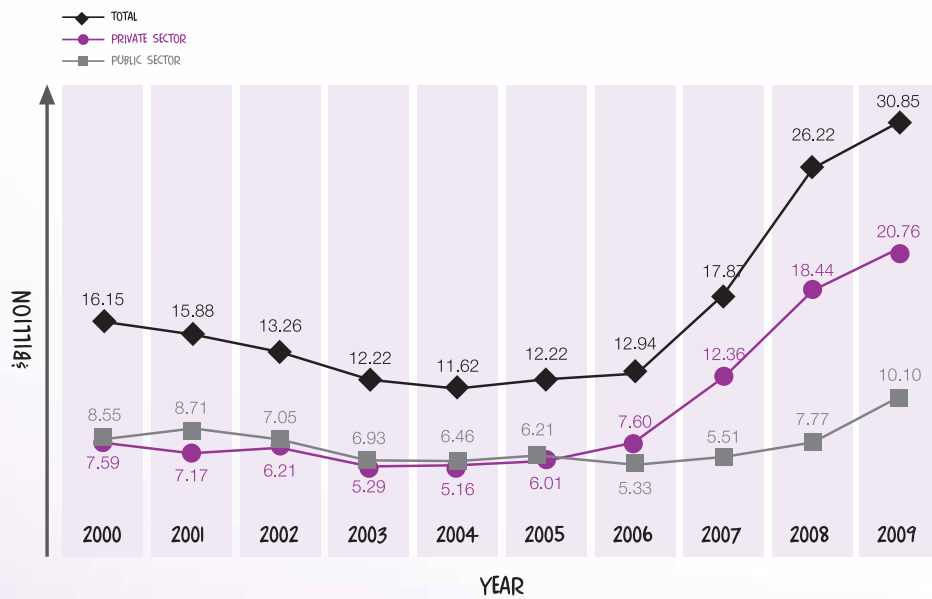


INDUSTRY PERFORMANCE STATISTICS

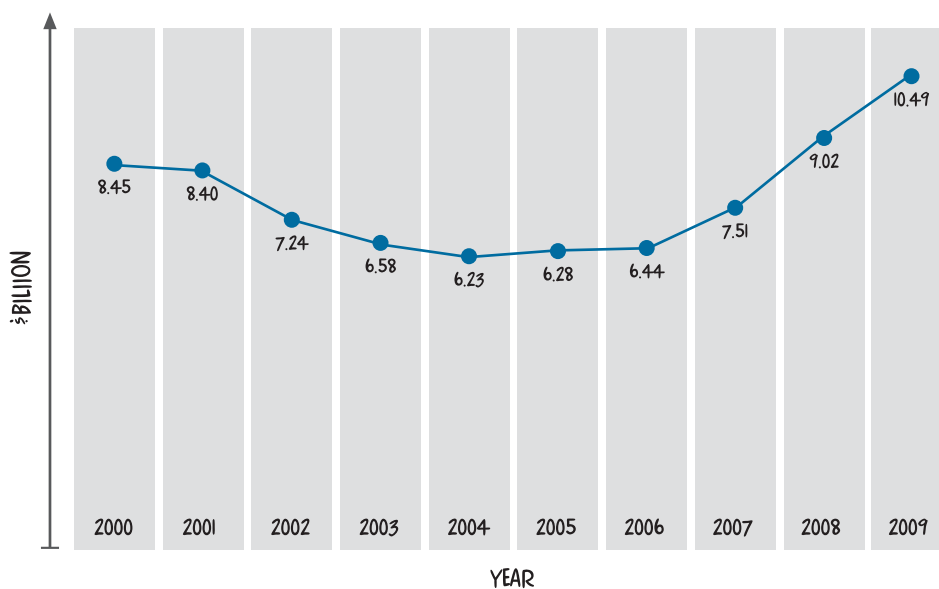
CONSTRUCTION DEMAND (EXCLUDING RECLAMATION PROJECTS)



CONSTRUCTION OUTPUT

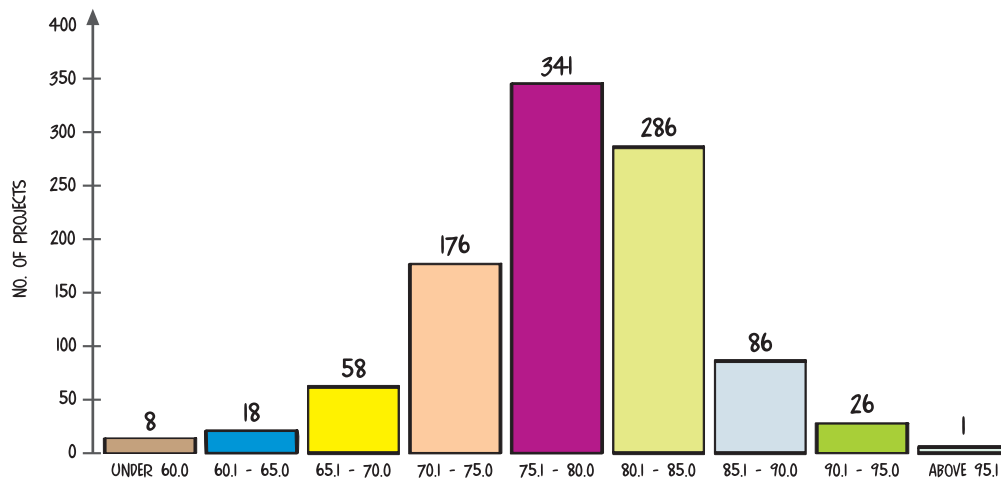


TOTAL CONSTRUCTION GDP (AT 2005 MARKET PRICES)



SOURCE: SINGAPORE DEPARTMENT OF STATISTICS

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