



# BCA AWARDS 2015

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Recognising Excellence in the Built Environment

# CONSTRUCTION EXCELLENCE AWARDS

## **The Award**

The BCA Construction Excellence Award was introduced in 1986 and is now into its 29th year of competition. To date, BCA has conferred 237 Awards and 216 Certificates of Merit (1986~2014). Invitations for nominations for the 2015 Awards were made in August 2014 to architectural and engineering consultancy firms, government departments, statutory boards as well as construction firms. 44 projects were nominated and 43 were short listed for evaluation. In the end, a total of 23 Awards and 7 Certificate of Merits were conferred for 2015. To insert award description

## **The Recipients**

Builders are the principal recipients of the Award. Developers and consultants (Architects, Structural Engineers, M&E Engineers and Quantity Surveyors) who were involved in the project will also be acknowledged.

# CONSTRUCTION EXCELLENCE AWARDS

## Award Categories

- a. There are 7 award categories as follows:
- b. Commercial/Mixed Development Buildings
- c. Industrial Buildings
- d. Institutional Buildings
- e. Residential Buildings (\$1800 / m2 and Above)
- f. Residential Buildings (Below \$1800 / m2 )
- g. Small Buildings - \$3 million to \$10 million
- h. Civil Engineering Projects

## Assessment Criteria

Projects were assessed by the Assessment Committee in 3 stages:-

- a. Builders' presentation on the construction process;
- b. Site visits; and
- c. A committee meeting to deliberate the results.

The assessment of the nominations is based on the following criteria:

- a. Builder's overall management of the project;
- b. Builder's technical capability and innovations; and
- c. Quality of the completed project.

# CONSTRUCTION EXCELLENCE AWARDS

## ASSESSMENT COMMITTEE

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BCA Board Member  
Managing Director  
RSP ARCHITECTS PLANNERS ENGINEERS (PTE) LTD

### Deputy Chairman:

Mr Khairudin Saharom  
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CITY DEVELOPMENTS LTD  
SHIMIZU CORPORATION  
ALLGREEN PROPERTIES LIMITED  
URBAN REDEVELOPMENT AUTHORITY  
SQUIRE MECH PTE LTD  
LAND TRANSPORT AUTHORITY  
TIONG SENG CONTRACTORS (PTE.) LTD  
BCA BOARD MEMBER  
NATIONAL UNIVERSITY OF SINGAPORE  
ONG&ONG PTE LTD  
T.Y.LIN INTERNATIONAL PTE LTD  
BUILDING AND CONSTRUCTION AUTHORITY  
HOUSING & DEVELOPMENT BOARD

# Asia Square Tower 2

Commercial / Mixed Development Buildings Category

AWARD



## CONSTRUCTION EXCELLENCE AWARDS



Builder	Hyundai Engineering & Construction Co., Ltd
Developer	Asia Square Tower 2 Pte. Ltd.
Principal Consultant	Architects 61 Pte Ltd
Architectural Consultant	Architects 61 Pte Ltd
Structural Consultant	Meinhardt (Singapore) Pte Ltd
M&E Consultant	Meinhardt (Singapore) Pte Ltd
Quantity Surveyor	Northcroft Lim Consultants Pte Ltd
Construction Cost	S\$437.3 million
Construction Period	30.0 months
Gross Floor Area	113,580.00 m <sup>2</sup>

# Asia Square Tower 2

Commercial / Mixed Development Buildings Category

AWARD



CONSTRUCTION EXCELLENCE AWARDS



- **ALTERNATE DESIGN:** D&B FIDIC Red Book Contract with alternate design to avoid deep basement construction in view of the site constraint
- **NOTABLE FEATURES**
  - Steel trusses installation at the roof without affecting any structural elements under the Enabling Works
  - 2-stage concrete casting method for the transfer plate and transfer beam at 35<sup>th</sup> sty
  - Changed 2-way beams to 1-way beams design to cater for long-span office layout and standardized floor design between office and hotel increased productivity
  - Fall proof formwork with the used of ACS & RCS safety screens and special 2-layers safety catch net to avoid falling objects
  - Triple Low-E coating double glazed curtain walling

# Asia Square Tower 2

Commercial / Mixed Development Buildings Category

AWARD



CONSTRUCTION EXCELLENCE AWARDS



- **NOTABLE FEATURES**

- Used of district cooling simplified air-conditioning system and space required
- Largest photovoltaic cells (solar panel) installation on the roof for commercial developments in Singapore
- First biodiesel generation plant for commercial development in CBD

# Carlton City Hotel (Tanjong Pagar)

Commercial / Mixed Development Buildings Category

AWARD



## CONSTRUCTION EXCELLENCE AWARDS



Builder	Kajima Overseas Asia Pte Ltd
Developer	Carlton City Hotel (Singapore) Pte Ltd
Principal Consultant	DP Architects Pte Ltd
Structural Consultant	T.Y.Lin International Pte Ltd
M&E Consultant	Beca Carter Hollings & Ferner (S.E. Asia) Pte Ltd
Quantity Surveyor	Davis Langdon KPK (Singapore) Pte Ltd
Project Management Consultant	Davis Langdon KPK (Singapore) Pte Ltd
Construction Cost	S\$113.9 million
Construction Period	31.5 months
Gross Floor Area	19,333.00 m <sup>2</sup>



# Carlton City Hotel (Tanjong Pagar)

Commercial / Mixed Development Buildings Category

AWARD



CONSTRUCTION EXCELLENCE AWARDS



- **NOTABLE FEATURES:**

- Comprehensive use of precast structures and jump screen at perimeter improve productivity and lower risk
- A complex floating slab was constructed for holding the massive M&E system at 27-sty which was directly over the suite rooms
- Installation of 13,702 m2 of large marble slabs with matching veins
- Achieved average 8 days cycle per floor
- Used of Auto Climb Core Wall Formwork System
- Rainwater collection tray installed at every floor
- Various customized lifting cage, working platform, temporary stage, etc to improve safety

# Holiday Inn Express Singapore Orchard Road

Commercial / Mixed Development Buildings Category

AWARD



## CONSTRUCTION EXCELLENCE AWARDS



Builder	Kienta Engineering Construction Pte. Ltd.
Developer	Valeside Pte Ltd
Architectural Consultant	JGP Architecture (S) Pte Ltd
Structural Consultant	JS Tan Consultants Pte Ltd
M&E Consultant	United Project Consultants Pte Ltd
Quantity Surveyor	Langdon & Seah Singapore Pte Ltd
Interior Designer	APSA Pte Ltd
Green Mark Consultant	KAER Pte Ltd
Project Management Consultant	ARCADIS Project Management Pte Ltd
Construction Cost	S\$44.6 million
Construction Period	26.0 months
Gross Floor Area	7,365.83 m <sup>2</sup>

# Holiday Inn Express Singapore Orchard Road

Commercial / Mixed Development Buildings Category

AWARD



## CONSTRUCTION EXCELLENCE AWARDS



- **MAIN CONSTRAINTS:**
  - Heavy traffic and shared access with neighbour site
  - Existing piles deferred foundation design
- **NOTABLE FEATURES:**
  - Contractor plays a key role in the design and implementation of Green Mark Platinum features e.g. green wall, roof garden, etc
  - Used of self-cleaning paint for all external walls to save water
  - Adaptation of full height netting and catch platform for safety
  - High productivity gained with the use of PERI System formwork and ST100 for non-typical floor for structural works. Prefabricated reinforcement cages and bars were installed where possible.
  - Guest room toilet wall in curved glass and a glass door to serve as shower door and toilet door

# Holiday Inn Express Singapore Orchard Road

Commercial / Mixed Development Buildings Category

AWARD



## CONSTRUCTION EXCELLENCE AWARDS



- Introduced the use of hydroball, UV light cleaning, heat recovery wheel, magnetic centrifugal chiller to optimize the efficiency of the cooling system
- Extensive usage of T8 or T5 lighting tubes for the entire project to save electricity
- Provided alternate storey water supply to reduce and control water consumption

# THE METROPOLIS

Commercial / Mixed Development Buildings Category

CONSTRUCTION EXCELLENCE AWARDS

AWARD



Builder	Lum Chang Building Contractors Pte Ltd
Developer	Ho Bee Land Limited
Principal Consultant	DCA Architects Pte Ltd
Architectural Consultant	DCA Architects Pte Ltd
Structural Consultant	KTP Consultants Pte Ltd
M&E Consultant	KTP International Pte Ltd
Quantity Surveyor	Langdon & Seah Singapore Pte Ltd
Landscape Consultant	Cicada Pte Ltd
Facade Consultant	Arup Singapore Pte Ltd
Lighting Consultant	Lighting Planners Associates (S) Pte Ltd
Acoustic Consultant	Shen Milsom & Wilke (S) Pte Ltd
Traffic Consultant	Aecom Singapore Pte Ltd

# THE METROPOLIS

Commercial / Mixed Development Buildings Category

AWARD



CONSTRUCTION EXCELLENCE AWARDS



Green Mark Consultant

G-Energy Global Pte Ltd

Security Consultant

SKM (Singapore) Pte Ltd

Arborist Consultant

ArborCulture Pte Ltd

Construction Cost

S\$297.7 million

Construction Period

33.0 months

Gross Floor Area

115,394.66 m<sup>2</sup>



# THE METROPOLIS

Commercial / Mixed Development Buildings Category

AWARD



## CONSTRUCTION EXCELLENCE AWARDS



- **ALTERNATE DESIGNS/PRODUCTS:**
  - Combined 2 rows of bored piles with adjacent CBP retaining wall due to proximity
  - Insitu roof perimeter beams, columns and trellis columns changed to precast concrete increased productivity and improved safety
  - Wall changed to drywall and Acotec panels
- **NOTABLE FEATURES:**
  - Adopted a combination of top down and semi top down construction for the basement construction for strut-free
  - Used DOKA system formwork like table form and remote control hydraulic system to lift the core wall formwork
  - Installed Table Lift to transfer table formwork to new floor reduced demands for tower crane and enhanced safety

# THE METROPOLIS

Commercial / Mixed Development Buildings Category

AWARD



CONSTRUCTION EXCELLENCE AWARDS



- **NOTABLE FEATURES:**

- Installed Tower Pile Cap above 1<sup>st</sup> story slab to allow earlier usage of tower crane
- Used stationary concrete placing boom and table lift system to lift formwork to relief usage of tower crane
- Used of solar panel to reduce demand for electricity



# Spectra Secondary School

Institutional Buildings Category

## CONSTRUCTION EXCELLENCE AWARDS



## AWARD



Builder	Kwan Yong Construction Pte Ltd
Developer	Ministry of Education
Principal Consultant	Architects Vista Pte Ltd
Architectural Consultant	Architects Vista Pte Ltd
Structural Consultant	ECAS-EJ Consultants Pte Ltd
M&E Consultant	Mott MacDonald Singapore Pte Ltd
Quantity Surveyor	Barton Bruce Shaw Pte Ltd
Project Management Consultant	SIPM Consultants Pte Ltd
Construction Cost	S\$32.4million
Construction Period	20.0 months
Gross Floor Area	23,178.88m <sup>2</sup>

# Spectra Secondary School

Institutional Buildings Category

AWARD



## CONSTRUCTION EXCELLENCE AWARDS



- **ALTERNATE DESIGNS/PRODUCTS:**

- Changed 1<sup>st</sup> storey insitu floor and beam to flat slab design
- Changed insitu drains to precast
- Used PVC drip ledge along edges of free fall roofs
- Doubled up the integrated cable tray as lighting support and feature design along common corridors

- **NOTABLE FEATURES:**

- first government school projects which used BIM
- Managed to top 1m thick soil to PUB required Platform level using excavated soil without the need to source from external
- Used precast wall system for internal and external walls
- Used of aluma system formwork and DFS formwork
- Replaced RC stiffener with steel stiffeners
- Minimised usage of scaffolding with scissor and boom lifts

# Academia

Institutional Buildings Category

AWARD



## CONSTRUCTION EXCELLENCE AWARDS



Builder	Kajima Overseas Asia Pte Ltd
Developer	Ministry of Health
Principal Consultant	CPG Consultants Pte Ltd
Architectural Consultant	CPG Consultants Pte Ltd
Structural Consultant	CPG Consultants Pte Ltd
M&E Consultant	CPG Consultants Pte Ltd
Quantity Surveyor	CPG Consultants Pte Ltd
Facade Consultant	AURECON Singapore (Pte) Ltd
Construction Cost	S\$266.8 million
Construction Period	31.0 months
Gross Floor Area	76,279.25 m <sup>2</sup>

# Academia

Institutional Buildings Category

AWARD



## CONSTRUCTION EXCELLENCE AWARDS



- **ALTERNATE DESIGNS/PRODUCTS:**

- Installed drain cell water management system at basement slab to facilitate draining off water to perimeter drain in the external leaf
- Replaced insitu concrete stiffeners with steel type
- Used prefabricated steel staircase

- **NOTABLE FEATURES:**

- Used system formwork with prefabricated cage rebar and precut rebars
- Used BIM for managing complex 1033-ton steel structures in housing the massive M&E services at roof and basement mezzanine
- Used pre-insulated chilled water pipes and pre-painted fire sprinkle pipes
- Façade aluminium fin, panel features and steel frames were prefabricated in modules to facilitate installation
- Used rapid drying Self Smoothing Screed for higher accuracy in placing lab equipment

# NUH Medical Centre

Institutional Buildings Category

AWARD



## CONSTRUCTION EXCELLENCE AWARDS



Builder	Penta-Ocean Construction Co., Ltd
Developer	National University Hospital (S) Pte Ltd
Principal Consultant	CIAP Architects Pte Ltd
Architectural Consultant	CIAP Architects Pte Ltd
Structural Consultant	T.Y.Lin International Pte Ltd
M&E Consultant	Parsons Brinckerhoff Pte Ltd
Quantity Surveyor	Langdon & Seah Singapore Pte Ltd
Construction Cost	S\$266.3 million
Construction Period	27.4 months
Gross Floor Area	71,917.61m <sup>2</sup>



# NUH Medical Centre

Institutional Buildings Category

AWARD



CONSTRUCTION EXCELLENCE AWARDS



- **ALTERNATE DESIGNS/PRODUCTS:**

- Installed drain cell water management system at basement slab to facilitate draining off water to perimeter drain in the external leaf
- Replaced insitu concrete stiffeners with steel type
- Used prefabricated steel staircase

- **NOTABLE FEATURES:**

- Used system formwork with prefabricated cage rebar and precut rebars
- Used BIM for managing complex 1033 tons steel structures in housing the massive M&E services at roof and basement mezzanine
- Used pre-insulated chilled water pipes and pre-painted fire sprinkle pipes
- Façade aluminium fin, panel features and steel frames were prefabricated in modules to facilitate installation
- Used rapid drying Self Smoothing Screed for higher accuracy in placing lab equipment

# The Glyndebourne

Residential Buildings - \$1,800/m2 & Above Category

AWARD



## CONSTRUCTION EXCELLENCE AWARDS



Builder	Tiong Seng Contractors (Pte) Ltd
Developer	Copthorne Orchid Hotel Singapore Pte Ltd
Principal Consultant	Team Design Architects Pte Ltd
Architectural Consultant	Team Design Architects Pte Ltd
Structural Consultant	LSW Consulting Engineers
M&E Consultant	Parsons Brinckerhoff Pte Ltd
Quantity Surveyor	Langdon & Seah Singapore Pte Ltd
Construction Cost	S\$104.0 million
Construction Period	31.0 months
Gross Floor Area	25,604.40 m <sup>2</sup>

# The Glyndebourne

Residential Buildings - \$1,800/m2 & Above Category

AWARD



## CONSTRUCTION EXCELLENCE AWARDS



- **ALTERNATE DESIGNS/PRODUCTS:**

- Redesigned the basement carpark layout to maximize the vehicular carpark requirement and reduced the basement footprint by approximately 260m2
- Used lightweight Cobiax modular void former system to displace the concrete used for the structural slab which in turns reduces the dead load of the overall structural system

- **NOTABLE FEATURES:**

- Used grout mixed piles as the temporary retaining wall for the 12m deep excavation for basement
- Used Prefabricated Bathroom Units (PBU) and Precast Panels
- Used iXpress flexible water piping system
- Adopted the public drain at the perimeter and maintain in tip-top condition as a concerted effort to fight dengue
- Adopted Building Information Modelling (BIM) throughout the design, construction and as-built stage



# CUBE 8

Residential Buildings - \$1,800/m2 & Above Category

AWARD



## CONSTRUCTION EXCELLENCE AWARDS



Builder	Dragages Singapore Pte Ltd
Developer	City Developments Limited
Principal Consultant	ADDP Architects LLP
Architectural Consultant	ADDP Architects LLP
Structural Consultant	Meinhardt (Singapore) Pte Ltd
M&E Consultant	CONTEEM Engineers Pte Ltd
Quantity Surveyor	Davis Langdon KPK (Singapore) Pte Ltd
Landscape Consultant	COEN Design International Pte Ltd
Construction Cost	S\$84.6 million
Construction Period	36.0 months
Gross Floor Area	20,804.76 m <sup>2</sup>

# CUBE 8

Residential Buildings - \$1,800/m2 & Above Category

AWARD



## CONSTRUCTION EXCELLENCE AWARDS



- **ALTERNATE DESIGNS/PRODUCTS:**
  - Repositioned storey shelter from inside the unit to the emergency staircase provided more usable space in the unit
- **NOTABLE FEATURES:**
  - Vertical rebar prefabricated yard improved safety, productivity and reduced wastages
  - Used of external cantilever façade platform, stair platform, working platform and internal shaft platform eliminated full height scaffolding
  - No plastering required for surface produced by metal formwork system
  - Retractable cage formworks were used for lift shafts and ventilation shafts thus enabling concrete pouring at one go
  - Incorporated numerous precast components including PBU, bay windows, zig-zag walls, screen walls, etc
  - Structural slabs were cast up to finished level that eliminated conventional screed works
  - Drywall partition system for internal walls

# Boulevard Vue

Residential Buildings - \$1,800/m2 & Above Category

AWARD



## CONSTRUCTION EXCELLENCE AWARDS



Builder	China Construction (South Pacific) Development Co Pte Ltd
Developer	Far East Organization
Principal Consultant	Ong&Ong Pte Ltd
Architectural Consultant	Ong&Ong Pte Ltd
Structural Consultant	Beca Carter Hollings & Ferner (S.E. Asia) Pte Ltd
M&E Consultant	Rankine & Hill (Singapore) Pte Ltd
Quantity Surveyor	Rider Levett Buckall LLP
Project Management Consultant	Acradis Project Management Pte Ltd
Landscape Consultant	Ong&Ong Pte Ltd
Construction Cost	S\$68.6 million
Construction Period	42.0 months
Gross Floor Area	11,635.00 m <sup>2</sup>

# Boulevard Vue

Residential Buildings - \$1,800/m2 & Above Category

AWARD



## CONSTRUCTION EXCELLENCE AWARDS



- **ALTERNATE DESIGNS/PRODUCTS:**
  - Foundation piles were shifted in and incorporate Debonding piles due to 3m underground reserve MRT line requirement
  - Integrated design for TERS and retaining wall
  - Diagonal stress free supporting design (using ring slab as stress) semi top down method for basement construction
  - Replaced membrane system with concrete additive waterproofing system for basement and E deck
- **NOTABLE FEATURES:**
  - Obtained BCA(PIP) for RE-Engineering of RC vertical components with integrated steel Face System formwork and working platform
  - Obtained BCA(PIP) for Self-Climbing integrated external Platform and construction protection Screen
  - Obtained BCA(PIP) for Advanced high-capacity modularized shoring system for the construction of 4th storey 3meter thick slab

# Boulevard Vue

Residential Buildings - \$1,800/m2 & Above Category

AWARD



CONSTRUCTION EXCELLENCE AWARDS



- **NOTABLE FEATURES:**
  - Obtained BCA(PIP) for RE-Engineering construction of typical slab & beam with advanced formwork system
  - Used of unitised curtain wall system
  - Innovative design for toilets, trench and shallow floor waste/trap system (white plan)

# TreeHouse Condominium

Residential Buildings - \$1,800/m<sup>2</sup> & Above Category

AWARD



## CONSTRUCTION EXCELLENCE AWARDS



Builder	Tiong Seng Contractors (Pte) Ltd
Developer	Chestnut Avenue Developments Pte Ltd
Principal Consultant	ADDP Architects LLP
Architectural Consultant	ADDP Architects LLP
Structural Consultant	DE Consultants (S) Pte Ltd
M&E Consultant	United Project Consultants Pte Ltd
Quantity Surveyor	Langdon & Seah Singapore Pte Ltd
Construction Cost	\$S\$146.0 million
Construction Period	42.5 months
Gross Floor Area	52,437.92 m <sup>2</sup>



# TreeHouse Condominium

Residential Buildings - \$1,800/m2 & Above Category

AWARD



## CONSTRUCTION EXCELLENCE AWARDS



- **ALTERNATE DESIGNS/PRODUCTS:**

- Prefabricated steel modular structure system for construction of the Greenwall minimised welding on site. Insitu planter boxes were changed to GFRP type.
- Changed the raft foundation with soil improvement design to bored pile - raft foundation system increased productivity and improved safety
- Adopted Cobiax slab system that significantly reduced load and concrete used
- Changed the club house 3D curved roof design to a composite system eased installation
- Redesigned the curved roof into 5 pcs precast segments for ease of installation. A special caterpillar working platform was fabricated to install the curved precast roof panels safely
- Redesigned the GYM structure to steel

# TreeHouse Condominium

Residential Buildings - \$1,800/m2 & Above Category

AWARD



CONSTRUCTION EXCELLENCE AWARDS



- **NOTABLE FEATURES:**

- Optimized productivity with integration of various systems including PBU, customized formwork for staircase, MV shaft construction, modular platform for lift core shaft construction, advanced system formwork, pre-cage reinforcement, precast for façade and external wall including the curved roof



# The Interlace

Residential Buildings - \$1,800/m<sup>2</sup> & Above Category

CONSTRUCTION EXCELLENCE AWARDS



AWARD



Builder	Woh Hup (Private) Limited
Developer	Ankerite Pte Ltd
Principal Consultant	RSP Architects Planners & Engineers (Pte) Ltd
Architectural Consultant	RSP Architects Planners & Engineers (Pte) Ltd
Structural Consultant	T.Y.Lin International Pte Ltd
M&E Consultant	Squire Mech Pte Ltd
Quantity Surveyor	Langdon & Seah Singapore Pte Ltd
Landscape Architect	ICN Design International Pte Ltd
Construction Cost	S\$442.2 million
Construction Period	42.5 months
Gross Floor Area	169,800.00 m <sup>2</sup>

# The Interlace

Residential Buildings - \$1,800/m<sup>2</sup> & Above Category

AWARD



CONSTRUCTION EXCELLENCE AWARDS



- **ALTERNATE DESIGNS/PRODUCTS:**
  - Changed the 10m deep RC spine wall with cross walls to a mere 2.5m deep transfer box girder based on post-tensioning concept
  - Grade 80 high strength concrete was used for the circular mega columns where container blocks intercepted at various levels significantly to slim down the sizes and increased the unit size too
  - Replaced piles with pad footings due to good soil condition
- **NOTABLE FEATURES:**
  - Construction of 20 nos transfer deck using “balanced cantilevered” method (as used for bridge construction) significantly reduce construction load on heavy duty shoring below by casting each box girder in stages as the transfer deck was self-supporting
  - Space within the transfer deck girder was used to route M&E services
  - BIM was utilised to determine the complex construction sequencing in the interconnecting of container boxes
  - A combination of various system formwork systems, precast elements and prefabricated steel components were carefully adopted to increase productivity

# Marina Bay Suites

Residential Buildings - \$1,800/m2 & Above Category

## CONSTRUCTION EXCELLENCE AWARDS



## AWARD



Builder	Woh Hup (Private) Limited
Developer	Marina Bay Suites Pte Ltd
Principal Consultant	Architects 61 Pte Ltd
Architectural Consultant	Architects 61 Pte Ltd
Structural Consultant	Meinhardt (Singapore) Pte Ltd
M&E Consultant	Meinhardt (Singapore) Pte Ltd
Quantity Surveyor	Langdon & Seah Singapore Pte Ltd
Architectural Design Consultant	Kohn Pedersen Fox Associates
Construction Cost	S\$188.1 million
Construction Period	38.5 months
Gross Floor Area	47,816.18 m <sup>2</sup>

# Marina Bay Suites

Residential Buildings - \$1,800/m2 & Above Category

AWARD



## CONSTRUCTION EXCELLENCE AWARDS



- **ALTERNATE DESIGNS/PRODUCTS:**

- Integrating existing piles of PUB drain with new steel micropile to design as permanent structure instead of new RC pile for UPN tunnel underneath of PUB drain part
- Adopted sinking box construction method to construct lift pit raft

- **NOTABLE FEATURES:**

- A combination of adaptation of DFS Kumkang Aluminium Formwork, Concrete pump & placing boom, PERI Alum, PVC Panel formwork for lift core wall, Auto-Climb PERI safety screen & working platform, etc increased productivity
- PERI Propping system allowed Level 6 4m thick transfer slab to be cast in one operation
- Used of smart levelling machine for screedless floor

# Hundred Trees Condominium

Residential Buildings - \$1,800/m2 & Above Category

AWARD



## CONSTRUCTION EXCELLENCE AWARDS



Builder	Tiong Seng Contractors (Pte) Ltd
Developer	City Developments Limited
Principal Consultant	Ong&Ong Pte Ltd
Structural Consultant	KTP Consultants Pte Ltd
M&E Consultant	Squire Mech Pte Ltd
Quantity Surveyor	Davis Langdon KPK (Singapore) Pte Ltd
Interior Design Consultant	Index Design Pte Ltd
Landscape Consultant	Salad Dressing Pte Ltd
Construction Cost	S\$112.4 million
Construction Period	30.0 months
Gross Floor Area	43,729.65 m <sup>2</sup>



# Hundred Trees Condominium

Residential Buildings - \$1,800/m2 & Above Category

CONSTRUCTION EXCELLENCE AWARDS

AWARD



- **ALTERNATE DESIGNS/PRODUCTS:**

- Integrated precast system incorporating structural, architectural and M&E Services
- Added Cobiaz System in floor slab reduced load and concrete
- Changed 80% of toilets to PBU – unitized type
- Changed timber flooring to laminated timber floor
- Changed timber service doors along corridor to metal type

- **NOTABLE FEATURES:**

- A careful combination of adaptation of System Formwork, PBU and precast components increased productivity
- Used PERIcad software for advanced formwork design and planning
- Used rebated internal timber door with lift-off hinge
- Used of Modular ACO drain
- Precast kerb for drywall installation
- Used of IX Press Fitting Pipes

# Ardmore Residence

Residential Buildings - \$1,800/m<sup>2</sup> & Above Category

AWARD



## CONSTRUCTION EXCELLENCE AWARDS



Builder	Shimizu Corporation
Developer	Irvine Investments Pte Ltd
Principal Consultant	Architects 61 Pte Ltd
Architectural Consultant	Architects 61 Pte Ltd
Structural Consultant	Web Structures Pte Ltd
M&E Consultant	J Roger Preston (S) Pte Ltd
Quantity Surveyor	Langdon & Seah Singapore Pte Ltd
Construction Cost	\$96.5 million
Construction Period	33.0 months
Gross Floor Area	17,177.97 m <sup>2</sup>

# Ardmore Residence

Residential Buildings - \$1,800/m2 & Above Category

CONSTRUCTION EXCELLENCE AWARDS

AWARD



- **ALTERNATE DESIGNS/PRODUCTS:**
  - Converted GRC external elements to PC improved durability and performance with minimal impact to overall aesthetics. It also cut cost by combining the structural & architectural elements
  - Redesigned the core wall reinforcements with minimum rebar eased construction
  - Re-configured the profile of the Mega Columns into one
- **NOTABLE FEATURES:**
  - Precast Concrete and System Formwork had been widely utilized to enhance the constructability
  - Oversized PC panels were produced on site to mitigate the logistic problem especially in hoisting
  - Used of Precast Concrete Formworks (PCF) for external walls and columns eliminated touching up
  - Used of RailScafs (multi-level scaffold) for both structural and architectural works improved safety
  - Used of BIM and 3D design for the curved Precast Facade



# Terrene at Bukit Timah

Residential Buildings - \$1,800/m2 & Above Category

CONSTRUCTION EXCELLENCE AWARDS

AWARD



Builder	Unison Construction Pte Ltd
Developer	Premier Land Development Pte Ltd
Principal Consultant	Consortium 168 Architects Pte Ltd
Architectural Consultant	Consortium 168 Architects Pte Ltd
Structural Consultant	KTP Consultants Pte Ltd
M&E Consultant	Alpha Consulting Engineers Pte Ltd
Quantity Surveyor	Davis Langdon KPK (Singapore) Pte Ltd
Landscape Consultant	Peridian Asia Pte Ltd
Construction Cost	S\$51.5 million
Construction Period	29.0 months
Gross Floor Area	18,615.83 m <sup>2</sup>

# Terrene at Bukit Timah

Residential Buildings - \$1,800/m2 & Above Category

CONSTRUCTION EXCELLENCE AWARDS

AWARD



- **ALTERNATE DESIGNS/PRODUCTS:**

- Precast elements were introduced as much as possible to manage wastage and improve productivity
- Replaced terra-cotta external feature screen and mild steel railings with aluminium type
- Replaced brick wall with drywall
- Replaced Adobe Stones at high wall with granite stone minimised maintenance cost
- Reengineered the new box drain foundation by using the existing CBP wall as drain base support improved timing and reduce additional cost for piling

- **NOTABLE FEATURES:**

- Used BEDEC heavy duty formwork shoring system with integrated access and safety barricade to eliminate unproductive and hazardous external scaffold system for low rise buildings

# Sengkang N4 C11 (Fernvale Foliage)

Residential Buildings – Below \$1,800/m2 Category

## CONSTRUCTION EXCELLENCE AWARDS



## AWARD



Builder	Straits Construction Singapore Pte Ltd
Developer	Housing & Development Board
Principal Consultant	Architects Vista Pte Ltd
Architectural Consultant	Architects Vista Pte Ltd
Structural Consultant	T H Chuah & Partners LLP
M&E Consultant	Rankine & Hill (S) Pte Ltd
Quantity Surveyor	WT Partnership (S) Pte Ltd
Landscape Consultant	Tulin Designs Pte Ltd
Construction Cost	S\$72.0 million
Construction Period	32.0 months
Gross Floor Area	63,042.95 m <sup>2</sup>

# Sengkang N4 C11 (Fernvale Foliage)

Residential Buildings – Below \$1,800/m2 Category

AWARD



## CONSTRUCTION EXCELLENCE AWARDS



- **ALTERNATE DESIGNS/PRODUCTS:**
  - Precast column skin to eliminate external formwork later for grouting
  - Converted cast insitu roof element to precast
- **NOTABLE FEATURES:**
  - Used of 18m high heavy duty scissor lift, mast climbing platforms, boom lift, 58m concrete pump, etc. boosted productivity
  - Used of U-shaped bricks to minimise hacking for piping
  - Installed hanging walkway for safe access to tower crane
  - Used of high impact Green Label products



# Punggol Sails (Punggol West C8)

Residential Buildings – Below \$1,800/m2 Category

CONSTRUCTION EXCELLENCE AWARDS



AWARD



Builder	Ho Lee Construction Pte Ltd
Developer	Housing & Development Board
Principal Consultant	P&T Consultants Pte Ltd.
Architectural Consultant	P&T Consultants Pte Ltd.
Structural Consultant	P&T Consultants Pte Ltd.
M&E Consultant	United Project Consultants Pte Ltd
Quantity Surveyor	Davis Landon KPK (Singapore) Pte Ltd
Construction Cost	\$82.9 million
Construction Period	29.0 months
Gross Floor Area	66,637.35 m <sup>2</sup>

# Punggol Sails (Punggol West C8)

Residential Buildings – Below \$1,800/m2 Category

CONSTRUCTION EXCELLENCE AWARDS

AWARD



- **ALTERNATE DESIGNS/PRODUCTS:**

- Improved MSCP roof design for prevention of killer litter by integrating killer litter shelter with privacy fins and unauthorized access by adding GS spikes
- Improved design to the MSCP crash barrier
- Created a 75mm-100mm fall at drain from planter base to reduce potential flooding at MSCP roof garden
- Enhanced the construction of the entrance box culvert for the existing live HT cables

- **NOTABLE FEATURES:**

- Used pipe jacking for minor sewer works
- Used precast drain for service road
- Re-engineered precast propping method using Hilti:HUS-H Bolt
- Developed a portable lifting machine for lifting 250kg steel railing for the MSCP crash barrier installation to improve productivity and safety



# Punggol West C15 (Punggol Waves)

Residential Buildings – Below \$1,800/m2 Category

## CONSTRUCTION EXCELLENCE AWARDS



## AWARD



Builder	China Construction (South Pacific) Development Co Pte Ltd
Developer	Housing & Development Board
Principal Consultant	ADDP Architects LLP
Architectural Consultant	ADDP Architects LLP
Structural Consultant	DE Consultants (S) Pte Ltd
M&E Consultant	United Project Consultants Pte Ltd
Quantity Surveyor	Langdon & Seah Singapore Pte Ltd
Landscape Consultant	Site Concepts International Pte Ltd
Construction Cost	S\$78.6 million
Construction Period	35.0 months
Gross Floor Area	72,300.00 m <sup>2</sup>

# Punggol West C15 (Punggol Waves)

Residential Buildings – Below \$1,800/m2 Category

CONSTRUCTION EXCELLENCE AWARDS

AWARD



- **ALTERNATE DESIGNS/PRODUCTS:**

- Redesigned house drain to improve on flow to main CE drain
- Improved design of roof garden link bridges to address the potential issue of killer litter
- Changed the massive precast water tank to precast ring water tank due to accessibility restriction of 400/500 ton heavy duty mobile crane in LTA collapse zone

- **NOTABLE FEATURES:**

- Prevented further soil collapse from the high slope beside service road using gravel stone method
- Used left over concrete to cast lintels and C7 drain
- Automated plant watering process eliminated manpower needs to hold water hose during watering
- Improved productivity and safety by preassembled steel roof structure for the drop-off point on ground level first

# Punggol West C15 (Punggol Waves)

Residential Buildings – Below \$1,800/m2 Category

**AWARD**



CONSTRUCTION EXCELLENCE AWARDS



- **NOTABLE FEATURES:**
  - Adopted bolt & nut method over welded joints for the steel structure at the precinct pavilion
  - Improved wall tile detailing over window opening to minimise cracks

# Sengkang N1 C27 (Rivervale Arc)

Residential Buildings – Below \$1,800/m2 Category

AWARD



## CONSTRUCTION EXCELLENCE AWARDS



Builder	Welltech Construction Pte Ltd
Developer	Housing & Development Board
Principal Consultant	ADDP Architects LLP
Architectural Consultant	ADDP Architects LLP
Structural Consultant	DE Consultants (\$) Pte Ltd
M&E Consultant	United Project Consultants Pte Ltd
Quantity Surveyor	Davis Langdon KPK (Singapore) Pte Ltd
Construction Cost	S\$129.1 million
Construction Period	27.0 months
Gross Floor Area	116,825.68 m <sup>2</sup>



# Sengkang N1 C27 (Rivervale Arc)

Residential Buildings – Below \$1,800/m2 Category

CONSTRUCTION EXCELLENCE AWARDS

AWARD



- **ALTERNATE DESIGNS/PRODUCTS:**
  - Created iconic arc-shaped precast columns with different curvatures combining aesthetic and functionality
  - Simplified connection details of steel roof structure for prefabrication and minimised work at height and hot works
  - Changed galvanised steel security screens with cast in fish-tail installation to powder coated aluminium using bolt & nut
- **NOTABLE FEATURES:**
  - Ensured minimum 6 to 7 piling rigs in operation daily, 3 ready-mix suppliers for uninterrupted supply of concrete and completed 1457 nos of piles in 2.5 months
  - Used aluminium formwork and self-climbing formwork to increase productivity
  - Ferrolite partition wall panels were hoisted up during slab construction to minimise usage of the material hoist during architectural stage

# Sengkang N1 C27 (Rivervale Arc)

Residential Buildings – Below \$1,800/m2 Category

AWARD



CONSTRUCTION EXCELLENCE AWARDS



- **NOTABLE FEATURES:**
  - Replaced timber plywood with 3mm thick steel sheet with toe board for building perimeter overhead shelter
  - Replaced turf at void within block with piper improved survivability



# Punggol Crest (Punggol West Contract 9)

Residential Buildings – Below \$1,800/m2 Category

## CONSTRUCTION EXCELLENCE AWARDS

AWARD



Builder	Teambuild Engineering & Construction Pte Ltd
Developer	Housing & Development Board
Principal Consultant	P&T Consultants Pte Ltd
Architectural Consultant	P&T Consultants Pte Ltd
Structural Consultant	P&T Consultants Pte Ltd
M&E Consultant	United Project Consultants Pte Ltd
Quantity Surveyor	Langdon & Seah Singapore Pte Ltd
Construction Cost	S\$85.1 million
Construction Period	32.6 months
Gross Floor Area	69,601.67 m <sup>2</sup>

# Punggol Crest (Punggol West Contract 9)

Residential Buildings – Below \$1,800/m2 Category

CONSTRUCTION EXCELLENCE AWARDS

AWARD



- **ALTERNATE DESIGNS/PRODUCTS:**
  - Changed cast insitu cantilevered roof façade to precast
  - Change precast roof water tank to 2 rings water tank for ease of hoisting
  - Counter proposed to reduce redundancy for minor sewer works
- **NOTABLE FEATURES:**
  - Used Andriod based Mobile Quality Checking System (MQCS) for inspection
  - Precinct pavilion canopy roof was fabricated on ground and launched in 1 operation

# Engineering, Procurement and Construction of Submarine Gas Transmission Pipeline Across West Jurong Channel

Civil Engineering Projects Category

## AWARD



### CONSTRUCTION EXCELLENCE AWARDS



Builder

ED. ZÜBLIN AG, SINGAPORE BRANCH

Developer

Powergas Limited

Principal Consultant

WorleyParsons Pte Limited

Structural Consultant

P Teo Associates Consulting Engineers

Construction Cost

S\$23.0 million

Construction Period

23.0 months

# Engineering, Procurement and Construction of Submarine Gas Transmission Pipeline Across West Jurong Channel

Civil Engineering Projects Category

## AWARD



### CONSTRUCTION EXCELLENCE AWARDS



- **ALTERNATE DESIGNS/PRODUCTS:**

- Changed the original dredging and pipe laying design to submarine tunnel design to eliminate obstruction of shipping and environmental disturbances

- **NOTABLE FEATURES:**

- A dual mode (Earth Pressure Balance & Slurry modes) TBM was used to overcome the potential complications in the highly variable soil condition
- 9 intermediate jacking stations spaced between 100mm to 200mm were constructed to assist with the pipe-jacking
- Horizontal alignment was controlled and monitored using a North-seeking Gyro-case and a Hydrostatic water level system for the tunnel elevation



# Engineering, Procurement and Construction of Primary Jetty at the Singapore LNG Terminal on Jurong Island

Civil Engineering Projects Category

AWARD



## CONSTRUCTION EXCELLENCE AWARDS



Builder

Antara Koh Private Limited

Developer

Singapore LNG Corporation Pte Ltd

Principal Consultant

Kenneth Chong Eng Teik

Structural Consultant

Kenneth Chong Eng Teik

Marine Specialist

AGF Eddie Consultants Pty Ltd

Construction Cost

S\$25.8 million

Construction Period

12.0 months

# Engineering, Procurement and Construction of Primary Jetty at the Singapore LNG Terminal on Jurong Island

Civil Engineering Projects Category

**AWARD**



## CONSTRUCTION EXCELLENCE AWARDS



- **ALTERNATE DESIGNS/PRODUCTS:**

- Omitted of 2 mooring dolphins (from 6) for the Tertiary Jetty with alternate design resulted in significant saving in cost, material and time (4 weeks)
- Optimised the design of the mooring dolphins at the Secondary Jetty minimised potential risk to the sheet pile retaining structure during operation

- **NOTABLE FEATURES:**

- Incorporated Real Time Kinematic (RTK) Global Positioning System (GPS) technology into traditional surveying for the marine piling work improved pile installation productivity and accuracy
- CEMIII-B cement was used for the ready mix concrete to improve concrete quality and durability in the marine environment
- Cryogenic reinforcement was installed for the impounding basin structure in order to sustain the -1680°C low temperature in case of LNG leakage



# NV Residences

Residential Buildings - \$1,800/m2 & Above Category

CONSTRUCTION EXCELLENCE AWARDS



MERIT



Builder	Hyundai Engineering & Construction Co., Ltd
Developer	City Developments Limited / Hong Realty (Pte) Ltd / Hong Leong Holdings Ltd
Principal Consultant	Architects 61 Pte Ltd
Architectural Consultant	Architects 61 Pte Ltd
Structural Consultant	TEP Consultants Pte Ltd
M&E Consultant	Meinhardt (Singapore) Pte Ltd
Quantity Surveyor	Langdon & Seah Singapore Pte Ltd
Construction Cost	S\$170.0 million
Construction Period	35.5 months
Gross Floor Area	64,036.00 m <sup>2</sup>

# Ferrell Residences

Residential Buildings - \$1,800/m2 & Above Category

MERIT



## CONSTRUCTION EXCELLENCE AWARDS



Builder	Chang Hua Construction Pte Ltd
Developer	Premium Land Pte Ltd
Principal Consultant	Architects 61 Pte Ltd
Architectural Consultant	Architects 61 Pte Ltd
Structural Consultant	SCE Consultants (Pte) Ltd
M&E Consultant	Rankine & Hill (S) Pte Ltd
Quantity Surveyor	WT Partnership (S) Pte Ltd
Landscape Consultant	Tierra Design (S) Pte Ltd
Construction Cost	S\$29.2 million
Construction Period	27.0 months
Gross Floor Area	6,718.20 m <sup>2</sup>

# Waterbank at Dakota

Residential Buildings - \$1,800/m<sup>2</sup> & Above Category

MERIT



## CONSTRUCTION EXCELLENCE AWARDS



Builder	Lian Beng Construction (1988) Pte Ltd
Developer	UOL Development (Dakota) Pte Ltd
Principal Consultant	Consortium 168 Architects Pte Ltd
Architectural Consultant	Consortium 168 Architects Pte Ltd
Structural Consultant	TEP Consultants Pte Ltd
M&E Consultant	CPG Consultants Pte Ltd
Quantity Surveyor	CPG Consultants Pte Ltd
Construction Cost	S\$144.0 million
Construction Period	36.0 months
Gross Floor Area	60,163.95 m <sup>2</sup>

# The Minton

Residential Buildings - \$1,800/m<sup>2</sup> & Above Category

CONSTRUCTION EXCELLENCE AWARDS

MERIT



Builder	QingJian International (South Pacific) Group Development Co., Pte Ltd
Developer	Peak Garden Pte Ltd
Principal Consultant	DP Architects Pte Ltd
Architectural Consultant	DP Architects Pte Ltd
Structural Consultant	TEP Consultants Pte Ltd
M&E Consultant	United Project Consultants Pte Ltd
Quantity Surveyor	Langdon & Seah Singapore Pte Ltd
Landscape Consultant	Salad Dressing Pte Ltd
Construction Cost	\$\$292.9 million
Construction Period	40.5 months
Gross Floor Area	123,920.00 m <sup>2</sup>

# Vista Residences

Residential Buildings - \$1,800/m2 & Above Category

MERIT



## CONSTRUCTION EXCELLENCE AWARDS



Builder	Rich Construction Company Pte Ltd
Developer	FAR EAST ORGANIZATION
Principal Consultant	RDC Architects Pte Ltd
Architectural Consultant	RDC Architects Pte Ltd
Structural Consultant	DE Consultants (S) Pte Ltd
M&E Consultant	Megatrends Consulting Engineers
Quantity Surveyor	Davis Langdon KPK (Singapore) Pte Ltd
Landscape Consultant	Ong&Ong Pte Ltd
Construction Cost	S\$80.7 million
Construction Period	43.0 months
Gross Floor Area	33,426.64 m <sup>2</sup>



# Woodlands N8 C20 (Treegrove@Woodlands)

Residential Buildings – Below \$1,800/m2 Category

## CONSTRUCTION EXCELLENCE AWARDS



**MERIT**



Builder	China Construction (South Pacific) Development Co Pte Ltd
Developer	Housing & Development Board
Principal Consultant	P&T Consultants Pte Ltd
Architectural Consultant	P&T Consultants Pte Ltd
Structural Consultant	P&T Consultants Pte Ltd
M&E Consultant	United Project Consultants Pte Ltd
Quantity Surveyor	Langdon & Seah Singapore Pte Ltd
Construction Cost	\$95.0 million
Construction Period	38.0 months
Gross Floor Area	76,041.87 m <sup>2</sup>



# CONTRACT 902 – DESIGN, CONSTRUCTION AND COMPLETION OF PROMENADE STATION AND ASSOCIATED TUNNELS FOR DOWNTOWN LINE STAGE 1

Civil Engineering Projects Category

**MERIT**



## CONSTRUCTION EXCELLENCE AWARDS



Builder	SHANGHAI TUNNEL ENGINEERING CO (SINGAPORE) PTE LTD
Developer	Land Transport Authority
Principal Consultant	Parsons Brinckerhoff Pte Ltd
Architectural Consultant	AEP CONSULTANTS
Structural Consultant	Parsons Brinckerhoff Pte Ltd
Construction Cost	S\$231.0 million
Construction Period	62.0 months

# Construction Excellence Awards

AWARD



PROJECT NAME	CATEGORY	BUILDER
Asia Square Tower 2	Commercial/Mixed Development	Hyundai Engineering & Construction Co., Ltd
Carlton City Hotel (Tanjong Pagar)	Commercial/Mixed Development	Kajima Overseas Asia Pte Ltd
Holiday Inn Express Singapore Orchard Road	Commercial/Mixed Development	Kienta Engineering Construction Pte. Ltd.
THE METROPOLIS	Commercial/Mixed Development	Lum Chang Building Contractors Pte Ltd
Spectra Secondary School	Institutional Buildings	Kwan Yong Construction Pte Ltd
Academia	Institutional Buildings	Kajima Overseas Asia Pte Ltd
NUH Medical Centre	Institutional Buildings	Penta-Ocean Construction Co., Ltd.
The Glyndebourne	Residential Buildings - \$1,800 / m2 and above	Tiong Seng Contractors (Pte) Ltd
CUBE 8	Residential Buildings - \$1,800 / m2 and above	Dragages Singapore Pte Ltd
Boulevard Vue	Residential Buildings - \$1,800 / m2 and above	China Construction (South Pacific) Development Co Pte Ltd
TreeHouse Condominium	Residential Buildings - \$1,800 / m2 and above	Tiong Seng Contractors (Pte) Ltd
The Interlace	Residential Buildings - \$1,800 / m2 and above	Woh Hup (Private) Limited
Marina Bay Suites	Residential Buildings - \$1,800 / m2 and above	Woh Hup (Private) Limited
Hundred Trees Condominium	Residential Buildings - \$1,800 / m2 and above	Tiong Seng Contractors (Pte) Ltd
Ardmore Residence	Residential Buildings - \$1,800 / m2 and above	Shimizu Corporation

## AWARD

[illegible]

# Construction Excellence Awards

**MERIT**[illegible]