



Welcome to the BCA Awards 2012

The BCA Awards is an annual event to honour and pay tribute to displays of excellence in the built environment in the areas of safety, quality, sustainability and user-friendliness. In 2012, the industry received a total of 318 awards:

Award categories

- 3 Green Mark Champion Awards
- 202 Green Mark Awards
- 4 Green Building Individual Awards
- 14 Universal Design Awards
- 28 Construction Excellence Awards
- 11 Design and Engineering Safety Excellence Awards
- 24 Green and Gracious Builder Awards
- 30 Construction Productivity Awards
- 2 Built Environment Leadership Awards

BCA congratulates all the winners, for their unwavering commitment to excellence and dedication in driving the building and construction industry to greater heights.



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BCA GREEN MARK AWARD

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BCA GREEN MARK CHAMPION AWARD

The Award

The BCA Green Mark Champion Award was launched at BCA Awards 2008. This award recognises developers with strong commitment towards corporate social responsibility and outstanding achievements in environmental sustainability. It is given to developers who achieve a substantial number of Green Mark buildings at Gold level and higher.

There are two categories for the award:

- BCA Green Mark Champion
- BCA Green Mark Platinum Champion

Besides demonstrating strong commitment towards corporate social responsibility and environmental sustainability, developers must meet these criteria to qualify:

Key Assessment Criteria

Total no. of buildings rated	BCA Green Mark Champion	BCA Green Mark Platinum Champion
Green Mark Gold & above	At least 10	At least 50
Green Mark Gold ^{Plus}	At least 3	At least 15
Green Mark Platinum	At least 3	At least 15

BCA GREEN MARK CHAMPION AWARD



Ascendas

Ascendas recognises the growing importance of green, sustainable developments and the long term benefits that it brings to its business as well as the industry.

As a business space solutions provider, Ascendas wants to minimise the impact that its business has on the environment. This is an area where Ascendas can re-imagine and innovate its business solutions to embrace green practices and contribute to the environment.

Ascendas is committed to play an active role to ensure its business spaces are energy efficient and environmentally-friendly, starting from design of buildings to their maintenance and operations.

KEY ACHIEVEMENTS

- 12 projects awarded Gold and above (including 3 Platinum and 3 Gold^{Plus} awards)

BCA GREEN MARK CHAMPION AWARD

JCube



Bedok Residences



Bugis+



CapitaGreen



CapitaLand Group

As one of Asia's largest real estate companies, CapitaLand's portfolio including homes, offices, shopping malls, serviced residences and mixed developments, spans more than 110 cities in over 20 countries. Extending its credo of Building People, it embraces environmental sustainability and takes a holistic approach in property development, operations and stakeholder engagement.

Since 2007, CapitaLand has established an ISO 14001 and OHSAS 18001 certified Environmental, Health and Safety Management System. By 2012, this system will apply to its entire global operation.

CapitaLand sets internal standards for all its development projects to achieve green building standards. It aims to achieve a minimum Green Mark Gold^{Plus} standard for all its projects in Singapore.

CapitaLand's Building A Greener Future community engagement programme encourages its stakeholders and the public to play a role in protecting the environment.

KEY ACHIEVEMENTS

- 35 projects awarded Gold and above (including 7 Platinum and 9 Gold^{Plus} awards)

BCA GREEN MARK CHAMPION AWARD



National University of Singapore

National University of Singapore (NUS) is Singapore's flagship university which delivers transformative education and high-impact research. It is committed to integrating sustainability into its operations, planning, education, research and public service.

The University strives to develop excellent campus infrastructure that supports its community of higher learning through the adoption of sustainable design and construction principles.

The environmental efforts at NUS can be classified into three broad categories:

- Incorporation of innovative environmental strategies into building projects on campus
- Sustainable life cycle approach in facilities management
- Outreach to staff and students to be more environmentally-responsible

These factors have advanced the sustainability goals of NUS and make it the first tertiary institution in Singapore to be awarded the BCA Green Mark Champion Award.

KEY ACHIEVEMENTS

- 13 projects awarded Gold and above (including 4 Platinum and 5 Gold^{Plus} awards. One of the Gold^{Plus} awards is given to University Town for its green district design).

BCA GREEN MARK FOR BUILDINGS AWARD

The Award

The BCA Green Mark scheme was launched in 2005 as a key strategic programme to raise the awareness of sustainable and environmentally friendly buildings. It evaluates buildings for their environmental impact and performance. The benefits of Green Mark buildings include cost savings from efficient use of key resources such as energy and water, leading to lower operation and maintenance costs. Other less tangible benefits include enhanced occupant productivity and health due to good indoor environmental quality.

The BCA Green Mark for Buildings Award includes the following categories:

- Non-Residential Buildings (New & Existing)
- Residential Buildings (New & Existing)
- Landed Houses
- Existing Schools (New Award)
- Overseas Projects

PLATINUM

BCA GREEN MARK FOR BUILDINGS AWARD

Bedok Mall

New Non-Residential Buildings

Client / Developer

CapitaMalls Asia

Project Manager

CapitaMalls Asia

Architect

DCA Architects Pte Ltd

M&E Engineer

AECOM Singapore Pte Ltd

Structural Engineer

AECOM Singapore Pte Ltd

Quantity Surveyor

Langdon & Seah Singapore Pte Ltd

Main Contractor

Ssangyong Engineering & Construction Co., Ltd

Landscape Consultant

Coen Design International Pte Ltd

Acoustic Consultant

Acviron Acoustics Consultants Pte Ltd

Fire Consultant

Ignesis Consultants Pte Ltd

CFD Consultant

ZEB-Technology Pte Ltd

Key Features

- Estimated energy savings: 7,183,484 kWh/yr; estimated water savings: 75,509 m³/yr; Envelope Thermal Transfer Value (ETTV): 39.58 W/m².
- Highly efficient M&E provisions with water-cooled air-conditioning system at bus interchange, to reduce carbon emissions and achieve high energy savings of 32% per year.
- Computational Fluid Dynamics (CFD) simulations were carried out to achieve efficient ventilation.
- NEWater used for cooling tower make-up tank and irrigation.
- Automatic drip irrigation with rain sensors for all landscaped areas resulted in potable water savings of 28,000 m³/year.
- Use of green cement for structure.
- Use of photovoltaic glass on canopy over public walkway.



BCA GREEN MARK FOR BUILDINGS AWARD

CapitaGreen

New Non-Residential Buildings

Clients / Developers

CapitaLand Commercial Limited
CapitaCommercial Trust
Mitsubishi Estate Asia Pte. Ltd.

Project Manager

CapitaLand Commercial Project
Management Pte Ltd

Design Architect

Toyo Ito Associates, Architects

Project Architect

RSP Architects Planners &
Engineers (Pte) Ltd

M&E Engineer

Squire Mech Pte Ltd

Structural Engineer

RSP Architects Planners &
Engineers (Pte) Ltd

Quantity Surveyor

Langdon & Seah Singapore
Pte Ltd

Main Contractor

Takenaka Corporation

Landscape Consultant

Sitetectonix Pte Ltd

Lighting Consultant

Lighting Planners Associates (S)
Pte Ltd

ESD Consultant

Arup Singapore Pte Ltd

Façade Consultant

Arup Singapore Pte Ltd

Acoustics Consultant

Arup Singapore Pte Ltd

Key Features

- Estimated energy savings: 4,563,420 kWh/yr; estimated water savings: 34,536 m³/yr; ETTV: 37.13 W/m².
- Tropical façade design with low-e glass to reduce solar heat gain.
- Highly efficient chillers and zoning to reduce energy consumption.
- Motion sensors for staircases and toilets.
- Photosensors for offices and sun pipes at restaurants and gym.
- Extensive vertical greenery to reduce urban heat gain.
- Cool void to reduce energy consumption.
- Recovery of demolition materials for recycling.



BCA GREEN MARK FOR BUILDINGS AWARD

Carlton City Hotel Singapore

New Non-Residential Buildings

Client / Developer

Carlton Properties (Singapore) Pte. Ltd.

Project Manager

KPK Quantity Surveyors (Singapore) Pte Ltd

Architect

DP Architects Pte Ltd

M&E Engineer

Beca Carter Hollings & Ferner (S.E.Asia) Pte Ltd

Structural Engineer

T.Y.Lin International Pte Ltd

Quantity Surveyor

KPK Quantity Surveyors (Singapore) Pte Ltd

Main Contractor

Kajima Overseas Asia Pte Ltd

Landscape Consultant

Site Concepts International Pte Ltd

Lighting Consultant

The Lightbox Pte Ltd

Interior Designer

Hirsch / Bedner Associates Pte Ltd

Façade Consultant

Aurecon Singapore (Pte.) Ltd.

ACMV Contractor

Shinryo Corporation (Singapore Branch)

A/V Consultant

Acvicon Acoustics Consultants Pte Ltd

Sign & Way Finding

Strategy Consultant Design Datum Pte Ltd

ESD Consultant

Kaer Pte Ltd

Key Features

- Estimated energy savings: 3,653,132 kWh/yr; estimated water savings: 12,800 m³/yr; ETTV: 31.41 W/m².
- Chiller plant system efficiency of ≤ 0.65 kW/ton.
- Extensive use of LED lighting.
- Regenerative Drive Lift.
- Electric vehicle charging station.
- Air Handling Units (AHUs) and Fan Coil Units (FCUs) condensate water recycling system.
- Non-chemical anti-termite system.
- Air purification system to improve indoor air quality.



BCA GREEN MARK FOR BUILDINGS AWARD

Connexion

New Non-Residential Buildings

Client / Developer

The Farrer Park Company
Pte Ltd

Project Manager

The Farrer Park Company
Pte Ltd

Architect

DP Architects Pte Ltd

M&E Engineer

Beca Carter Hollings &
Ferner (S.E.Asia) Pte Ltd

Structural Engineer

CP Lim & Partners

Quantity Surveyor

KPK Quantity Surveyors
(Singapore) Pte Ltd

Main Contractor

Samsung – Tiong Seng
Joint Venture

Landscape Consultant

DP Green Pte Ltd

Lighting Consultant

Perfect Sense

ESD Consultant

Kaer Pte Ltd

Key Features

- Estimated energy savings: 12,925,588 kWh/yr; estimated water savings: 90,529 m³/yr; ETTV: 32.70 W/m².
- Energy savings of 12,925,588 kWh per year compared to a similar code-compliant development.
- Main chiller plant, with system efficiency of 0.63 kW/ton, serves the entire mixed development of medical centre, hotel and hospital.
- Provision of extensive greenery, including landscape spaces, sky terraces, rooftop and ground level gardens, achieving a green plot ratio of 2.64.
- Good indoor environmental quality with the use of Singapore Green Labelling Scheme (SGLS) low-Volatile Organic Compounds (VOC) paints, SGLS adhesives, UV emitters for all AHUs and titanium dioxide spray for toilets.



PLATINUM

BCA
**GREEN MARK FOR
BUILDINGS AWARD**

EduSports Building

New Non-Residential Buildings

Client / Developer

National University
of Singapore

Architect

DP Architects Pte Ltd

M&E Engineer

Beca Carter Hollings &
Ferner (S.E.Asia) Pte Ltd

Structural Engineer

Beca Carter Hollings &
Ferner (S.E.Asia) Pte Ltd

Quantity Surveyor

Rider Levett Bucknall
Pte Ltd

Main Contractor

Ando Singapore Pte Ltd

Landscape Consultant

Sitetectonix Pte Ltd

ESD Consultant

Arup Singapore Pte Ltd

Key Features

- Estimated energy savings: 1,859,308 kWh/yr; estimated water savings: 789 m³/yr; ETTV: 31.5 W/m².
- Naturally ventilated semi-outdoor atrium.
- Extensive green roof.
- Waste management including provision of recycling facilities, recycling of e-waste and organic waste and implementation of biodegradable food packaging.
- High performance, self-cleaning façade with cool paint coating.
- UV emitters in AHUs to improve indoor air quality.
- Drought tolerant plants to reduce water consumption.
- Educational features including LCD display of energy/water consumption



BCA GREEN MARK FOR BUILDINGS AWARD

Fusionopolis Phase 2A @ one-north

New Non-Residential Buildings

Clients / Developers

JTC Corporation
A*STAR

Project Manager

PM Link Pte Ltd

Architect

P&T Consultants Pte Ltd

M&E Engineer

Parsons Brinckerhoff Pte Ltd

Structural Engineer

Arup Singapore Pte Ltd

Quantity Surveyor

KPK Quantity Surveyors
(Singapore) Pte Ltd

Main Contractor

GS Engineering
& Construction Corp

Landscape Consultant

Martin Lee Designs

ESD Consultant

Parsons Brinckerhoff Pte Ltd

Key Features

- Estimated energy savings: 14,839,226 kWh/yr; estimated water savings: 156,890 m³/yr; ETTV: 34.75 W/m².
- Chiller plant system efficiency of 0.63kW/ton.
- Permanent measurement and verification instrumentation for the monitoring of chilled-water plant efficiency and heat balance.
- Low-e double glazing of vision panels.
- Integrated design of heat pipes for cooling coil at Modular Air Handling Units (MAHU) for efficient dehumidification and temperature control.
- Use of high performance fan filter units with low power consumption DC motors.
- Use of SGLS certified carpets, laminates, waterproofing system, external paint and dry-wall partitions. Timber decking, raised floor, ceiling panel made up of more than 30% of recycled content.



BCA GREEN MARK FOR BUILDINGS AWARD

Gardens By The Bay Bay South

New Non-Residential Buildings (Special)

Client / Developer

National Parks Board

Project Manager

PM Link Pte Ltd

Architects

CPG Consultants Pte Ltd
Wilkinson Eyre Architects

M&E Engineer

CPG Consultants Pte Ltd

Structural Engineer

CPG Consultants Pte Ltd

Quantity Surveyors

CPG Consultants Pte Ltd
Langdon & Seah Singapore
Pte Ltd

Main Contractors

Conservatory:

Woh Hup (Private) Ltd

Supertrees:

Expand Construction Pte Ltd

Energy Centre:

Expand Construction Pte Ltd

Support Facilities:

Precise Development Pte Ltd

Basement Carpark:

Planar One & Associates Pte Ltd

Landscape Consultant

Grant Associates
Singapore Pte. Ltd.

Façade Consultant

Arup Singapore Pte Ltd

ESD Consultant

CPGreen - CPG Consultants
Pte Ltd

Key Features

- Estimated energy savings: 16,800,700 kWh/yr; estimated water savings: 741,539 m³/yr.
- Spectrally selected glass with motorised shading system.
- Biomass cogeneration system with absorption chiller.
- Thermal stratification, displacement ventilation and slab cooling.
- Liquid desiccant system.
- Provision of photovoltaic panel.
- Natural water filtration using lake.
- Earth control measures with turbidity curtain.



BCA
**GREEN MARK FOR
 BUILDINGS AWARD**

Holiday Inn Express Singapore Orchard Road

New Non-Residential Buildings

Client / Developer

Valeside Pte Ltd

Project Director

Swee Cheng Management
 Pte Ltd

Project Manager

Langdon & Seah Project
 Management Pte Ltd

Architect

JGP Architecture (S) Pte Ltd

M&E Engineer

United Project
 Consultants Pte Ltd

Structural Engineer

JS Tan & Associates

Quantity Surveyor

Langdon & Seah Singapore
 Pte Ltd

Main Contractor

Kienta Engineering Construction
 Pte Ltd

Interior Design

APSA Pte Ltd

Lighting Consultant

Lightcraft Pte Ltd

GreenMark Consultant

Kaer Pte Ltd

Key Features

- Estimated energy savings: 1,623,495 kWh/yr; estimated water savings: 9,400 m³/yr; ETTV: 38.14 W/m².
- Green roof and green wall.
- Self-cleaning paint for wall.
- Thermally broken frame to reduce heat transfer.
- Recycling of FCU condensate water for cooling make up water.
- Extensive use of LED lighting.
- Energy efficient Air-Conditioning and Mechanical Ventilation (ACMV) system.
- Extensive use of environmental friendly materials.



PLATINUM

BCA
**GREEN MARK FOR
BUILDINGS AWARD**

Hyflux Innovation Centre

New Non-Residential Buildings

Client / Developer

Hyflux Innovation Centre Pte Ltd

Architect

Point Architects

M&E Engineer

William Ng Consultants Pte Ltd

Structural Engineer

Tenwit Consultants Pte Ltd

Quantity Surveyor

JIA Quantity Surveys and Project
Manager Pte Ltd

Main Contractor

Lian Soon Construction Pte Ltd

Landscape Consultant

Chig Landscape Architecture

ESD Consultant

G-Energy Global Pte Ltd

Key Features

- Estimated energy savings: 2,781,499 kWh/yr; estimated water savings: 15,646 m³/yr; ETTV: 39.85 W/m².
- Chiller plant system efficiency of 0.59 kW/ton.
- 72 kWp solar panel to harness and generate clean energy.
- Grey water collection for flushing toilets.
- 100% collection for AHU condensate.
- Measurement and verification system for chiller plant.
- Green education corner.
- Extensive usage of environmental and friendly sustainable materials within the development.



PLATINUM

BCA GREEN MARK FOR BUILDINGS AWARD

jem

New Non-Residential Buildings

Clients / Developers

Lend Lease Commercial Investments Pte Ltd
Lend Lease Retail Investments 3 Pte Ltd

Project Manager

Lend Lease

Architect

SAA Architects Pte Ltd

M&E Engineer

Bescon Consulting Engineers Pte

Structural Engineer

Meinhardt Infrastructure Pte Ltd

Main Contractor

Lend Lease

Landscape Consultant

ICN Design International Pte Ltd

ESD Consultant

Cofely South East Asia Pte. Ltd.

Key Features

- Estimated energy savings: 13,016,670 kWh/yr; estimated water savings: 265,160 m³/yr; ETTV: 37.81 W/m².
- More than 100% green replacement.
- High efficiency “multi-tier” chilled water plant.
- Highly responsive airside and mechanical ventilation system.
- Extensive environmental modelling.
- Green lease and Green Mark certification for retailers.
- Innovative 2-stage fresh air treatment and infiltration controls.
- Extensive use of LED lighting.



BCA GREEN MARK FOR BUILDINGS AWARD

Mount Elizabeth Novena Hospital

New Non-Residential Buildings

Clients / Developers

Parkway Novena Pte Ltd
Parkway Irrawaddy Pte Ltd

Architect

Consultants Incorporated
Architects + Planners

Interior Design

HOK International
(Singapore) Pte Ltd

M&E Engineer

Parsons Brinckerhoff Pte Ltd

Lighting Consultant

The Lightbox Pte Ltd

Structural Engineer

T.Y.Lin International Pte Ltd

Quantity Surveyor

Langdon & Seah
Singapore Pte Ltd

Main Contractor

Penta Ocean Construction Co.,
Ltd

Landscape Consultant

Mace Studio Pte Ltd

TBP & ESD Consultant

ZEB-Technology Pte Ltd

Key Features

- Estimated energy savings: 13,176,532.28 kWh/yr; estimated water savings: 4,574.42 m³/yr; ETTV: 31.76 W/m².
- Efficient chiller plant room design with an efficiency of 0.625 kW/ ton.
- Pre-cool AHU to improve indoor air quality, energy efficiency and Relative Humidity (RH) control.
- Demand control ventilation with carbon monoxide (CO) sensors for car park and carbon dioxide (CO₂) sensors.
- Permanent instrumentation for measurement and verification of chiller plant.
- 10kWp onsite energy generation through photovoltaic panels.
- Energy efficient lighting design with LED and other efficient lighting systems.
- Lifts and escalators installed with Variable Voltage Variable Frequency (VVVF) motor and sensors.
- Extensive greenery at various levels.



BCA
**GREEN MARK FOR
BUILDINGS AWARD**

PLATINUM

National Heart Centre Singapore

New Non-Residential Buildings

Client / Developer

Ministry of Health

Project Manager

PM Link Pte Ltd

Architect

ONG&ONG Pte Ltd

M&E Engineer

Squire Mech Pte Ltd

Structural Engineer

Beca Carter Hollings
& Ferner (S.E.Asia) Pte Ltd

Quantity Surveyor

Langdon & Seah
Singapore Pte Ltd

Main Contractor

Shimizu Corporation

Landscape Consultant

ONG&ONG Pte Ltd

Medical Planner

Broadway Malyan Asia Pte. Ltd.

Façade Consultant

Arup Façade Engineering

ESD Consultants

Lincolne Scott Ng Pte Ltd
WSP Ng Pte Ltd

Key Features

- Estimated energy savings: 6,197,418 kWh/yr; estimated water savings: 12,534 m³/yr; ETTV: 36.4 W/m².
- High performance building fabric.
- Chiller plant system efficiency of 0.607kW/ton with accurate permanent monitoring measurement and verification tools.
- Heat recovery.
- Rainwater harvesting.
- Recycling of AHUs Condensate.
- UVC emitters in all AHUs.
- Provision of charging stations for electric vehicles.



BCA
**GREEN MARK FOR
BUILDINGS AWARD**

PLATINUM

National University of Singapore - Yong Loo Lin School of Medicine Block MD1

New Non-Residential Buildings

Client / Developer

National University of Singapore

Project Manager

Office of Estate and
Development, National
University of Singapore

Architect

CPG Consultants Pte Ltd

M&E Engineer

CPG Consultants Pte Ltd

Structural Engineer

CPG Consultants Pte Ltd

Quantity Surveyor

Rider Levett Bucknall LLP

Landscape Consultant

CPG Consultants Pte Ltd

Façade Consultant

HCCH Consulting Pte Ltd

Energy Modeling

Kaer Pte Ltd

Key Features

- Estimated energy savings: 7,657,878 kWh/yr; estimated water savings: 52,480 m³/yr; ETTV: 25.65 W/m².
- Chiller plant system efficiency of 0.63kW/ton.
- Use of LED and T5 lighting.
- Heat pipes in all AHUs.
- Heat recovery unit.
- Use of compost waste.
- Recycling 75% of the AHU condensate.
- Siphonic rainwater discharge.



BCA GREEN MARK FOR BUILDINGS AWARD

NTT Serangoon Building

New Non-Residential Buildings (Special)

Client / Developer

NTT Worldwide
Telecommunications
Corporation

Project Managers

NTT Facilities, Inc.
Langdon & Seah Project
Management Pte Ltd

Architect

Ap. Crest
3HPArchitects Pte Ltd

M&E Engineer

Alpha Consulting
Engineers Pte Ltd

Structural Engineer

Chong & Lee
Consultants Pte Ltd

Quantity Surveyor

Langdon & Seah
Singapore Pte Ltd

Main Contractor

Kajima Overseas Asia Pte Ltd

Landscape Consultant

Win International Pte Ltd

ACMV Contractor

Hitachi Plant Technologies, Ltd

ESD Consultant

Kaer Pte Ltd

Key Features

- Estimated energy savings: 5,563,016 kWh/yr; estimated water savings: 570 m³/yr; ETTV: 15.00 W/m².
- Energy efficient ACMV system (chiller plant and CRAC unit).
- Energy efficient LED and T5 lighting system, with motion sensor.
- Automatic cleaning system for condenser tube.
- NEWater and rainwater collection for landscape irrigation.
- Extensive indoor air quality program including construction management, test prior to occupancy, occupant survey, extensive low VOC coating, adhesive, sealant, paint and zero formaldehyde.
- Recycle at least 50% of construction waste and provision of space to collect and recycle waste.



BCA GREEN MARK FOR BUILDINGS AWARD

orchardgateway

New Non-Residential Buildings

Client / Developer

UE Orchard Pte Ltd

Project Manager

UED-BTS Development Pte Ltd

Architect

AWP Pte Ltd

M&E Engineer

Alpha Consulting
Engineers Pte Ltd

Structural Engineer

Meinhardt (Singapore) Pte Ltd

Quantity Surveyor

KPK Quantity Surveyors
(Singapore) Pte Ltd

Main Contractor

Hyundai Engineering &
Construction Co., Ltd

Landscape Consultant

Peridan Asia Pte Ltd

Façade Consultant

Meinhardt Façade Technology
(S) Pte Ltd

Lighting Consultant

Tokyo Shomei Consultant

Concept and ID Consultant

Tange Associates Asia Pte. Ltd.

Acoustic Consultant

CCW Associates Pte Ltd

ESD Consultant

G-Energy Global Pte Ltd

Key Features

- Estimated energy savings: 10,111,662 kWh/yr; estimated water savings: 579,211 m³/yr; ETTV: 39.87 W/m².
- Chiller plant system efficiency of 0.62 kW/ton.
- Energy efficient lighting system.
- Heat pumps for hot water provision.
- Extensive greenery, with a green plot ratio of 4.07.
- Recycling of food waste for bio-methanisation.
- Green lease for retail tenants.
- Accurate measurement and verification monitoring system.



PARKROYAL on Pickering; and One Upper Pickering

New Non-Residential Buildings

Client / Developer

Pan Pacific Hotels
Group Limited

Architect

WOHA Architects Pte Ltd

M&E Engineer

Beca Carter Hollings & Ferner
(S.E.Asia) Pte Ltd

Structural Engineer

TEP Consultants Pte Ltd

Quantity Surveyor

Rider Levett Bucknall LLP

Main Contractor

Tiong Seng
Contractors (Pte) Ltd

Landscape Consultant

Tierra Design Pte Ltd

Façade Consultant

Meinhardt Façade Technology
(S) Pte Ltd

Lighting Consultant

Lighting Planners Associates
(S) Pte Ltd

Acoustic Consultant

CCW Associates Pte Ltd

ESD Consultant

LJ Energy Pte Ltd

Key Features

- Estimated energy savings: 3,117,212 kWh/yr; estimated water savings: 6,900 m³/yr; ETTV: 39.49 W/m².
- Chiller plant system efficiency of <0.63 kW/ton, comes complete measurement and verification monitoring system.
- Extensive use of LED lighting resulting in energy savings.
- Energy generated from 60 kWp of photovoltaic cells reduced total energy consumption by 1%.
- Lush greenery with a green plot ratio of 12 and automatic drip irrigation using raining and NEWater.
- Energy simulation resulted in more than 31% of energy savings.
- Green leases for office and hotel.



Republic Polytechnic (RP) Expansion Project and Singapore Institute of Technology (SIT) Campus Building

New Non-Residential Buildings



Client / Developer

Republic Polytechnic

Project Manager

Langdon & Seah Project Management Pte Ltd

Architects

DP Architects Pte Ltd
Maki and Associates

M&E Engineer

Beca Carter Hollings
& Ferner (S.E.Asia) Pte Ltd

Structural Engineer

Meinhardt (Singapore) Pte Ltd

Quantity Surveyor

Rider Levett Bucknall LLP

Landscape Consultant

DP Green Pte Ltd

ESD Consultant

Beca Carter Hollings & Ferner (S.E.Asia) Pte Ltd

Key Features

- Estimated energy savings: 2,524,674 kWh/yr; estimated water savings: 2,557 m³/yr; ETTV: 38.48 W/m².
- Installation of motion sensors and photocells for lighting control to conserve energy.
- Automatic condenser tube cleaning system to minimise fouling and optimise the performance and energy efficiency of chillers.
- UV light emitters in AHUs to improve air quality.
- Siphonic rainwater discharge to achieve high discharge capacity.
- Use of fluorescent lightings with high frequency electronic ballasts to improve light efficiency.
- Use of Water Efficiency Labelling Scheme (WELS)-certified fittings.
- Lifts which run on highly efficient Permanent Magnet Gearless Drive (PMGD) system result in 40% of energy savings.

PLATINUM

BCA
**GREEN MARK FOR
BUILDINGS AWARD**

SDV Green Warehouse

New Non-Residential Buildings

Owner / End User

SDV Logistics (Singapore) Pte Ltd

Developer

BP-SDV Pte Ltd

Project Manager

Boustead Projects Pte Ltd

Architect

Hwang Architects

M&E Engineer

A1 Air-conditioning Pte Ltd

Structural Engineer

BC Koh & Partners LLP

Quantity Surveyor

Boustead Projects Pte Ltd

Main Contractor

Boustead Projects Pte Ltd

Landscape Consultant

Earthscape Concepts Pte Ltd

ESD Consultant

Jurong Consultants Pte Ltd

Key Features

- Estimated energy savings: 2,540,737 kWh/yr; estimated water savings: 12,100 m³/yr; ETTV: 19.66 W/m².
- Excellent plant room efficiency of 0.60 kW/ton.
- Use of efficient T5, induction and LED lighting.
- Motion sensors for all toilets and staircases.
- Rainwater harvesting for flushing and irrigation purposes.
- Extensive use of green concrete and a concrete usage index below 0.4.
- Collection of 98% of the AHUs condensates.



PLATINUM

BCA
**GREEN MARK FOR
BUILDINGS AWARD**



Singapore Prison Service Headquarters

New Non-Residential Buildings

Client / Developer

Singapore Prison Service

Project Manager

PM Link Pte Ltd

Architect

CPG Consultants Pte Ltd

M&E Engineer

CPG Consultants Pte Ltd

Structural Engineer

CPG Consultants Pte Ltd

Quantity Surveyor

CPG Consultants Pte Ltd

ESD Consultant

CPG Consultants Pte Ltd

Key Features

- Estimated energy savings: 2,447,600 kWh/yr; estimated water savings: 55,341 m³/yr; ETTV: 37.71 W/m².
- Chiller plant system efficiency of 0.65 kW/ton.
- Ductless fan with CO sensor for carpark.
- 1 MW fuel cell generation.
- Drip irrigation system.
- Provision of filtration media and differential pressure monitoring.
- Non-chemical anti-termite treatment.

BCA
**GREEN MARK FOR
BUILDINGS AWARD**

**Singapore University of Technology and
Design East Coast Campus Phase 1
Academic Facilities and Sports Complex**
New Non-Residential Buildings



Client / Developer

Singapore University of
Technology and Design (SUTD)

Project Manager

PM Link Pte Ltd

Architects

UNStudio
DP Architects Pte Ltd
LOOK Architects Pte Ltd
Surbana International
Consultants Pte. Ltd.

M&E Engineer

CPG Consultants Pte Ltd

Structural Engineer

Parsons Brinckerhoff Pte Ltd

Quantity Surveyor

CPG Consultants Pte Ltd

Landscape Consultant

Surbana International
Consultants Pte. Ltd.

Façade Consultant

Arup Singapore Pte Ltd

Acoustic Consultant

Arup Singapore Pte Ltd

ESD Consultant

DP Architects Pte Ltd
Surbana International
Consultants Pte. Ltd.

Key Features

- Estimated energy savings: 10,806,790 kWh/yr; estimated water savings: 65,500 m³/yr; ETTV: 29.47 W/m².
- Low urban heat island effect through generous landscaping and green roof.
- Naturally ventilated outdoor study areas.
- Ideal building orientation to lower solar heat gain.
- Good thermal performance of building envelope.
- Energy efficient air-conditioning design, system and controls.
- Energy efficient zonal lighting design and systems.
- Rainwater harvesting with automatic drip irrigation system and rain sensors.

BCA GREEN MARK FOR BUILDINGS AWARD

Sofitel So Singapore

New Non-Residential Buildings



Client / Developer
Royal Brothers Group

Project Manager
Royal Brothers Group

Architects
DP Architects Pte Ltd

M&E Engineer
Beca Carter Hollings & Ferner
(S.E.Asia) Pte Ltd

Structural Engineer
Beca Carter Hollings & Ferner
(S.E.Asia) Pte Ltd

Quantity Surveyor
KPK Quantity Surveyors
(Singapore) Pte Ltd

Landscape Consultant
DP Green Pte Ltd

Interior Design
Miaja Design Group Pte Ltd

Specialist Lighting Consultant
Light Cibles Pte Ltd

Acoustic Consultant
Acvicon Acoustics Consultants
Pte Ltd

ESD Consultant
Beca Carter Hollings & Ferner
(S.E.Asia) Pte Ltd

Key Features

- Estimated energy savings: 1,125,570 kWh/yr; estimated water savings: 915 m³/yr; ETTV: 39.63 W/m².
- Automatic condenser tube cleaning system to improve the efficiency of heat transfer between refrigerant and condenser tubes.
- UV emitters in AHUs to improve air quality.
- Siphonic rainwater discharge system to achieve high discharge capacity.
- Use of heat pumps to heat water.
- Motion sensors at the staircases and common toilets for lighting control.
- Extensive use of green labelled products, such as carpet, dry wall partitions, wall coverings and ceiling boards.
- Use of energy efficient LED and T5 lighting.

BCA GREEN MARK FOR BUILDINGS AWARD

South Beach (Commercial)

New Non-Residential Buildings

Client / Developer

City Developments Limited
IOI Corporation Berhad

Architects

Aedas Pte Ltd

M&E Engineer

Parsons Brinckerhoff Pte Ltd

Structural Engineer

Arup Singapore Pte Ltd

Quantity Surveyor

Langdon & Seah
Singapore Pte Ltd

Main Contractor

Hyundai Engineering &
Construction Co., Ltd

Landscape Consultant

ICN Design International Pte
Ltd

Façade Consultant

Arup Singapore Pte Ltd

Lighting Consultant

Light Cibles Pte Ltd

ESD Consultant

Arup Singapore Pte Ltd

Key Features

- Estimated energy savings: 16,221,767 kWh/yr; estimated water savings: 172,587 m³/yr; ETTV: 38.51 W/m².
- Sustainable canopy design optimising thermal comfort, daylight, wind, at the same time harvesting renewable energy and rainwater.
- Optimised building envelope with the use of glass with good solar coefficient.
- Heat pumps and heat recovery systems to heat water.
- Provision of green corner.
- Intelligent car park system and charging points for electric vehicles.
- Siphonic rainwater drainage system to achieve high discharge capacity.
- High frequency ballast and motion sensors for staircase and toilets.



Temasek Polytechnic – South Wing Phase 1

New Non-Residential Buildings



Client / Developer
 Temasek Polytechnic

Project Manager
 Langdon & Seah Project
 Management Pte Ltd

Architects
 Forum Architects Pte Ltd

M&E Engineer
 Rankine & Hill
 (Singapore) Pte Ltd

Structural Engineer
 RSP Architects Planners &
 Engineers (Pte) Ltd

Quantity Surveyor
 Faithful+Gould Pte. Limited

Main Contractor
 Gennal Industries Pte Ltd

Acoustic Consultant
 CCW Associates Pte Ltd

Key Features

- Estimated energy savings: 1,435,926 kWh/yr; estimated water savings: 21,195 m³/yr; ETTV: 38.6 W/m².
- Green roof and vertical greenery.
- Natural ventilation and light shaft for natural daylighting.
- Design of windows at pre-function area to complement monsoon winds for natural ventilation.
- Siphonic rainwater drainage to achieve high discharge capacity.
- Automatic condenser tube cleaning system for chiller plant.
- Monitoring devices at wind chimneys for tracking energy usage and educational purposes.

PLATINUM

BCA
**GREEN MARK FOR
BUILDINGS AWARD**

Training Block at BCA Academy

New Non-Residential Buildings



Client / Developer

BCA Academy

Architects

RSP Architects Planners &
Engineers (Pte) Ltd

M&E Engineer

Squire Mech Pte Ltd

Structural Engineer

RSP Architects Planners &
Engineers (Pte) Ltd

Quantity Surveyor

Langdon & Seah Singapore
Pte Ltd

Main Contractor

CCECC Singapore Pte Ltd

Landscape Consultant

Coen Design International
Pte Ltd

CFD Consultant

A*STAR Institute of High
Performance Computing

Key Features

- Estimated energy savings: 66,902 kWh/yr; estimated water savings: 438 m³/yr.
- Design for 100% natural ventilation with the use of computational fluid dynamics wind studies.
- Use of sun pipes with photocell sensors for natural daylighting.
- Photovoltaic panels on the roof to generate energy and for demonstration purposes during training lessons.
- Adoption of Green Demolition Protocol to recycle concrete as hardcore for permanent works.
- Precast building in fair-faced concrete finish without any skim coat or paint to improve productivity.
- Fully-integrated BIM during design development and construction to improve coordination and productivity on site.
- Provision of car park lots for hybrid vehicles and charging point for electric vehicles.



BCA
GREEN MARK FOR BUILDINGS AWARD

Bugis+
Existing Non-Residential Buildings

Building Owner
CapitaMall Trust

Facility Management
CapitaMalls Asia

ESCO
LJ Energy Pte Ltd

ESD Consultant
LJ Energy Pte Ltd

Key Features

- Estimated energy savings: 1,245,850 kWh/yr; estimated water savings: 4,470 m³/yr.
- Chiller plant system efficiency of ≤ 0.65 kW/ton.
- Green plot ratio of 3.07 with garden spaces.
- PUB certified water efficient building with all sanitary and water fittings certified under the Water Efficiency Labelling Scheme.
- Sustainable operations and maintenance system through green policies
- Engagement of tenant and public through various green awareness programmes.
- Incorporation of green lease as part of tenancy agreement, covering fit-out requirements and environmental management.



PLATINUM

BCA
**GREEN MARK FOR
BUILDINGS AWARD**

City Square Mall

Existing Non-Residential Buildings

Building Owner

City Developments Limited

Facility Management

CBM Pte Ltd

ESCO

G-Energy Global Pte Ltd

Key Features

- Estimated energy savings: 14,000,000 kWh/yr; estimated water savings: 20,433 m³/yr.
- Chiller plant system efficiency of 0.65 kW/ton.
- 5-in-1 eco-roof with photovoltaic panels.
- Extensive use of daylighting.
- Motion sensors for car parks, staircases, lobbies, toilets and corridors for light control.
- Automatic condenser tube cleaning system for chiller plant.
- Extensive green roof and vertical green wall.
- Car park guidance system.
- Green educational messages at lobbies and toilets.



BCA
**GREEN MARK FOR
BUILDINGS AWARD**

PLATINUM

Great World Serviced Apartments

Existing Non-Residential Buildings

Building Owner
Allgreen Properties Limited

ESCO
G-Energy Global Pte Ltd

ESD Consultant
G-Energy Global Pte Ltd

Key Features

- Estimated energy savings: 2,579,270 kWh/yr; estimated water savings: 31,876 m³/yr.
- Central chiller plant system efficiency of 0.6 kW/ton.
- Permanent measurement and verification instrumentation and heat balancing for accurate monitoring of chiller plant performance.
- Variable speed drives with CO sensors to regulate the ventilation fans at the basement car park.
- Energy efficient lightings for common areas, car park and apartment units.
- Motion sensors for toilets and photocell sensors for lift lobbies.
- Priority car park lots for hybrid cars.



BCA
**GREEN MARK FOR
BUILDINGS AWARD**

PLATINUM

Junction 8

Existing Non-Residential Buildings

Building Owner

CapitaMall Trust

Facility Management

CapitaMall Trust

Project Manager

CapitaMalls Asia Limited

ESD Consultant

G-Energy Global Pte Ltd

Key Features

- Estimated energy savings: 2,538,862 kWh/yr; estimated water savings: 22,502 m³/yr
- Chiller plant system efficiency of 0.65 kW/ton.
- Permanent measurement and verification instrumentation and heat balancing to monitor chiller plant system efficiency.
- Changing of lighting in common areas to energy efficient LED and T5 fluorescent lights, including photocell sensors for atrium.
- Titanium dioxide for all toilets.
- Vertical greenery at roof terrace and green column at level 1.
- AHU glass coating to improve AHU lifespan.
- Automatic condenser tube cleaning system for chiller plant.



PLATINUM

BCA
**GREEN MARK FOR
BUILDINGS AWARD**

Jurong Port

Existing Non-Residential Buildings

Building Owner

Jurong Port Pte Ltd

Facility Management

RSP Architects Planners &
Engineers (Pte) Ltd

M&E Consultant

J Roger Preston (Singapore)
Pte Ltd

ESD Consultant

G-Energy Global Pte Ltd

Key Features

- Estimated energy savings: 190,201 kWh/yr.
- Energy efficient façade design with ETTV of 38.1 W/m².
- Chiller plant system efficiency of 0.6 kW/ton with permanent measurement and verification instrumentation.
- Provision of vertical greenery.
- Use of energy efficient T5 lighting in the building.
- Occupancy sensors installed in all toilets and staircases.
- Automatic condenser tube cleaning system for chiller plant.



BCA
**GREEN MARK FOR
BUILDINGS AWARD**

PLATINUM

National Institute of Education

Existing Non-Residential Buildings

Building Owner

National Institute of Education

Project Management

National Institute of Education

ESD Consultant

Parsons Brinckerhoff Pte Ltd

Key Features

- Estimated energy savings: 2,383,740 kWh/yr; estimated water savings: 7,134 m³/yr
- Improved plant efficiency from 0.85 kW/ton to 0.6 kW/ton by replacing and optimising chillers.
- Permanent measurement and verification instrumentations and energy monitoring system to monitor chiller plant performance and the building's energy usage.
- Replacement of lighting to LED and T5 lights in classroom and offices.
- Extensive greenery in campus.



BCA
**GREEN MARK FOR
BUILDINGS AWARD**

Republic Plaza

Existing Non-Residential Buildings

Building Owner

City Developments Limited

Facility Management

CBM Pte Ltd

Energy Consultant

CBM Solutions Pte Ltd

ESD Consultant

CBM Solutions Pte Ltd

Key Features

- Total energy savings of 3,980,052 kWh/ year which translates to approximately 17.5% reduction in energy consumption and annual cost savings of \$870,000.
- Existing two chiller plants were amalgamated to improve efficiency. New chiller plant has been designed to achieve an efficiency of 0.59 kW/ton, and is guaranteed under the Energy Performance contract.
- Investment payback period of 5 years.
- Replacement of lighting to LED lights at multi-storey car park.
- Provision of automatic car park guidance system for the 8-storey car park.
- Motion sensors for light control in the common toilets and staircases.



BCA
**GREEN MARK FOR
BUILDINGS AWARD**

PLATINUM

Tampines Grande

Existing Non-Residential Buildings

Building Owner

City Developments Limited

Facility Management

CBM Pte Ltd

Key Features

- Estimated energy savings: 381,454 kWh/yr.
- Chiller plant system efficiency of 0.65 kW/ton.
- 107 kWp of building integrated photovoltaic panels.
- Heat recovery wheel and heat pipe for pre-cooled AHU.
- Use of solar air-conditioning system.
- Automatic condenser tube cleaning system for chiller plant and chemical-free water treatment for cooling tower.
- Extensive green roof.
- Car park guidance system.
- Rainwater harvesting.



BCA GREEN MARK FOR BUILDINGS AWARD

Tong Eng Building

Existing Non-Residential Buildings

Building Owner

The Management Corporation
Strata Title Plan No. 577

Facility Management

Tong Eng Brothers Pte Ltd.

Energy Consultant

Comfort Management Pte Ltd

ESD Consultant

Comfort Management Pte Ltd

Key Features

- Estimated energy savings: 1,451,604 kWh/yr; estimated water savings: 6,995 m³/yr.
- Energy savings of 48% compared to landlord energy consumption and 37% compared to total building consumption.
- Replacement of T8 lights with energy efficient T5 lights.
- Improved Chiller plant system efficiency of from 1.515 kW/ton (WCPU) to 0.57 kW/ton (Chilled Water System).
- WELS-certified toilet fittings.
- Long term performance-based contract with energy conservation company to monitor the energy use and system efficiency.



BCA
**GREEN MARK FOR
BUILDINGS AWARD**

PLATINUM

Treetops Executive Residences

Existing Non-Residential Buildings

Building Owner

British and Malayan
Trustees Ltd

Facility Management

DTZ Property Management
Services Pte Ltd

Energy Consultant

Comfort Management Pte Ltd

ESD Consultant

Comfort Management Pte Ltd

Key Features

- Total energy savings of 2,905,454 kWh/ year, translating to approximately 50% reduction in energy consumption and annual cost savings of \$760,000.
- Use of tri-generation system to produce electricity, chilled water for air-conditioning system and hot water.
- Chilled water plant system efficiency (absorption chiller) of 0.39 kWe/ton.
- Electronic air filters installed at FCUs to improve indoor air quality.
- Use of energy efficient lightings.
- Extensive greenery landscape with a green plot ratio of 5.9.
- Long term energy performance contract with an energy consultant to monitor the energy usage and system efficiency.



**BCA
GREEN MARK FOR
BUILDINGS AWARD****Ardmore three**
New Residential Buildings**Client / Developer**

Botanica Pte Ltd

Architect

Architects 61 Pte Ltd

M&E Engineer

HPX Consulting Engineers

Structural Engineer

HCE Engineers Partnership

Quantity Surveyor

KPK Quantity Surveyors
(Singapore) Pte Ltd

Main Contractor

Kim Seng Heng Engineering
(Pte) Ltd

Landscape Consultant

Colin K Okashimo and Associates

Interior Designer

Silverfox Studios Pte Ltd

Lighting Consultant

Project Lighting Design Pte Ltd

Signage Consultant

Duet Design Pte Ltd

Key Features

- Estimated energy savings: 324,142 kWh/yr; estimated water savings: 9,883 m³/yr; Residential Envelope Transmittance Value (RETV): 16.93 W/m².
- Use of low-e, double glazing windows.
- Use of cool paint for external façade.
- Use of energy efficient air-conditioning system.
- Use of energy efficient LED and T5 lighting.
- Use of rainwater for landscape irrigation.
- Use of green-labelled kitchen cabinet system.
- Use of non-chemical anti-termite treatment.



BCA GREEN MARK FOR BUILDINGS AWARD

Bedok Residences

New Residential Buildings



Client / Developer

CapitaLand Residential
Singapore

Project Manager

CapitaLand Residential
Singapore

Architect

DCA Architects Pte Ltd

M&E Engineer

AECOM Singapore Pte Ltd

Structural Engineer

AECOM Singapore Pte Ltd

Quantity Surveyor

Langdon & Seah
Singapore Pte Ltd

Main Contractor

Ssangyong Engineering &
Construction Co., Ltd

Landscape Consultant

Coen Design
International Pte Ltd

Acoustic Consultant

Acvion Acoustics Consultants
Pte Ltd

Fire Consultant

Ignesis Consultants Pte Ltd

CFD Consultant

ZEB-Technology Pte Ltd

Key Features

- Estimated energy savings: 2,816,105 kWh/yr; estimated water savings: 49,741 m³/yr; RETV: 16.71 W/m².
- Good passive design to encourage natural ventilation.
- Excellent North-South building orientation and provision of high performing glazing for windows to minimise heat gain.
- Harnessing of solar energy.
- Energy efficient air-conditioning system, lights and lifts.
- Use of sustainable construction materials and products in its development.
- Green education corner.

BCA GREEN MARK FOR BUILDINGS AWARD

Gaia

New Residential Buildings

Client / Developer

Amerald Land Pte Ltd

Project Manager

Amerald Land Pte Ltd

Architect

Kyoob Architects Pte Ltd

M&E Engineer

PTA Consultants Pte Ltd

Structural Engineer

LSW Consulting
Engineers Pte Ltd

Quantity Surveyor

Precise Development Pte Ltd

Main Contractor

Precise Development Pte Ltd

ESD Consultant

Building System & Diagnostics
Pte Ltd

Key Features

- Estimated energy savings: 126,536 kWh/yr; estimated water savings: 2,324 m³/yr; RETV: 19.09 W/m².
- Residential project fully constructed with green concrete.
- One of Singapore tallest living green wall (more than 60 meters).
- Unit layout optimised to effectively capture air flow deflected by surrounding buildings to improve indoor cross ventilation.
- Movable shading fins at balcony to cut back on solar heat gain into living space.
- Residences equipped with the most efficient air-conditioning system, refrigerator, gas water heater and washing machine to save operating cost.
- Extensive use of LED lightings in common area.
- Use of sustainable construction materials in the development.



Kent Vale II Staff Housing Development

New Residential Buildings

Client / Developer

National University of Singapore

Project Manager

Office of Estate and
Development, National
University of Singapore

Architect

MKPL Architects Pte. Ltd.

M&E Engineer

J Roger Preston (Singapore)
Pte. Ltd.

Structural Engineer

KTP Consultants Pte. Ltd.

Quantity Surveyor

KPK Quantity Surveyors
(Singapore) Pte Ltd

Main Contractor

Tiong Seng Contractors (Pte) Ltd

Landscape Consultant

Sitetectonix Pte. Ltd.

Others

Lighting Planners Associates (S)
Pte. Ltd.

Key Features

- Estimated energy savings: 593,784 kWh/yr; estimated water savings: 98,982 m³/yr; RETV: 18.97 W/m².
- Energy efficient LED lighting at corridors, common lobbies and staircase.
- Motion sensors with built-in photo sensors at toilets and staircase.
- Green roof and sky terrace gardens at apartments and Communal Block A.
- Low VOC paint for internal areas for apartments and Communal Block A.
- Building Management System (BMS) to monitor energy and water usage.
- Good buildability score with more than 5 points above the national average.
- Provision of rain garden and eco-pond.



PLATINUM

BCA
**GREEN MARK FOR
BUILDINGS AWARD**

Lucky Towers

New Residential Buildings

Client / Developer

City Developments Limited

Project Manager

Langdon & Seah Project
Management Pte Ltd

Design Architect

NBBJ (New York)

Project Architect

Axis Architects Planners Pte Ltd

M&E Engineer

Beca Carter Hollings & Ferner
(S.E.Asia) Pte Ltd

Structural Engineer

Parsons Brinckerhoff Pte Ltd

Quantity Surveyor

Langdon & Seah
Singapore Pte Ltd

Lighting Consultant

Lincolne Scott Ng Pte Ltd

Landscape Consultant

ICN Design International Pte Ltd

Acoustic Consultant

Aurecon Singapore (Pte.) Ltd.

Key Features

- Estimated energy savings: 60,000 kWh/yr; estimated water savings: 20,995 m³/yr; RETV: 18.88 W/m².
- High performance double glazed low-e glass façade to minimise heat gain and to provide good daylighting.
- Use of energy efficient refrigerators in all units.
- Provision of regenerative lifts and charging points for electric vehicles.
- Use of precast toilets.
- Extensive landscape and efficient irrigation system with rainwater harvesting.
- Pneumatic waste collection system with additional chute for recyclable refuse.
- Green education corner.



**CITY
DEVELOPMENTS
LIMITED**

Singapore University of Technology and Design East Coast Campus Phase 1 Hostels & Faculty Apartments

New Residential Buildings

Client / Developer

Singapore University of
Technology and Design

Project Manager

PM Link Pte Ltd

Architect

LOOK Architects Pte Ltd
Surbana International
Consultants Pte. Ltd.

M&E Engineer

CPG Consultants Pte Ltd

Structural Engineer

Parsons Brinckerhoff Pte Ltd

Quantity Surveyor

CPG Consultants Pte Ltd

Landscape Consultant

Surbana International
Consultants Pte. Ltd.

Façade Consultant

Arup Singapore Pte Ltd

Acoustic Consultant

Arup Singapore Pte Ltd

ESD Consultant

Surbana International
Consultants Pte. Ltd.

Key Features

- Estimated energy savings: 834,632 kWh/yr; estimated water savings: 20,412 m³/yr; RETV: 16.96 W/m².
- Siphonic rainwater discharge system.
- Non-chemical termite treatment system.
- Automatic drip irrigation system with rain sensors.
- Natural ventilation for dwelling units.
- Use of energy efficient T5 lighting in dwelling units and LED lighting at common corridor.
- Use of energy efficient water heater and heat pump.
- Use of energy efficient air-conditioning system.



BCA GREEN MARK FOR BUILDINGS AWARD

South Beach (Residential)

New Residential Buildings

Client / Developer

City Developments Limited
IOI Corporation Berhad

Architects

Aedas Pte Ltd

M&E Engineer

Parsons Brinckerhoff Pte Ltd

Structural Engineer

Arup Singapore Pte Ltd

Quantity Surveyor

Langdon & Seah
Singapore Pte Ltd

Main Contractor

Hyundai Engineering &
Construction Co., Ltd

Landscape Consultant

ICN Design International Pte
Ltd

Façade Consultant

Arup Singapore Pte Ltd

Lighting Consultant

Light Cibles Pte Ltd

ESD Consultant

Arup Singapore Pte Ltd

Key Features

- Estimated energy savings: 586,535 kWh/yr; estimated water savings: 1,189 m³/yr; RETV: 11.41 W/m².
- Sustainable canopy design optimising thermal comfort, daylight, wind, at the same time harvesting renewable energy and rainwater.
- Optimised building envelope with the use of glass with good solar coefficient.
- Provision of pneumatic waste collection system.
- Provision of green corner.
- Intelligent car park system and charging points for electric vehicles.
- Siphonic rainwater drainage system.
- High frequency ballast and motion sensors for staircase and toilets.



PLATINUM

BCA
**GREEN MARK FOR
BUILDINGS AWARD**

17 Second Avenue

Landed Houses

Client / Developer

Mr George Lim

Architect

designshop.architects llp

M&E Engineer

HY M&E Consultancy Services Pte. Ltd.

Structural Engineer

MSE Consultants Pte Ltd

Main Contractor

As-Built Pte Ltd

Landscape Consultant

Amozonia Landscape

Key Features

- Good building orientation with provision of double glazing glass façade to minimise heat gain to building.
- Energy efficient air-conditioning and ceiling fans.
- LED lightings for internal and external spaces.
- Rainwater harvesting system and automatic irrigation drip system with rain sensors.
- Photovoltaic technologies with system capacity of 33.60 kWp.
- Home automation system with energy monitoring devices.
- Non-chemical treatment for swimming pool.



PLATINUM

BCA
**GREEN MARK FOR
BUILDINGS AWARD**

Haus@Serangoon Garden

Landed Houses

Clients / Developers

City Developments Limited
Hong Realty (Pte) Limited

Architect

ADDP Architects LLP

M&E Engineer

United Project Consultants Pte Ltd

Structural Engineer

Tham & Wong LLP

Quantity Surveyor

Langdon & Seah Singapore Pte Ltd

Landscape Consultant

Coen Design International Pte Ltd

ESD Consultant

Building System & Diagnostics Pte Ltd

Key Features

- Good building orientation to minimise solar heat gain.
- Energy efficient refrigerator and air-conditioning with heat recovery system.
- Rainwater harvesting system.
- Photovoltaic technologies with total system capacity of 97 kWp.
- Provision of eco-plugs for energy monitoring.
- Use of cool paints, eco-friendly construction materials and products.
- Carbon footprint study for whole development.
- Green education for homeowners.



GOLDPLUS

BCA
**GREEN MARK FOR
BUILDINGS AWARD**

Changi City

New Non-Residential Buildings



Client / Developer

Ascendas Frasers Pte. Ltd.

Project Manager

Ascendas Frasers Pte. Ltd.

Architect

Aedas Pte. Ltd.

M&E Engineer

Beca Carter Hollings & Ferner
(S.E.Asia) Pte Ltd.

Structural Engineers

Retail and Hotel:
DE Consultants (S) Pte. Ltd.
Business Park:
AECOM Singapore Pte Ltd

Quantity Surveyor

KPK Quantity Surveyors
(Singapore) Pte Ltd

Main Contractor

Nakano Singapore Pte. Ltd.

Landscape Consultant

Belt Collins International
(Singapore) Pte. Ltd.

ESD Consultant

Arup Singapore Pte Ltd

Key Features

- Estimated energy savings: 15,050,221 kWh/yr; estimated water savings: 299,582 m³/yr; ETTV: 40.77 W/m².
- Designation control system for lifts in office building.
- AHU installed with UVC emitter to improve indoor air quality.
- Skylight at retail atrium to provide natural daylight.
- Recycling of AHU condensate in office building and hotel.

GOLDPLUS

BCA
**GREEN MARK FOR
BUILDINGS AWARD**

Experimental Power Grid Centre

New Non-Residential Buildings

Client / Developer

Institute of Chemical and
Engineering Studies

Project Manager

Meiden Singapore Pte Ltd

Architect

CWM Consulting Engineers

M&E Engineer

Leong CW & Associates

Main Contractor

Meiden Singapore Pte Ltd

Landscape Consultant

CWM Consulting Engineers

Energy Modelling Consultant

Building System and Diagnostics
Pte Ltd

Key Features

- Estimated energy savings: 317,185 kWh/yr; estimated water savings: 464 m³/yr; ETTV: 37.03 W/m².
- Use of passive design resulted in an ETTV of 37.03 W/m².
- High efficiency mechanical ventilation system for test bay integrated with demand control.
- 60 kWp solar photovoltaic panel to generate electricity for building load.
- Use of environmental-friendly R410A refrigerant gas.
- Sustainable material with at least 30% recycled content.
- Efficient water fittings.



GOLDPLUS

BCA
**GREEN MARK FOR
BUILDINGS AWARD**

Graduate Hall 2 **Nanyang Technological University**

New Non-Residential Buildings

Client / Developer

Nanyang Technological
University

Architect

CPG Consultants Pte Ltd

M&E Engineer

CPG Consultants Pte Ltd

Structural Engineer

CPG Consultants Pte Ltd

Quantity Surveyor

CPG Consultants Pte Ltd

Main Contractor

Welltech Construction Pte Ltd

Landscape Consultant

Lekker Design Pte Ltd

ESD Consultant

Parsons Brinckerhoff Pte Ltd

Key Features

- Estimated energy savings: 558,523 kWh/yr; estimated water savings: 21,056 m³/yr; ETTV: 40.78 W/m².
- Heat pump to heat water.
- Use of energy efficient air-conditioning system.
- Use of green label materials for internal partition wall.
- Provision of extensive greenery.





BCA
**GREEN MARK FOR
BUILDINGS AWARD**

Infinite Studios
New Non-Residential Buildings

Client / Developer
Ascendas-Citramas Pte Ltd

Project Manager
Ascendas Services Pte Ltd

Architect
DP Architects Pte Ltd

M&E Engineer
J Roger Preston (Singapore)
Pte Ltd

Structural Engineer
T.Y.Lin International Pte Ltd

Quantity Surveyor
KPK Quantity Surveyors
(Singapore) Pte Ltd

Main Contractor
Incorporated Builders Pte Ltd

Landscape Consultant
Mace Studio Pte Ltd

ESD Consultant
WSP Ng Pte Ltd

Key Features

- Estimated energy savings: 1,611,214 kWh/yr; estimated water savings: 9,160 m³/yr; ETTV: 29.0 W/m².
- Energy efficient air-conditioning system, with an efficiency of 0.63kW/ton.
- Ductless fans linked to CO sensors for car park.
- Use of WELS-certified water fittings.
- Use of automatic condenser tube cleaning system for chiller plants.
- Thermal diffusers for all office areas.
- Green Transformer certified.



Khaya & Angsana Residential Colleges

New Non-Residential Buildings



Client / Developer

National University of Singapore

Project Manager

Office of University Town
Development, National
University of Singapore

Architect

DP Architects Pte Ltd

M&E Engineer

Beca Carter Hollings & Ferner
(S.E.Asia) Pte Ltd

Structural Engineer

Beca Carter Hollings & Ferner
(S.E.Asia) Pte Ltd

Quantity Surveyor

Rider Levett Bucknall LLP

Landscape Consultant

Sitetectonix Pte Ltd

Main Contractor

Guan Ho Construction Co. Pte.
Ltd.

Lighting Consultant

Bo Steiber Lighting Design

AV & Acoustics Consultant

Acviron Gatland (Asia Pacific) Ltd

Signage Consultant

Square Peg Design Asia Pte Ltd

ESD Consultant

Arup Singapore Pte Ltd

Key Features

- Estimated energy savings: 1,619,566 kWh/yr; estimated water savings: 12,447 m³/yr; ETTV: 41.6 W/m².
- Provision of T5/T8 lighting, achieving a 31% improvement in lighting power density.
- Mixed mode ventilation for dining hall and Multi-Purpose Halls (MPHs).
- Daylighting for dining hall, MPHs and LEARN blocks.
- Use of NEWater for landscape irrigation at basement, first storey and green roof.
- High accessibility to public transport, including the provision of a bus stop and bicycle parking lots.
- Installation of CO₂ sensors for AHUs as well as the seminar/ theme rooms' FCUs.

GOLDPLUS

BCA
**GREEN MARK FOR
BUILDINGS AWARD**

Pasir Ris Sports and Recreation Centre

New Non-Residential Buildings

Client / Developer

Singapore Sports Council

Project Manager

CPG Consultants Pte Ltd

Architect

CPG Consultants Pte Ltd

M&E Engineer

CPG Consultants Pte Ltd

Structural Engineer

CPG Consultants Pte Ltd

Quantity Surveyor

CPG Consultants Pte Ltd

Main Contractor

Quek Hong Seng Construction Pte Ltd

Acoustic Consultant

CCW Pte Ltd

ESD Consultant

CPG Consultants Pte Ltd

Key Features

- Estimated energy savings: 711,440 kWh/yr; estimated water savings: 27,948 m³/yr; ETTV: 28.84 W/m².
- Use of energy efficient T5 and LED lightings for lobby and common areas.
- Photovoltaic panels with system capacity of 170 kWp are installed to harness clean and renewable energy.
- Provision of water efficient sanitary wares and fittings.
- Collection of rainwater for landscape irrigation and the use of water efficient automatic drip irrigation system.
- Extensive landscape and greenery for the development.



BCA
**GREEN MARK FOR
BUILDINGS AWARD**

GOLDPLUS

Resorts World Sentosa – Universal Studios Singapore

New Non-Residential Buildings (Special)

Client / Developer

Resorts World at Sentosa Pte Ltd

Quantity Surveyor

DLS / KPK IR Pte Ltd

Project Manager

DP Consultants Pte Ltd

Landscape Consultant

ICN Design International

Architect

DP Architects Pte Ltd

Main Contractor

China Jingye Engineering
Corporation Limited

M&E Engineers

Beca Carter Hollings & Ferner
(S.E.Asia) Pte Ltd

Lighting Consultant

Light Cibles

Meinhardt (Singapore) Pte Ltd

ESD Consultant

G-Energy Global Pte Ltd

Structural Engineer

AECOM Singapore Pte Ltd

Key Features

- Estimated energy savings: 5,044,623 kWh/yr; estimated water savings: 17,622 m³/yr.
- 500 kWp solar photovoltaic panels.
- Conversion of 300 trees to furniture.
- Transplantation and preservation of 200 trees.
- Pneumatic waste collection system.
- Collection of surface runoff into the Lagoon at Universal Studios Singapore.





BCA
GREEN MARK FOR BUILDINGS AWARD

Singapore Sports Hub
New Non-Residential Buildings



Client / Developer
SportsHub Pte Ltd

Architect
DP Architects Pte Ltd

M&E Engineer
Squire Mech Pte Ltd

Structural Engineer
Arup Singapore Pte Ltd

Landscape Consultant
AECOM Singapore Pte Ltd

Main Contractor
Dragages Singapore Pte Ltd

ESD Consultant
Arup Singapore Pte Ltd

Key Features

- Estimated energy savings: 15,374,232 kWh/yr; estimated water savings: 1,427,898 m³/yr; ETTV: 33.96 W/m².
- Extensive shading from giant louvers, overhangs, and external screens for further reduction in solar heat gain.
- Skylight at retail atrium and office to provide natural daylight.
- Natural ventilation in concourse and Big Ass Fans in aquatic centre.
- Hot water pre-heated by chillers.
- Big scale photovoltaic systems at 500 kWp.



BCA
GREEN MARK FOR BUILDINGS AWARD

The National Art Gallery - Singapore
New Non-Residential Buildings



Client / Developer
National Heritage Board

Project Manager
CPG Consultants Pte Ltd

Design Architect
Studio Milou Singapore Pte Ltd

Architect
CPG Consultants Pte Ltd

M&E Engineer
CPG Consultants Pte Ltd

Structural Engineer
CPG Consultants Pte Ltd

Quantity Surveyor
CPG Consultants Pte Ltd

Special Lighting Consultant
Lighting Planners Associates (S) Pte Ltd

Main Contractor
Takenaka Singapore Piling Joint Venture

ESD Consultant
CPGreen - CPG Consultants Pte Ltd

Key Features

- Estimated energy savings: 6,340,485 kWh/yr; estimated water savings: 11,600 m³/yr; ETTV: 41.58 W/m².
- Use of energy efficient lighting.
- 53.82 kWp solar photovoltaic system.
- Use of non-potable water for irrigation.
- Use of products with SGLS and recycled products.
- Landscape rooftop greenery and vertical greenery system.



BCA
GREEN MARK FOR BUILDINGS AWARD

Homes @ Hong San
Existing Non-Residential Buildings



Building Owner
Ministry of Community
Development, Youth and Sports

Facility Management
CPG Facilities Management
Pte Ltd

ESD Consultant
Kaer Pte Ltd

Key Features

- Estimated energy savings: 232,187 kWh/yr; estimated water savings: 4,026 m³/yr.
- Energy efficient air-conditioning system.
- Heat pump to heat water.
- Use of LED lights for whole building.
- Use of photovoltaic system.
- Use of WELS-certified fittings and rainwater harvesting system.

BCA
**GREEN MARK FOR
BUILDINGS AWARD**

GOLDPLUS

InterContinental Singapore

Existing Non-Residential Buildings

Building Owner

BCH Hotel Investment Pte Ltd

Facility Management

InterContinental Singapore

ESCO

G-Energy Global Pte Ltd

ESD Consultant

G-Energy Global Pte Ltd

Key Features

- Estimated energy savings: 2,416,187 kWh/yr; estimated water savings: 1,392 m³/yr.
- Chiller plant system efficiency of 0.61 kW/ton.
- Permanent measuring instruments for monitoring of water-cooled chilled water plant efficiency and verification of chilled water plant instrumentation with heat balancing.
- Use of energy efficient T5 HF fluorescent tubes for back of house and LED lighting for staircases.
- Heat pump to produce hot water for guestrooms and kitchen.
- Use of wet system food waste decomposer.





BCA
**GREEN MARK FOR
BUILDINGS AWARD**

International Plaza
Existing Non-Residential Buildings

Building Owner

The Management Corporation
Strata Title Plan No. 461

Facility Management

Chesterton Suntec International
Pte Ltd

ESCO

UGL Services Premas
Operations Ltd

ESD Consultant

UGL Services Premas
Operations Ltd

Key Features

- Estimated energy savings: 2,236,961 kWh/yr; estimated water savings: 8,603 m³/yr.
- High performance chiller systems using environmentally friendly refrigerant, with an efficiency of less than 0.68 kW/ton and Variable Speed Drives (VSDs) installed for chilled water pumps, condenser pumps and cooling towers.
- Provision of refrigerant leak detection systems, automatic condenser tube cleaning systems and CO monitoring system.
- Permanent instrumentation equipment with highly accurate sensors for measurement and verification of chiller plant system efficiency, with incorporation of heat balance.
- Green corner within the building to serve as a bridge for communication and sharing of information with building occupants.
- Energy efficient lighting systems such as compact fluorescent lamps (PLCs), ceramic discharge metal halides (CDMs) and LEDs are widely used within the building premises.





BCA
GREEN MARK FOR BUILDINGS AWARD

Tampines Concourse
Existing Non-Residential Buildings

Building Owner
City Developments Limited

Facility Management
CBM Pte Ltd

ESCO
CBM Solutions Pte Ltd

ESD Consultant
CBM Solutions Pte Ltd

Key Features

- Estimated energy savings: 623,447 kWh/yr; estimated water savings: 274 m³/yr.
- Pre-cool mechanical ventilation.
- Natural daylight system.
- Green roof system and green screening.
- Non-chemical anti-termite treatment.
- Carbon footprint and use of green concrete.
- Nano-coating on waterless urinals.





The Concourse Building

Existing Non-Residential Buildings

Building Owner
Hong Fok Land Ltd

ESCO
Johnson Controls (S) Pte Ltd

ESD Consultant
Johnson Controls (S) Pte Ltd

Key Features

- Estimated energy savings: 3,652,000 kWh/yr from chiller plant retrofit and lighting replacement; estimated water savings: 8,000 m³/yr.
- Retrofitted to a highly efficient chiller plant with 0.64 kW/ton system efficiency and energy performance guarantee.
- Permanent measurement and verification instrumentation provided for chiller plant and heat balance in the Building Management System.
- Extensive use of energy efficient T5 and LED lighting.
- Use of motion sensors for lighting control at staircases and toilets.





BCA
**GREEN MARK FOR
BUILDINGS AWARD**

TripleOne Somerset
Existing Non-Residential Buildings



Building Owner
AREIF (Singapore I) Pte Ltd

Facility Management
CB Richard Ellis (Pte) Ltd

ESCO
Comfort Management Pte Ltd

ESD Consultant
Comfort Management Pte Ltd

Key Features

- Estimated energy savings: 1,987,033 kWh/yr; estimated water savings: 16,169 m³/yr.
- Improved plant efficiency from 0.86 kW/ton to 0.71 kW/ton.
- Energy monitoring system to monitor whole building's energy usage and equipment usage such as chiller plant system and AHU, etc.
- LED lighting at B1 and B2 car park.
- Electronic air filters installed at AHU to improve indoor air quality.
- Greenery and roof garden at levels 2, 6 and 17.



BCA
GREEN MARK FOR BUILDINGS AWARD

University Hall, National University of Singapore
Existing Non-Residential Buildings



Building Owner
National University of Singapore

Facility Management
Office of Estate and Development, National University of Singapore

ESCO
G-Energy Global Pte Ltd

ESD Consultant
G-Energy Global Pte Ltd

- Key Features**
- Estimated energy savings: 823,473 kWh/yr; estimated water savings: 20,082 m³/yr.
 - Chiller plant system efficiency of 0.74 kW/ton.
 - Extensive skylight to reduce light fittings needed.
 - Effective waste management system.
 - Three sky gardens with extensive greenery.
 - Automatic irrigation system with rain sensors.

GOLDPLUS

BCA
**GREEN MARK FOR
BUILDINGS AWARD**

Bliss @ Kovan

New Residential Buildings

Client / Developer

BBR Kovan Pte Ltd

Architect

LOOK Architects Pte Ltd

M&E Engineer

Mott MacDonald Singapore Pte Ltd

Structural Engineer

FONG Consult Pte Ltd

Landscape Consultant

ONG&ONG Pte Ltd

CFD Consultant

Greenbuilders Pte Ltd Venture

ESD Consultant

Mott MacDonald Singapore Pte Ltd

Key Features

- Estimated energy savings: 1,171,041 kWh/yr; estimated water savings: 170,601 m³/yr; RETV: 20.00 W/m².
- Passive architecture design with North-South building orientation.
- Collection of rainwater for landscape irrigation.
- Bioswale is introduced as part of the landscape to aid in the reduction of storm water runoff.
- Urban farming and vertical greenery as part of the lush greenery provision in the development.
- Provision of green corner to reach out to residents on environmental issues.



GOLDPLUS

BCA
**GREEN MARK FOR
BUILDINGS AWARD**

Blossom Residences

New Residential Buildings

Client / Developer

City Developments Limited

Architect

ADDP Architects LLP

M&E Engineer

United Project Consultants Pte Ltd

Structural Engineer

LSW Consulting Engineers

Quantity Surveyor

Langdon & Seah Singapore Pte Ltd

Main Contractor

Dragages Singapore Pte Ltd

Landscape Consultant

ONG&ONG Pte Ltd

Key Features

- Estimated energy savings: 4,202,304 kWh/yr; estimated water savings: 104,461 m³/yr; RETV: 18.75 W/m².
- Pneumatic waste collection system.
- Use of rainwater harvesting for irrigation.
- Automatic water efficient irrigation system with rain sensor.
- Siphonic rainwater discharge system at roof.
- Provision of electric car park lots.



GOLDPLUS

BCA
**GREEN MARK FOR
BUILDINGS AWARD**

Buangkok Vale

New Residential Buildings

Client / Developer

Housing & Development Board

Project Manager

Surbana International consultants Pte .Ltd.

Architect

CESMA International Pte. Ltd.

M&E Engineer

Surbana International consultants Pte. Ltd.

Structural Engineer

Surbana International consultants Pte. Ltd.

Quantity Surveyor

Surbana International consultants Pte. Ltd.

Main Contractor

Chip Eng Seng Contractors (1988) Pte Ltd

Landscape Consultant

CESMA International Pte. Ltd.

Key Features

- Estimated energy savings: 688,525 kWh/yr; kWh/yr; estimated water savings: 85,680 m³/yr; RETV: 18.02 W/m².
- North-South building orientation.
- Provision of recycling bins at every residential block.
- Provision of bicycle rack at every block.
- Use of internal and external clothes dry rack.
- Automatic irrigation system at roof garden.





BCA GREEN MARK FOR BUILDINGS AWARD

Limbang Green New Residential Buildings

Client / Developer

Housing & Development Board

Project Manager

SIPM Consultants Pte. Ltd.

Architect

Surbana International Consultants Pte. Ltd.

M&E Engineer

Surbana International consultants Pte. Ltd.

Structural Engineer

Surbana International consultants Pte. Ltd.

Main Contractor

Right Construction Pte. Ltd.

Landscape Consultant

Surbana International Consultants Pte. Ltd.

Key Features

- Estimated energy savings: 513,080 kWh/yr; estimated water savings: 7,108 m³/yr; RETV: Block 570: 17.89 W/m², Block 571: 18.22 W/m², Block 572: 17.27 W/m², Block 573: 17.38 W/m², Block 574: 17.45 W/m².
- Provision of green roof and roof top garden for at least 25% of the roof areas.
- Use of motion sensors at staircases.
- Use of WELS-certified fittings.
- Use of non-potable water for irrigation for at least 50% of the landscape areas.
- Use of internal and external clothes dry rack.



GOLDPLUS

BCA
**GREEN MARK FOR
BUILDINGS AWARD**

Paterson Collection

New Residential Buildings

Client / Developer

Bukit Sembawang View Pte Ltd

Architect

DP Architects Pte Ltd

M&E Engineer

J Roger Preston (Singapore) Pte Ltd

Structural Engineer

KTP Consultants Pte Ltd

Quantity Surveyor

KPK Quantity Surveyors (Singapore) Pte Ltd

Main Contractor

Keong Hong Construction Pte Ltd

Landscape Consultant

ONG&ONG Pte Ltd

Key Features

- Estimated energy savings: 1,314,557 kWh/yr; estimated water savings: 6,256 m³/yr; RETV: 21.28 W/m².
- Energy efficient air-conditioning with heat recovery system.
- Provision of bioswale infiltration and eco-pond for water treatment.
- Provision of rainwater harvesting for irrigation use.
- Provision of electric car charging point.



GOLDPLUS

BCA
**GREEN MARK FOR
BUILDINGS AWARD**

Punggol Ripples (PW C14)
New Residential Buildings



Client / Developer

Housing & Development Board

Project Manager

ONG&ONG Pte Ltd

Architect

ONG&ONG Pte Ltd

M&E Engineer

Alpha Consulting Engineers Pte Ltd

Structural Engineer

E2000 Pte Ltd

Quantity Surveyor

Langdon & Seah Singapore Pte Ltd

Main Contractor

Sunhuan Construction Pte Ltd

Landscape Consultant

ONG&ONG Pte Ltd

Key Features

- Estimated energy savings: 461,730 kWh/yr; estimated water savings: 23,266 m³/yr; RETV: 20.34 W/m².
- Sun pipes maximise the amount of renewable light energy by reflecting and intensifying the sunlight through a tube to lower levels.
- Collection and purification of rainwater through bio-infiltration trenches.
- Rainwater harvesting and irrigation system with rain sensors.
- Energy efficient LED light fittings at common corridor areas of residential blocks.

GOLDPLUS

BCA
**GREEN MARK FOR
BUILDINGS AWARD**

Punggol Sails

New Residential Buildings

Client / Developer

Housing & Development Board

Project Manager

P&T Consultants Pte Ltd

Architect

P&T Consultants Pte Ltd

M&E Engineer

United Project Consultants Pte Ltd

Structural Engineer

P&T Consultants Pte Ltd

Quantity Surveyor

KKP Quantity Surveyors (Singapore) Pte Ltd

Main Contractor

Ho Lee Construction Pte Ltd

Landscape Consultant

Sitetectonix Pte Ltd

Key Features

- Estimated energy savings: 217,094 kWh/yr; estimated water savings: 21,238 m³/yr; RETV: 18.87 W/m².
- Use of LED lamps.
- Provision of motion sensors for lift lobbies and staircases, etc.
- Provision of motor-roomless lift and re-generative lift.
- Educating homeowners through Green Building Users' Guide.
- Provision of bicycle lots.



GOLDPLUS

BCA
**GREEN MARK FOR
BUILDINGS AWARD**

RiverParc Residence

New Residential Buildings

Client / Developer

Qinjian Realty (Punggol) Pte Ltd

Architect

ADDP Architects LLP

M&E Engineer

KTP International Pte Ltd

Structural Engineer

Engineers Partnership LLP

Quantity Surveyor

Ian Chng Cost Consultants Ptd Ltd

Main Contractor

Qingdao Construction (Singapore) Pte Ltd

Landscape Consultant

Site Concepts International Pte Ltd

Key Features

- Estimated energy savings: 5,573,622 kWh/yr; estimated water savings: 307 m³/yr; RETV: 21.14 W/m².
- Units with windows facing north and south directions.
- Living rooms and bedrooms with cross ventilation.
- Daylighting and natural ventilation in common areas.
- Use of motion sensors for private lift lobbies, staircases and common toilets.
- Use of sun pipe for natural lighting.



Segar Grove

New Residential Buildings

Client / Developer

Housing & Development Board

Architect

Surbana International Consultants Pte. Ltd.

M&E Engineer

Surbana International Consultants Pte. Ltd.

Structural Engineer

Surbana International Consultants Pte. Ltd.

Quantity Surveyor

Surbana International Consultants Pte. Ltd.

Main Contractor

Poh Lian Construction (Pte) Ltd

Landscape Consultant

Surbana International Consultants Pte. Ltd.

Key Features

- Estimated energy savings: 710,432 kWh/yr; estimated water savings: 89,028 m³/yr; RETV: 19.60 W/m².
- Provision of bicycle parks and recycling bins at every residential block.
- Use of internal and external clothes drying rack.
- High green plot ratio.
- Use of green retaining wall.
- Use of bioswales and water percolation tanks to filter and store rainwater.



BCA
**GREEN MARK FOR
BUILDINGS AWARD**

GOLDPLUS

Sky Habitat

New Residential Buildings

Clients / Developers

CapitaLand Residential
Singapore

Mitsubishi Estate Asia Pte. Ltd.

Shimizu Investment (Asia) Pte.
Ltd.

Project Manager

CapitaLand Residential
Singapore

Architect

DCA Architects Pte Ltd

M&E Engineer

Alpha Consulting Engineers
Pte Ltd

Structural Engineer

RSP Architects Planners &
Engineers (Pte) Ltd

Quantity Surveyor

Langdon & Seah Singapore
Pte Ltd

Main Contractor

Shimizu Corporation

Landscape Consultant

Coen Design International Pte
Ltd

Lead Designer

Safdie Architects LLC

ESD Consultant

Squire Mech Pte Ltd

Key Features

- Estimated energy savings: 7,465,166 kWh/yr; estimated water savings: 22,535 m³/yr; RETV: 20.93 W/m².
- Pneumatic waste disposal system.
- Sun pipes for natural lighting.
- Ductless mechanical ventilation system for basement car parks with CO sensors.
- Sustainable materials used for internal partition walls, wardrobes and kitchen cabinets.
- Siphonic rainwater discharge system for roof and pressurised rainwater discharge system for balconies, terraces, air-conditioner ledges.



BCA GREEN MARK FOR BUILDINGS AWARD

The Meyerise

New Residential Buildings

Client / Developer

Hong Leong Holdings Ltd

Project Manager

Hong Leong Holdings Ltd

Architect

P&T Consultants Pte Ltd

M&E Engineer

Meinhardt (Singapore) Pte Ltd

Structural Engineer

Engineers Partnership LLP

Quantity Surveyor

Langdon & Seah Singapore
Pte Ltd

Main Contractor

Hup Soon Construction Co.
(Pte) Ltd

Landscape Consultant

Belt Collins International
(Singapore) Pte Ltd

ESD Consultant

Building System & Diagnostics
Pte Ltd

Key Features

- Estimated energy savings: 1,910,598 kWh/yr; estimated water savings: 41,079 m³/yr; RETV: 18.77 W/m².
- Excellent building insulation to achieve RETV of 18.77 W/m².
- Use of energy efficient air-conditioning system.
- Use of drip irrigation system.
- Provision of lush greenery for landscape, with green plot ratio of 7.4.
- Self-cleaning paints for at least 50% of all façade areas.



GOLDPLUS

BCA
**GREEN MARK FOR
BUILDINGS AWARD**

The Palette

New Residential Buildings

Clients / Developers

City Developments Limited
Hong Realty (Pte) Limited
Hong Leong Holdings Limited

Project Manager

CDL Management Services Pte Ltd

Architect

Architects 61 Pte Ltd

M&E Engineer

Squire Mech Pte Ltd

Structural Engineer

Parsons Brinckerhoff Pte Ltd

Quantity Surveyor

Langdon & Seah Singapore Pte Ltd

Landscape Consultant

Coen Design International Pte Ltd

ESD Consultant

Building System and Diagnostics Pte Ltd

Key Features

- Estimated energy savings: 3,436,838 kWh/yr; estimated water savings: 70,935 m³/yr; RETV: 19.09 W/m².
- Use of energy efficient air-conditioning system under Singapore Energy Labelling Scheme.
- Use of energy efficient lighting and motion sensors and sun pipes.
- Use of pneumatic waste collection system with dual chute for recycling waste.
- Provision of gas water heater.
- Extensive provision of greenery.
- Use of precast toilets.



GOLDPLUS

BCA
**GREEN MARK FOR
BUILDINGS AWARD**

The Rainforest

New Residential Buildings

Clients / Developers

City Developments Limited

TID Pte Ltd

Architect

ADDP Architects LLP

M&E Engineer

Squire Mech Pte Ltd

Structural Engineer

Parsons Brinckerhoff Pte Ltd

Quantity Surveyor

Rider Levett Bucknall LLP

Main Contractor

Nakano Singapore (Pte) Ltd

Landscape Consultant

ONG&ONG Pte Ltd

Key Features

- Estimated energy savings: 768,969 kWh/yr; estimated water savings: 97,669 m³/yr; RETV: 21.14 W/m².
- Use of energy efficient air-conditioning system in all units.
- Provision of energy efficient LED light fittings at lift lobbies and staircases.
- Provision of gas heaters within all dwelling units.
- Collection of rainwater for irrigation and automatic drip irrigation system for landscape.
- Use of pneumatic waste collection system to ensure good environmental quality and low VOC paint for all areas.





BCA GREEN MARK FOR BUILDINGS AWARD

Tiong Bahru View

New Residential Buildings

Client / Developer

Housing & Development Board

Project Manager

SIPM Consultants Pte. Ltd.

Architect

Surbana International Consultants Pte. Ltd.

M&E Engineer

Surbana International Consultants Pte. Ltd.

Structural Engineer

Surbana International Consultants Pte. Ltd.

Quantity Surveyor

Surbana International Consultants Pte. Ltd.

Main Contractor

Fondal Global Engineering Pte Ltd

Landscape Consultant

Surbana International Consultants Pte. Ltd.

Key Features

- Estimated energy savings: 712,904 kWh/yr; estimated water savings: 61,810 m³/yr; RETV: Block 9A: 18.77 W/m², Block 9B: 18.72 W/m², Block 10A: 18.11 W/m², Block 10B: 16.91 W/m².
- Good passive design with North-South building orientation.
- Extensive provision of greenery.
- Use of environmentally-friendly materials such as low VOC paints and coating, composite timber strips comprising recycled hard wood fibre dust etc.
- Provision of bicycle racks and recycling bins at every residential block.



GOLDPLUS

BCA
**GREEN MARK FOR
BUILDINGS AWARD**

UP@Robertson Quay

New Residential Buildings

Client / Developer

City Developments Limited

Architect

Axis Architects Planners Pte Ltd

M&E Engineer

Parson Brinckerhoff Pte Ltd

Structural Engineer

KTP Consultants Pte Ltd

Quantity Surveyor

Langdon & Seah Singapore Pte Ltd

Landscape Consultant

Tinderbox Landscape Studio Pte Ltd

Lighting Consultant

Light Cibles Pte Ltd

ESD Consultant

Arup Singapore Pte Ltd

Key Features

- Estimated energy savings: 156,652 kWh/yr; estimated water savings: 7,934 m³/yr; RETV: 17.51 W/m².
- Rainwater harvesting tanks and irrigation fitted with rain sensors.
- Use of energy efficient air-conditioning system.
- Provision of pneumatic waste collection system.
- Use of recycled building materials.
- Provision of sheltered bicycle parking lots.



GOLDPLUS

BCA
**GREEN MARK FOR
BUILDINGS AWARD**

Waterway Brooks

New Residential Buildings



Client / Developer

Housing & Development Board

Architect

ADDP Architects LLP

M&E Engineer

United Project Consultants Pte Ltd

Structural Engineer

KTP Consultants Pte Ltd

Quantity Surveyor

Langdon & Seah Singapore Pte Ltd

Main Contractor

Sunhuan Construction Pte Ltd

Landscape Consultant

Martin Lee Designs

Key Features

- Estimated energy savings: 3,913,310 kWh/yr; estimated water savings: 346 m³/yr; RETV: 19.67 W/m².
- Centralised refuse chutes for recyclable waste.
- Rainwater collection system for washing common corridor.
- Use of energy efficient LED lighting and motion sensor.
- Re-generative features for lifts.
- Enhanced landscaping with ABC water design features such as bioswale for storm water management.

BCA
**GREEN MARK FOR
BUILDINGS AWARD**

**Block 178, 179, 180 (MSCP), 181, 182, 183, 184,
185, 186, 187, 188, 189, 190, 191, 192, 193
Edgefield Plains / Punggol Central**
Existing Residential Buildings

Developer

Housing & Development Board

MCST/Town Council

Pasir Ris-Punggol Town Council

Managing Agent

EM Services Pte Ltd

Key Features

- Estimated energy savings: 8,928 kWh/yr; estimated water savings: 183 m³/yr.
- Use of T5 and energy efficient lightings for all common areas.
- Provision of community garden and extensive greenery.
- Use of photovoltaic system at the rooftop of selected blocks.
- Three green activities held annually to increase green awareness among residents.



BCA
**GREEN MARK FOR
BUILDINGS AWARD**

**Block 637A, 637B, 637C, 637D, 638 (MSCP), 638A,
638B, 638C, 640A, 640B, 641A, 641B, 641C, 642
(MSCP), 642A, 642B, 642C, 642D Punggol Drive**

Existing Residential Buildings

Developer

Housing & Development Board

MCST/Town Council

Pasir Ris-Punggol Town Council

Managing Agent

EM Services Pte Ltd

Key Features

- Estimated energy savings: 7,899 kWh/yr; estimated water savings: 122 m³/yr.
- Use of T5 and energy efficient lightings for all common areas.
- Provision of community garden and extensive greenery.
- Use of photovoltaic system at the rooftop of selected blocks.
- Three green activities held annually to increase green awareness among residents.



GOLD

BCA
**GREEN MARK FOR
BUILDINGS AWARD**

PROJECT NAME	CATEGORY	CLIENT / DEVELOPER / BUILDING OWNER
A'Posh BizHub	Non-Residential New Buildings	OKH Management Pte Ltd
Cassia @ Penjuru	Non-Residential New Buildings	Marine Housing Services Pte Ltd (A joint venture between Keppel Offshore & Marine Ltd and Jurong Shipyard Pte Ltd)
Centre for Translational Medicine - National University of Singapore	Non-Residential New Buildings	National University of Singapore
Development of Camp Facilities at Pasir Ris Camp for Commando Training Institute	Non-Residential New Buildings	Ministry of Defence / Defence Science and Technology Agency
Development of Camp Facilities at Seletar Camp (Phase 1)	Non-Residential New Buildings	Defence Science and Technology Agency
Disco Hi-Tec (Singapore) One Stop Solution Center Project	Non-Residential New Buildings	Disco Hi-Tec (Singapore) Pte Ltd
Foodaxis @ Senoko	Non-Residential New Buildings	HSBC Institutional Trust Services (S) Ltd as trustee of AREIT
Gali Batu Depot	Non-Residential New Buildings	Land Transport Authority
Marina Bay Sands	Non-Residential New Buildings	Marina Bay Sands Pte Ltd
Nucleos	Non-Residential New Buildings	Ascendas Venture Pte Ltd

GOLD

BCA
**GREEN MARK FOR
BUILDINGS AWARD**

PROJECT NAME	CATEGORY	CLIENT / DEVELOPER / BUILDING OWNER
Paya Lebar Methodist Girls' School (Primary) Priscilla Block & Lydia Block	Non-Residential New Buildings	Paya Lebar Methodist Girls' School (Primary)
Punggol 21 Community Club	Non-Residential New Buildings	People's Association
Registry of Marriages and Registry of Muslim Marriages	Non-Residential New Buildings	Ministry of Community Development, Youth and Sports
Riverside Primary School	Non-Residential New Buildings	Ministry of Education / Riverside Primary School
Rivervale Plaza	Non-Residential New Buildings	Housing & Development Board
Roche B10 Building Project	Non-Residential New Buildings	Roche Singapore Technical Operations Pte Ltd
SCAL Dormitory (Mandai)	Non-Residential New Buildings	SCAL Resources Pte Ltd / Vobis Enterprise Pte Ltd
Singapore International Cruise Terminal	Non-Residential New Buildings	Singapore Tourism Board
Tuas West Extension MRT Depot	Non-Residential New Buildings	Land Transport Authority
Upper Air Observatory	Non-Residential New Buildings	National Environment Agency
Woodlands Galaxy CC	Non-Residential New Buildings	People's Association
158 Cecil Street	Non-Residential Existing Buildings	East Coast (Cecil) Investment Pte Ltd

GOLD

BCA
**GREEN MARK FOR
BUILDINGS AWARD**

PROJECT NAME	CATEGORY	CLIENT / DEVELOPER / BUILDING OWNER
Alexandra Technopark A & B	Non-Residential Existing Buildings	Orrick Investment Pte Ltd
Capital Square	Non-Residential Existing Buildings	Capital Square Pte Ltd
Carrier Singapore	Non-Residential Existing Buildings	Carrier Singapore (Pte) Ltd
Carrier Transicold	Non-Residential Existing Buildings	Carrier Transicold Pte Ltd
CBP 3	Non-Residential Existing Buildings	CBP 3 Pte Ltd
Conrad Centennial Singapore	Non-Residential Existing Buildings	Marina Properties Private Limited
Copthorne King's Hotel	Non-Residential Existing Buildings	Republic Hotels & Resort Ltd
Esplanade - Theatres on the Bay	Non-Residential Existing Buildings	Ministry of Information, Communication and The Arts
Fajar Shopping Centre	Non-Residential Existing Buildings	Housing & Development Board
Health Sciences Authority	Non-Residential Existing Buildings	Health Sciences Authority
Lot One Shoppers' Mall	Non-Residential Existing Buildings	CapitaMall Trust
Marina at Keppel Bay	Non-Residential Existing Buildings	Keppel Bay Pte Ltd
Nanyang Academy of Fine Arts Campus 1	Non-Residential Existing Buildings	Nanyang Academy of Fine Arts

GOLD

BCA
**GREEN MARK FOR
BUILDINGS AWARD**

PROJECT NAME	CATEGORY	CLIENT / DEVELOPER / BUILDING OWNER
OCBC Centre East	Non-Residential Existing Buildings	OCBC Square Private Limited
Orchard Hotel Singapore	Non-Residential Existing Buildings	Millennium & Copthorne International Limited
Pasir Panjang Terminal Building	Non-Residential Existing Buildings	PSA Corporation Limited
Pasir Ris West Plaza	Non-Residential Existing Buildings	Housing & Development Board
Philips Electronics Singapore (Toa Payoh Complex) TP1 and TP3 Buildings	Non-Residential Existing Buildings	Philips Electronics Singapore Pte Ltd
Plaza Singapura	Non-Residential Existing Buildings	CapitaMall Trust
PSA Brani Terminal Building	Non-Residential Existing Buildings	PSA Corporation Ltd
Raffles Building	Non-Residential Existing Buildings	National Parks Board
School of Humanities and Social Sciences, Nanyang Technological University	Non-Residential Existing Buildings	Nanyang Technological University
Sentosa Cove Arrival Plaza	Non-Residential Existing Buildings	Sentosa Development Corporation
Shaw Centre	Non-Residential Existing Buildings	The Management Corporation Strata Title Plan No. 617

GOLD

BCA
**GREEN MARK FOR
BUILDINGS AWARD**

PROJECT NAME	CATEGORY	CLIENT / DEVELOPER / BUILDING OWNER
Shaw House	Non-Residential Existing Buildings	Shaw House Pte Ltd
Starhub Green	Non-Residential Existing Buildings	UbiTech Hub Pte Ltd
The Ritz-Carlton Millenia Singapore	Non-Residential Existing Buildings	Marina Properties Private Limited
Vista Point Shopping Centre	Non-Residential Existing Buildings	Housing & Development Board
Wilkie Edge	Non-Residential Existing Buildings	CapitaCommercial Trust
Eight Riversuites	Residential New Buildings	UE Development (Bendemeer) Pte Ltd
Esparina Residences	Residential New Buildings	FCL Compassvale Pte Ltd (A joint venture between Frasers Centrepont Limited and Lum Chang Building Contractors Pte Ltd)
Foresque Residences	Residential New Buildings	Wincheer Investment Pte Ltd
Gilstead 68	Residential New Buildings	Hong Realty (Private) Limited
Lakefront Residences	Residential New Buildings	Keppel Land (Mayfair) Pte Ltd
Nathan Suites	Residential New Buildings	TID Pte Ltd
Newton Imperial	Residential New Buildings	Great Newton Properties Pte Ltd

GOLD

BCA
**GREEN MARK FOR
BUILDINGS AWARD**

PROJECT NAME	CATEGORY	CLIENT / DEVELOPER / BUILDING OWNER
Parvis at Holland Hill	Residential New Buildings	Calne Pte Ltd (A joint venture between Ho Bee Investment Ltd and MCL Land Limited)
Punggol Crest	Residential New Buildings	Housing & Development Board
Punggol Emerald	Residential New Buildings	Housing & Development Board
Punggol Residences	Residential New Buildings	Housing & Development Board
Punggol Spectra - Punggol East Contract 30	Residential New Buildings	Housing & Development Board
Punggol Spring	Residential New Buildings	Housing & Development Board
Punggol Waves	Residential New Buildings	Housing & Development Board
Segar Meadows	Residential New Buildings	Housing & Development Board
Senja Parc View	Residential New Buildings	Housing & Development Board
Skyline Residences	Residential New Buildings	Bukit Sembawang View Pte Ltd
The Scala	Residential New Buildings	Circle Line Pte Ltd
The Terrasse	Residential New Buildings	MCL LAND (Serangoon) Pte Ltd
Waterfront Gold	Residential New Buildings	FCL Peak Pte Ltd

CERTIFIED

BCA
**GREEN MARK FOR
BUILDINGS AWARD**

PROJECT NAME	CATEGORY	CLIENT / DEVELOPER / BUILDING OWNER
50 North Canal Road	Non-Residential New Buildings	Kim Eng Properties Pte Ltd
Keppel Offshore and Marine Technology Centre	Non-Residential New Buildings	Keppel FELS Limited
15 Woodlands Loop	Non-Residential Existing Buildings	JTC Corporation
KB-1	Non-Residential Existing Buildings	Housing & Development Board
Nanyang Executive Centre, Nanyang Technological University	Non-Residential Existing Buildings	Nanyang Technological University
North Bridge Centre	Non-Residential Existing Buildings	The Management Corporation Strata Title Plan No. 3329
School of Physical and Mathematical Sciences, Nanyang Technological University	Non-Residential Existing Buildings	Nanyang Technological University
Riverbay	Residential New Buildings	Green Bay Pte Ltd
Riviera 38	Residential New Buildings	Eastwood Green Pte Ltd
RV Residences	Residential New Buildings	Asiawide Resources Pte Ltd
SkySuites@Anson	Residential New Buildings	Arcadia Development Pte Ltd
The Sorrento	Residential New Buildings	Allgreen Properties Limited
Luxus Hills (Phases 6 & 7)	Landed Houses	Singapore United Estates (Pte) Ltd (A subsidiary of Bukit Sembawang Estates Ltd)

BCA GREEN MARK FOR EXISTING SCHOOLS AWARD

The Award

The BCA Green Mark for Existing Schools was designed to focus on encouraging sustainable practices and management, in terms of the school's education and culture as well as its daily operation and management.

This scheme aims to spread and inculcate the ideas and teachings of environmental sustainability to our younger generation. Through participation in the scheme, staff and students will be exposed to these ideas and take on a more active role in the promotion and delivery of sustainable practices, such as the efficient use of energy and water.

There are five main areas of assessment, namely energy efficiency, water efficiency, sustainable awareness and management, indoor environmental quality and other green features. A higher weightage is given to the educational syllabus and involvement of staff and students in environmental sustainability.

Energy Efficiency

The highest weightage is on energy efficiency, which includes the intensity of energy usage, percentage of air-conditioned areas and implementation of good passive design. Education on energy usage through classroom curriculums and awareness creation through posters, emails and guides is also assessed.

Water Efficiency

For water efficiency, the focus is on the monitoring of water usage as well as the use of efficient water fittings. A water efficiency index, in terms of litres consumed per person per day has also been introduced to benchmark the water usage intensity of schools for comparison purposes.

Sustainable Awareness and Management

This is a unique area of assessment for the new scheme and has the second highest weightage. The involvement of staff and students in environmental programs and efforts is assessed. This is the key differentiator where schools demonstrate their commitment to environmental sustainability through education as well as activities at school and in the community.

Indoor Environmental Quality

Good indoor environmental quality is an essential area that has a significant impact on the overall well being of staff and students. Indoor air quality, indoor and outdoor thermal conditions, lighting level and noise level are assessed.

Other Green Features

This is an area where schools are recognised for the use of innovative features which have positive environmental impacts.



BCA
**GREEN MARK FOR
EXISTING SCHOOLS AWARD**

Raffles Institution (Y5-6 Campus)
Existing Schools



Developer
Ministry of Education

Owner
Raffles Institution

Facility Management
Estate Department

Key Features

- Estimated energy savings: 117,462 kWh/yr; estimated water savings: 599 m³/yr.
- Use of facility booking system for the management and control of utilities.
- Use of energy efficient T5 light, replacing T8 fluorescent light in all classrooms and car park.
- Use of LED light for lift lobby and covered linkways, and provision of motion sensors.
- Water saving measures such as installation of water thimble regulator.
- Centralised air-conditioner control during curriculum hours.
- Recycling stations and bins.
- Recycling horticulture waste for landscaping site.

GOLD

BCA
**GREEN MARK FOR
EXISTING SCHOOLS AWARD**

Paya Lebar Methodist Girls' School (Secondary)

Existing Schools

Developer

Ministry of Education

Owner

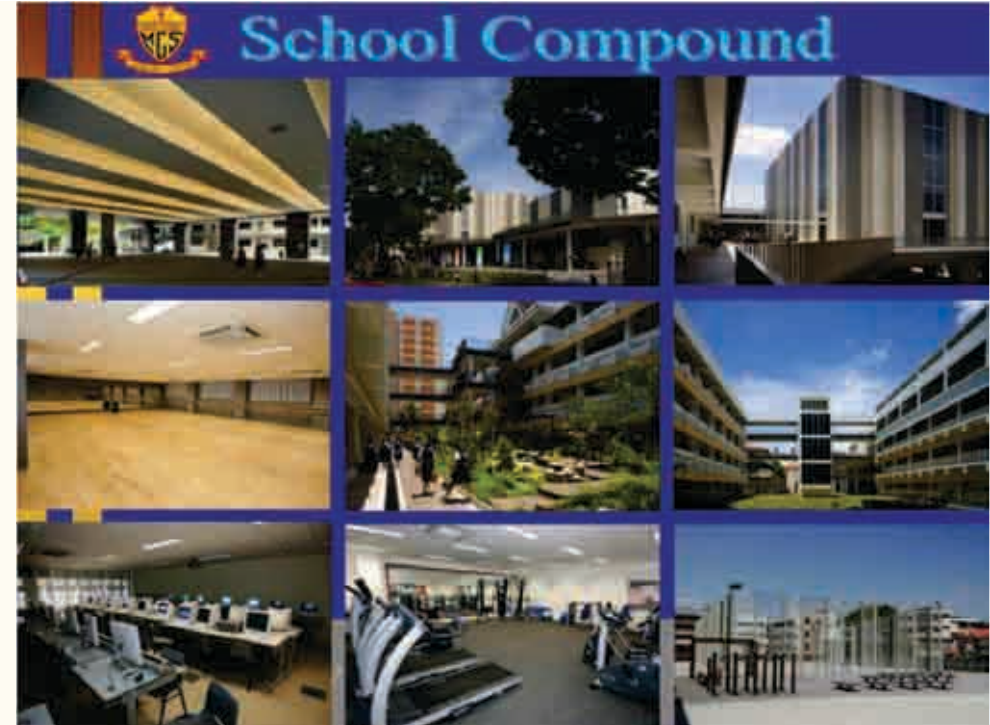
Paya Lebar Methodist
Girls' School (Secondary)

Energy Analysis Specialist

Optiras Pte Ltd

Key Features

- Estimated energy savings: 162,000 kWh/yr; estimated water savings: 540 m³/yr.
- Energy analytics platform.
- Green corner as an education platform.
- Energy Management System (EMS).
- Electrical and water sub-metering systems.
- Use of CO₂ and CO sensors.
- Provision of roof garden.



GOLD

BCA
**GREEN MARK FOR
EXISTING SCHOOLS AWARD**

Rulang Primary School
Existing Schools

Developer
Ministry of Education

Owner
Rulang Primary School

Facility Management
CPG Facilities Management Pte Ltd

Key Features

- Estimated energy savings: 1,219 kWh/yr; estimated water savings: 104 m³/yr.
- Installation of motion sensors in all toilets.
- Recycling of water from toilet basin.
- Recycling garden.
- In-house composting of horticulture waste.
- Sun shading systems along corridor.
- Use of daylighting along staircases.



CERTIFIED

BCA
**GREEN MARK FOR
EXISTING SCHOOLS AWARD**



Innova Junior College

Existing Schools

Developer

Ministry of Education

Owner

Innova Junior College

Facility Management

SMM Pte Ltd

Key Features

- Estimated energy savings: 685,624 kWh/yr.
- Building automation system.
- Installation of motion sensors in toilets.
- Naturally ventilated classrooms.

BCA
**GREEN MARK FOR
EXISTING SCHOOLS AWARD**

Stamford Primary School
Existing Schools



Developer
Ministry of Education

Owner
Stamford Primary School

Facility Management
CPG Facilities Management Pte Ltd

Key Features

- Estimated energy savings: 395,735 kWh/yr; estimated water savings: 133 m³/yr.
- No west facing window openings.
- Water from rainwater catchment is stored in 12 storage tanks and used for the flushing and irrigation system.
- Recycling of waste pipe into planter box.
- Awarded the Water Efficient Building certificate.
- In-house composting of horticulture waste.

CERTIFIED

BCA
**GREEN MARK FOR
EXISTING SCHOOLS AWARD**

Tampines North Primary School

Existing Schools

Developer

Ministry of Education

Owner

Tampines North Primary School

Facility Management

SMM Pte Ltd

Key Features

- Naturally ventilated classrooms and hall.
- Installation of motion sensors in toilets.
- School-wide Environmental Awareness Program.



BCA GREEN MARK FOR BEYOND BUILDINGS AWARD

The Award

The BCA Green Mark for Beyond Buildings Award includes the following categories:

- BCA-NParks Green Mark for Existing Parks
- BCA-NParks Green Mark for New Parks
- BCA Green Mark for Infrastructures
- BCA-LTA Green Mark for Rapid Transit Systems (RTS)
- BCA Green Mark for Districts

BCA-NPARKS GREEN MARK FOR NEW PARKS AWARD

The Award

BCA–NParks Green Mark for New Parks is a joint initiative by BCA and the National Parks Board (NParks). It aims to inspire and promote sustainable park design as well as to identify best practices in park design, construction, management and maintenance planning. The scheme is specifically developed for civic landscape areas examining social and economic sustainability with a strong emphasis on environmental sustainability. The assessment framework is also similar to the BCA–NParks Green Mark for Existing Parks scheme.

Under a comprehensive assessment system, parks are evaluated on seven criteria:

- Material resource
- Water efficiency
- Energy efficiency
- Greenery and urban ecology
- Design for ease of maintenance and accessibility
- Parks development and construction management
- Other green initiatives

All new parks, including regional and neighbourhood parks, conservation and nature parks as well as public theme parks, can be assessed under this scheme.

BCA-NPARKS
**GREEN MARK FOR
NEW PARKS AWARD**

River Safari

Client / Developer

Wildlife Reserves Singapore

Project Manager

Wildlife Reserves Singapore

Architect

DP Architects Pte Ltd

M&E Engineer

Beca Carter Hollings & Ferner (S.E.Asia) Pte Ltd

Structural Engineer

Beca Carter Hollings & Ferner (S.E.Asia) Pte Ltd

Quantity Surveyor

Langdon & Seah Singapore Pte Ltd

Main Contractor

Prelim Construction Pte. Ltd

Landscape Consultant

Wildlife Reserves Singapore

Key Features

- Overall environmental sustainability efforts focus on minimising the impact on natural resources and wildlife species.
- River Safari will form a contiguous green corridor along the reservoir edge for the safe passage of animals.
- Storm water management using ABC features such as natural waterways and bio-retention systems.
- Use of greenbag system instead of RC for construction of retaining walls.
- Focus on passive design such as natural ventilation and daylighting to improve energy efficiency.
- Use of energy efficient water-cooled chiller plant, light pipes for animal dens and water efficient fittings.



BCA GREEN MARK FOR WITHIN BUILDINGS AWARD

The Award

The BCA Green Mark for Within Buildings Award includes the following categories:

- BCA Green Mark for Office Interior
- BCA Green Mark for Restaurants (New Award)

BCA GREEN MARK FOR OFFICE INTERIOR AWARD

The Award

The BCA Green Mark for Office Interior is BCA's initiative to promote and recognise environmentally-friendly and sustainable practices of office tenants. It complements BCA Green Mark for Building schemes which assess the building. Offices are evaluated on the following criteria:

- Energy efficiency
- Water efficiency
- Sustainable management and operation
- Indoor environment quality
- Other green features

Under the assessment system, points are awarded for incorporating environment-friendly features beyond normal practices. The assessment identifies designs where specific targets are met; with the total points obtained providing an indication of the environmental-friendliness of the office design. Offices are awarded Platinum, Gold^{Plus}, Gold or Certified rating depending on the points scored.

The assessment process consists of a preliminary meeting with the project team or office management team to brief on the assessment criteria and request for relevant reports and documentary proofs to substantiate the subsequent submissions, prior to an assessment. Offices are required to have a triennial assessment after receiving the BCA Green Mark for Office Interior Award, to ensure that a Green Mark certified office continues to be well-maintained.

PLATINUM

BCA GREEN MARK FOR OFFICE INTERIOR AWARD

Autodesk Asia Pte. Ltd.

Located at 1 Fusionopolis Walk, Solaris

Tenant / Owner

Autodesk Asia Pte. Ltd.

Project Manager

Faithful+Gould Pte. Limited

Interior Designer

Aedas Interiors Pte Ltd.

M&E Engineer

CPG Consultants Pte Ltd

Renovation Contractor

OSS Technologies-A Pte Ltd.

Quantity Surveyor

Faithful+Gould Pte. Limited

Lighting Consultant

Lighting Design Partnership Pte. Ltd.

AV Consultant

Red Technologies (S) Pte Ltd.

Acoustics Consultant

Acvicon Acoustics Consultants Pte Ltd

Key Features

- Energy efficient lighting with zoning and controls through the use of photocells, motion sensors and microwave sensors.
- All office equipment used have an Energy Star rating.
- All water fittings used have excellent WELS rating.
- Extensive use of SGLS certified materials including paint, vinyl flooring, carpet flooring, palm flooring and raised floor systems.
- Use of an internal staircase to promote employee interactions and reduce the need for lift travel between floors.
- Use of teleconferencing facilities to reduce travel, cutting down on carbon footprint.
- Building Management System enables monitoring and management of lighting and air-conditioning systems.



PLATINUM

BCA
**GREEN MARK FOR OFFICE
INTERIOR AWARD**

Lend Lease Asia Holdings Pte Ltd

Located at 60 Anson Road

Tenant / Owner

Lend Lease Asia Holdings Pte Ltd

Renovation Consultant / Contractor

Lend Lease Singapore Pte Ltd

M&E Consultant

Aurecon Singapore (Pte.) Ltd.

Managing Agent/Maintenance Contractor

Lend Lease

ESD Consultant

Aurecon Singapore (Pte.) Ltd.

Key Features

- Energy efficient lighting design with a lighting power budget of only 8.51 W/m².
- Air-conditioning design consisting of separate zones to vary load based on demand.
- Use of energy efficient office equipment.
- Use of furniture and carpets made of recycled content.
- Significant number of potted plants to enhance indoor air quality.
- Use of water efficient fittings for all areas in the office.
- Innovative features such as green corner, leak detection, use of printing reduction techniques etc.



GOLD^{PLUS}

BCA
**GREEN MARK FOR OFFICE
INTERIOR AWARD**

AL Consulting Engineers / SolarGy Pte Ltd

Located at 20 Sin Ming Lane

Tenant / Owner

AL Consulting Engineers / SolarGy Pte Ltd

Renovation Consultant / Contractor

Stema Furniture & Renovation Pte Ltd

M&E Consultant

AL Consulting Engineers

Key Features

- Use of T5 and LED lighting throughout the office.
- Open-office concept with no false ceiling.
- Use of low VOC paint and partitions, gypsum board and carpet made of recycled content.
- Potted plants in office area.
- Motion sensors to control lights in meeting room and toilet.



GOLD^{PLUS}

BCA
**GREEN MARK FOR OFFICE
INTERIOR AWARD**

Tenant Service Centre @ Six Battery Road

Located at 6 Battery Road

Tenant / Owner

CapitaCommercial Trust

Renovation Consultants / Contractors

RSP Architects Planners & Engineers (Pte) Ltd

Low Keng Huat (Singapore) Limited

Facility Manager Company

CapitaLand Commercial Management Pte Ltd

M&E Consultant

Squire Mech Pte Ltd

Managing Agent/Maintenance Contractor

CapitaLand Commercial Management Pte Ltd

Key Features

- Use of water efficient fittings in toilets.
- Provision of rooftop garden and vertical green wall at lobby.
- Extensive recycling programme for the entire building.
- Use of T5 lighting for general office area.
- Use of energy efficient office equipment.



GOLD^{PLUS}

BCA
**GREEN MARK FOR OFFICE
INTERIOR AWARD**

John Wiley and Sons Singapore Pte. Ltd.

Located at Fusionopolis Walk

Tenant / Owner

John Wiley and Sons Singapore Pte. Ltd.

Renovation Consultant / Contractor

D'Perception Singapore Pte Ltd

ESD Consultant

Kaer Pte Ltd

Key Features

- Extensive use of energy efficient T5 and LED lighting.
- Use of energy efficient IT equipments.
- Use of PUB WELS-rated water fittings.
- Scheduling control for air-conditioning and lightings.
- Provision of water leak detection system in all pantries.



GOLD^{PLUS}

BCA
**GREEN MARK FOR OFFICE
INTERIOR AWARD**

Spring Singapore

Located at Solaris

Tenant / Owner

Spring Singapore

Renovation Contractor

Aedas Interior Pte Ltd

Facility Management

CBM Pte Ltd

M&E Consultant

J Roger Preston (Singapore) Pte Ltd

Managing Agent/ Maintenance Contractor

CBM Pte Ltd

ESD Consultant

Kaer Pte Ltd

Key Features

- 40% reduction in office floor space with open layout significantly reducing overall energy consumption.
- Use of energy efficient light fittings in the office, such as LED lighting with schedule control and zoning
- All water fittings are WELS “Excellent” certified; taps have user-activated automatic systems, and water cisterns are dual-flush.
- Use of energy efficient equipment, including IT equipment and air-conditioning system.
- Extensive use of SGLS products with recycling bins provided on all office floors.



GOLD^{PLUS}

BCA
**GREEN MARK FOR OFFICE
INTERIOR AWARD**

Swee Cheng Management Pte Ltd

Located at The Heeren

Tenant / Owner

Swee Cheng Management Pte Ltd

Renovation Contractor

OTH Construction & Engineering Pte Ltd

ESD Consultant

Kaer Pte Ltd

Key Features

- Scheduling control for air-conditioning and lightings.
- Extensive use of energy efficient T5 and LED lighting.
- Installation of motion sensors in meeting area and general open space.
- Re-use of furniture and carpet from ex-tenant and previous office.
- Use of environmentally-friendly and sustainable products such as carpet, laminate, ceiling board, partition board etc. during renovation.



BCA
**GREEN MARK FOR OFFICE
INTERIOR AWARD**

GOLD^{PLUS}

Verizon Communications Singapore Pte. Ltd.

Located at 10 Collyer Quay, Ocean Financial Center

Tenant / Owner

Verizon Communications Singapore Pte Ltd

Project Management

Merx Construction Management

M&E Consultant

J Roger Preston (Singapore) Pte Ltd

Renovation Contractor

New Art Interior Pte Ltd

M&E Contractor

LSK Engineering (S) Pte Ltd

Interior Design Consultant

SCA Design Pte Ltd

ESD Consultant

SCA Design Pte Ltd

Key Features

- Use of the latest lighting technology, such as LED lights in enclosed offices, breakout areas, reception, boardroom, meeting rooms, and carpentry lights.
- Use of toggle switches to minimise usage of power from lighting and air-conditioning after office hours.
- Office is equipped with an internal Environmental Monitoring System (EMS) to monitor the power consumption per department, water consumption, and temperature trending.
- Verizon Green Team promotes green events and educational activities to staff.



GOLD^{PLUS}

BCA
**GREEN MARK FOR OFFICE
INTERIOR AWARD**

Visa Worldwide Pte Limited

Located at 71 Robinson Road

Tenant / Owner

Visa Worldwide Pte Limited

Renovation Contractor

New Art Interior Pte Ltd

Facility Management

Keppel FMO Pte Ltd

M&E Engineer

J Roger Preston (S) Pte Ltd

Managing Agent/ Maintenance Contractor

Keppel FMO Pte Ltd

ID Consultant

SCA Design Pte Ltd

ESD Consultant

Kaer Pte Ltd

Key Features

- Use of energy efficient lighting throughout the office such as LED and T5 fluorescent tubes with high frequency ballast, including zoning and controls.
- Motion sensors in office to conserve energy.
- Extensive use of environmentally sustainable materials during renovation.
- Designated green corner with monthly utility consumption display at each floor.
- Tele-presence system to reduce international travel and carbon footprint.



**GOLD &
CERTIFIED**

BCA GREEN MARK FOR OFFICE INTERIOR AWARD

PROJECT NAME	AWARD	TENANT / OWNER
Ascendas Land (S) Pte Ltd (Located at The Galen, Level 4, Singapore Science Park II)	Gold	Ascendas Land (S) Pte Ltd
Ascendas Land (S) Pte Ltd (Located at The Galen, Level 5, Singapore Science Park II)	Gold	Ascendas Land (S) Pte Ltd
Hexacon Construction Pte Ltd (Located at 432 Balestier Road, Public Mansion)	Gold	Hexacon Construction Pte Ltd
National Climate Change Secretariat (Located at Revenue House)	Gold	National Climate Change Secretariat
Nomura Singapore Limited (Located at Marina Bay Financial Centre Tower 2)	Gold	Nomura Singapore Limited
Office Planner Pte Ltd (Located at E-Centre @ Redhill)	Gold	Office Planner Pte Ltd
SAP Asia Pte Ltd (Located at Mapletree Business City)	Gold	SAP Asia Pte Ltd
Societe Generale Corporate & Investment Banking (Located at Marina Bay Financial Tower 1)	Gold	Societe Generale Corporate & Investment Banking
Burberry (Singapore) Distribution Company Pte Ltd (Located at 50 Scotts Road)	Certified	Burberry (Singapore) Distribution Company Pte Ltd

BCA GREEN MARK FOR RESTAURANTS AWARD

The Award

The BCA Green Mark for Restaurants is BCA's new initiative to promote and recognise environmentally-friendly and sustainable practices and features in F&B outlets. The scheme assesses the F&B outlet on the following criteria:

- Energy efficiency
- Water efficiency
- Sustainable management and operation
- Indoor environmental quality
- Other green features

Under the assessment system, points are awarded for incorporating environmentally-friendly features which go beyond normal practices. The assessment identifies designs where specific targets are met. The total points obtained provide an indication of the environmental friendliness of the outlet's design. The F&B outlets are awarded Platinum, Gold^{Plus}, Gold or Certified rating depending on the points scored.

The assessment process involves a pre-assessment briefing to the project team for a better understanding of the criteria requirements and evaluation of the certification level sought. The actual assessment would then be carried out at later stage to verify the relevant reports and documentary evidence and ensure that the outlet meets the intents of the criteria and certification level. Subsequently, the outlets are required to have triennial assessment. This is to ensure that a Green Mark certified F&B outlet continues to be well-maintained.

PLATINUM

BCA
**GREEN MARK FOR
RESTAURANTS AWARD**

McDonald's - Jurong Central Park

Located at 291 Boon Lay Way

Client / Owner

McDonald's Restaurants Pte Ltd

Project Manager

Megabuilders & Development Pte Ltd

Architect

Archideas Design Inc

M&E Engineer

Alpha Consulting Engineers Pte Ltd

Civil and Structural Engineer

Engineers Incorporated

Landscape Designer / Landscape Contractor

ONG&ONG Pte Ltd

Plantwerkz Pte Ltd

ESD Consultants

Metropolitan Green Design and Technology

GETC Asia Pte Ltd

Key Features

- Green roof to improve building aesthetics, thermal performance and storm water management system.
- Rainwater harvesting system to collect rain water for plant irrigation, with moisture sensor to initiate watering as and when required.
- Integrated heat recovery system to save electricity and produce hot water from air-conditioner waste heat for dish washing and other kitchen uses.
- Negative kitchen pressurisation system to prevent ingress of odour from the kitchen into the dining areas.
- Energy efficient kitchen equipment with Energy Star rating; next generation Low Oil Volume (LOV) fryer with improved cooking efficiency, simplified oil filtering and cleaning leading to enhanced environmental benefits.
- Sustainable building materials: recycled ceiling boards, green paint, recycled concrete aggregate for road foundation and drains made from recycled concrete.
- Smart thermostat with time-based temperature set-points conserves energy by preventing over-cooling.



GOLD

BCA
**GREEN MARK FOR
RESTAURANTS AWARD**

McDonald's - Bishan Park

Located at 1378 Ang Mo Kio Avenue 1

Client / Owner

McDonald's Restaurants Pte Ltd

Renovation Consultant/ Contractor

Megabuilders & Development Pte Ltd

Architect

Archideas Design Inc

Structural Engineer

Engineers Incorporated

Landscape Consultant

Teo Kee

ESD Consultant

Metropolitan Green Design and Technology

Key Features

- Integrated heat recovery system to save electricity and produce hot water from air-conditioner waste heat for dish washing and other kitchen uses.
- Negative kitchen pressurisation system to prevent ingress of odour from the kitchen into dining areas.
- Energy efficient kitchen equipment with Energy Star rating; next generation Low Oil Volume (LOV) fryer with improved cooking efficiency, simplified oil filtering and cleaning leading to enhanced environmental benefits.
- Sustainable building materials: green paint, sustainable timber for external cladding.
- Smart thermostat with time-based temperature set-points conserves energy by preventing over-cooling.



GOLD

BCA
**GREEN MARK FOR
RESTAURANTS AWARD**

McDonald's - SpringLeaf Tower

Located at 3 Anson Road

Client / Owner

McDonald's Restaurants Pte Ltd

M&E Consultant

Alpha Consulting Engineers Pte Ltd

Renovation Consultant/ Contractor

Huason Construction Pte Ltd

Architect

Archideas Design Inc

Structural Engineer

Engineers Incorporated

ESD Consultant

Metropolitan Green Design and Technology

Key Features

- Integrated heat recovery system to save electricity and produce hot water from air-conditioner waste heat for dish washing and other kitchen uses.
- Negative kitchen pressurisation system to prevent ingress of odour from the kitchen into dining areas.
- Energy efficient kitchen equipment with Energy Star rating; next generation Low Oil Volume (LOV) fryer with improved cooking efficiency, simplified oil filtering and cleaning leading to enhanced environmental benefits.
- Sustainable building materials: recycled ceiling boards, green paint, recycled concrete aggregate for road pavements, kerbs and culvert drains made from recycled concrete.
- Smart thermostat with time-based temperature set-points conserves energy by preventing over-cooling.



CERTIFIED

BCA
**GREEN MARK FOR
RESTAURANTS AWARD**

Brewerkz Restaurant & Microbrewery

Located at 30 Merchant Road

Client / Owner
MENU Pte Ltd

Key Features

- Lighting power budget saving of 49%.
- Provision of light zoning, scheduling and dimming.
- Make use of lighting from corridors and atriums to reduce lighting needs.
- Use of water efficient equipments and practices.



CERTIFIED

BCA
**GREEN MARK FOR
RESTAURANTS AWARD**

McDonald's - City Square

Located at 180 Kitchener Road

Client / Owner

McDonald's Restaurants Pte Ltd

Project Manager

Huason Construction Pte Ltd

Architect

Archideas Design Inc

M&E Engineer

Parsons Brinckerhoff Pte Ltd

Landscape Consultant

Teo Kee

ESD Consultant

Metropolitan Green Design and Technology

Key Features

- Negative kitchen pressurisation system to prevent ingress of odour from the kitchen into the dining areas.
- Energy efficient kitchen equipment with Energy Star rating; next generation Low Oil Volume (LOV) fryer with improved cooking efficiency, simplified oil filtering and cleaning leading to enhanced environmental benefits.
- Integrated CO₂ detector which alerts staff should the CO₂ levels in the kitchen reach an undesirable level due to any accidental leakage from the CO₂ cylinders for the carbonated drinks.



BCA GREEN MARK FOR BUILDINGS AWARD (OVERSEAS)



BCA International Pte Ltd is a wholly-owned subsidiary of BCA. It provides a multitude of services in developing excellent built environments worldwide. BCA Green Mark certification is one of the most popular services offered by BCA International.

Success of BCA Green Mark overseas

As one of more than 20 Green Building rating systems recognised by the World Green Building Council (WGBC), the BCA Green Mark has gained popularity in the region as it is developed specially for the tropical climate.

The BCA Green Mark scheme is not limited to buildings but also encompasses districts as it assesses the environmental sustainability of eco-precincts, eco-business parks and eco-infrastructure. In addition, BCA has customised a Green Mark for Buildings scheme for China that is suited to the country's climatic conditions.

More developers are using the BCA Green Mark to provide meaningful differentiation of their buildings in the building and real estate market.

Benefits of having a Green Mark building include:

- Reduction in water and energy bills;
- Improvement in indoor environmental quality;
- Reduction in potential environmental impact.

As of April 2012, there are about 150 overseas project applications for the BCA Green Mark certification across the ASEAN region, China, India, Saudi Arabia and Tanzania.



GOLD

BCA
**GREEN MARK FOR
BUILDINGS AWARD (OVERSEAS)**

Exchange Tower, Thailand

Existing Non-Residential Buildings

Building Owner

City Developments Limited

Facility Management

CBRE Thailand

ESD Consultant

CBM Solutions Pte Ltd

Key Features

- Estimated energy savings: 68,817 kWh/yr; estimated water savings: 558 m³/yr.
- Motion sensors for toilets.
- VSD for secondary chilled water pump, condenser water pump and AHU.
- CO sensor.
- Photosensors for landscape lighting.



GOLD

BCA GREEN MARK FOR BUILDINGS AWARD (OVERSEAS)

Gurney Plaza, Malaysia

Existing Non-Residential Buildings

Building Owner

CapitaMalls Malaysia Trust

Facility Management

CapitaMalls Malaysia REIT Management Sdn Bhd

ESD Consultant

CapitaMalls Malaysia REIT Management Sdn Bhd

Energy Audit

LJ Energy Sdn. Bhd.

Key Features

- Estimated energy savings: 1,500,000 kWh/yr; estimated water savings: 60,648 m³/yr
- Car park guidance system.
- Carbon activated filters and UV bacteria eradicating lights for exhaust system.
- Underground water and rainwater harvesting system.
- Waste recycling programme.
- Sub-metering for major M&E system i.e. chillers.
- Sub-metering for potable water consumptions.
- WELS-rated water efficient fittings.
- High efficiency T8 lighting at car parks.



GOLD

BCA
**GREEN MARK FOR
BUILDINGS AWARD (OVERSEAS)**

Lakeside Ville (Phase 3), China

New Residential Buildings

Client / Developer

Habitat Properties (Shanghai) Ltd

Architect

SCDA Architect Pte Ltd

The Ninth Design & Research Institute

M&E Engineer

The Ninth Design & Research Institute

Structural Engineer

The Ninth Design & Research Institute

Quantity Surveyor

Langdon & Seah Consultancy (Shanghai)
Company Limited

Main Contractor

Jiang Su Zhongxin Construction Group

Landscape Consultant

Belt Collins International Pte Ltd

ESD Consultant

G-Energy Global Pte Ltd

Key Features

- Energy efficient air-conditioners and refrigerators.
- Design for effective natural ventilation and daylighting.
- Energy efficient artificial lightings in common areas with sound and motion sensor control.
- Gas heaters for all home units.
- Under-floor heating system.
- Ductless mechanical ventilation system.
- Use of certified wood and provision of recycling bins.



GOLD

BCA
**GREEN MARK FOR
BUILDINGS AWARD (OVERSEAS)**

Sunway Palazzio, Malaysia

New Residential Buildings

Client / Developer

Sunway City Bhd

Project Manager

Sunway City Bhd

Architect

Arkitek Maju Bina Sdn Bhd

M&E Engineer

Petareka Perunding (M) Sdn Bhd

Structural Engineer

Perunding ACE Sdn Bhd

Quantity Surveyor

Langdon & Seah (M) Sdn Bhd

Main Contractor

Syarikat Pembinaan Yeoh Tiong Lay Sdn Bhd

Landscape Consultant

Peter Tan & Associates Sdn Bhd

Key Features

- Estimated energy savings: 1,143,892 kWh/yr.
- Building envelope design that reduces cooling load.
- Maximised natural day lighting and ventilation to all living spaces and common areas.
- Reduced consumption of portable water, with water monitoring systems and rainwater harvesting at rooftop.



BCA
**GREEN MARK FOR
 BUILDINGS AWARD (OVERSEAS)**

CERTIFIED

PROJECT NAME	CATEGORY	CLIENT / DEVELOPER / BUILDING OWNER
CapitaMall Aidemengdun, China	Non-Residential New Buildings	CapitaMalls Asia
Citadines Gaoxin Xi'an, China	Non-Residential New Buildings	The Ascott Limited
Somerset Heping Shenyang, China	Non-Residential New Buildings	The Ascott Limited
11 Mont' Kiara, Malaysia	Residential New Buildings	Sunrise Innovations Sdn Bhd