

★ Platinum

ARTE@Thomson

(Residential Non-Landed Buildings Category $\geq 25,000$ m²)

Architectural Consultant
SCDA Architects Pte Ltd

Client
City Developments Limited

Structural Consultant
LSW Consulting Engineers Pte Ltd

Construction Cost
S\$160 million

M&E Consultant
Conteem Engineers Pte Ltd

Gross Floor Area
51,507 m²

Builder
Dragages Singapore Pte Ltd

The ARTE @ Thomson is a residential project consisting of two blocks of 36-storey residential towers with a total of 336 apartments, two levels of carparks and an extensive range of facilities.

Key Features:

- Cast in-situ vertical walls with horizontal precast elements like planks, beams, bay windows and planters were adopted, together with prefabricated bathroom units which were integrated into the cycle time, enabling the project to achieve a seven-day cycle.
- Precasting was done on site to eliminate logistics problems. The number of precast moulds used was kept to a minimum as moulds could be combined, thus maximising mould usage.
- External cantilevered façade platform, stair platform, working platform and internal shaft platforms eliminated full height scaffolding while providing the required safety at the same time.
- Dry wall partition system was used extensively, which contributed to labour efficiency, waste minimisation, better-finished quality and shorter construction time. Structural slabs were also cast up to finished level that eliminated conventional screeding works.



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Parc Emily

(Residential Non-Landed Buildings Category $\geq 25,000$ m²)

Architectural Consultant
ADDP Architects LLP

Client
City Developments Limited /
TC Development Pte Ltd

Structural Consultant
LSW Consulting Engineers (Pte) Ltd

Construction Cost
S\$59.8 million

M&E Consultant
United Projects Consultants Pte Ltd

Gross Floor Area
25,153 m²

Builder
Tiong Seng Contractors (Pte) Ltd



Parc Emily Condominium is a residential project that consists of a total of five blocks of 8-storey apartments with a total of 295 dwelling units and communal facilities including a clubhouse and swimming pool.

Key Features:

- Construction time was reduced by the implementation of raft foundation and a single layer of ground anchors in place of conventional piling and rows of anchors which resulted in speedy construction and reduced risks for workers.
- High level of precast components such as precast external wall panels, refuse chutes, bay windows and planter boxes were adopted for ease of construction.
- Use of prefabricated components helped to achieve higher productivity. For example, dry walls eliminated the need for plastering works while prefab bathroom units eliminated numerous co-ordination of wet trades at site.
- Use of system formwork for the flat plate construction resulted in simpler and faster construction as well as better quality finishes.

St. Regis Hotel & Residences

(Mixed Development Buildings Category)

Architectural Consultant

RSP Architects Planners & Engineers (Pte) Ltd

Client

City Developments Limited

Structural Consultant

RSP Architects Planners & Engineers (Pte) Ltd

Construction Cost

S\$300 million

M&E Consultant

Squire Mech Pte Ltd

Gross Floor Area

77,125 m²

Builder

Kajima Overseas Asia Pte Ltd /
Tiong Seng Contractors (Pte) Ltd

St. Regis Hotel and Residences is a unique mixed development comprising a block of 20-storey prestigious hotel and two blocks of 23-storey luxurious strata apartments.

Key Features:

- Unitised curtain wall and ceramic cladding system enabled increased efficiency in off-site manufacturing, facilitating on-site installation which required less labour.
- Adoption of dry wall system and prefab bathrooms helped to achieve greater speed, faster construction timeframe and less wet trades on site.
- Pre-finished interior finishes including internal decorative wall cladding and off-site paint spraying contributed significantly to buildability with increased productivity on site for other trades.
- Use of flat plate with precast perimeter structural and non-structural elements helped to eliminate the need for external scaffold. Tableform was used for the casting of the flat plate and jumpform for the lift core walls and staircase walls, which further helped to speed up construction time.



The Sail @ Marina Bay

(Mixed Development Buildings Category)

Architectural Consultant

Team Design Architects Pte Ltd

Client

Glengary Pte Ltd

Structural Consultant

Meinhardt (Singapore) Pte Ltd

Construction Cost

S\$289 million

M&E Consultant

Meinhardt (Singapore) Pte Ltd

Gross Floor Area

118,182 m²

Builder

Dragages Singapore Pte Ltd

The Sail@Marina Bay consists of 1,111 apartments over two blocks of 70-storey and 63-storey buildings, with an elevated carpark of 700 lots and modern communal facilities like a club house, swimming pools, tennis courts, etc.

Key Features:

- A 28-metre deep, 3-ring circular diaphragm wall called "The Peanut" was used as the temporary supporting structure for the basement excavation. This strut-free diaphragm wall sped up the excavation works significantly and was also used as formwork for the raft foundation.
- Due to the extensive usage of precast elements for superstructure works, the project adopted site precasting which helped to accelerate the speed of superstructure construction and enabled a five-day cycle for each tower to be achieved.
- Use of modular metal formwork system, having the right proportion of precast elements with cast in-situ components and a re-designed layout of the units' structure, helped to improve construction efficiency and quality.
- Modular working platforms were adapted to suit the curved facades of the development. Articulated column formworks also allowed for easy column casting at varying angles.
- The façade was entirely clad in prefabricated unitised curtain wall panels, thus enabling speedy installation.



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Henderson Waves

(Civil Engineering Category)

Architectural Consultant
RSP Architects Planners
& Engineers (Pte) Ltd

Structural Consultant
RSP Architects Planners
& Engineers (Pte) Ltd

M&E Consultant
Squire Mech Pte Ltd

Builder
Evan Lim & Co Pte Ltd

Client
Urban Redevelopment Authority

Construction Cost
S\$12.7 million

The Henderson Waves bridge is located over Henderson Road and links the two southern ridges of Mount Faber and Telok Blangah Hill. The bridge is 274m long and 8m wide and is the highest pedestrian bridge in Singapore at 36m above Henderson Road.

Key Features:

- Maximum off-site prefabrication of the bridge components greatly reduced labour intensive site work and material wastages.
- Prefabricated steel pylons with bolted steel connections helped to increase speed of construction and to showcase the aesthetics of the prefabricated components.
- To minimise site welding, each arch of the bridge was fabricated in segments in the factory which facilitated transportation, lifting tonnage and ease of handling on site.
- The complex, doubly-curved portions of the timber deck sitting on top of the steel structure were fabricated in modules for ease of transportation and handling.
- Safety of the public and workers were ensured through comprehensive temporary towers with concrete platforms to protect passing vehicles and allowing workers to conduct their work in a safer environment.

★ Gold



The Solitaire

(Residential Non-Landed Buildings Category < 25,000 m²)

Architectural Consultant
Team Design Architects Pte Ltd

Structural Consultant
KTP Consultants Pte Ltd

M&E Consultant
Squire Mech Pte Ltd

Builder
Poh Lian Construction Pte Ltd

Client
City Developments Pte Ltd

Construction Cost
S\$41.4 million

Gross Floor Area
11,089 m²

The Solitaire is a condominium housing development comprising three blocks of 12-storey residential blocks with a total of 59 apartment units and four basement carparks, swimming pools and communal facilities.

Key Features:

- Pre-bored press grout spun piles were used to minimise lifting operations and use of machinery and offered a foundation system that was efficient, silent and vibration-free.
- The top-down construction method was adopted for the four-level basement carparks to accomplish a safe and efficient temporary earth retaining system that increased productivity.
- Flat plate system constructed using system formwork and extensive use of precast elements helped to achieve high buildability and increased productivity.



Dakota Residences

(Residential Non-Landed Buildings Category \geq 25,000 m²)

Architectural Consultant
Architects 61 Pte Ltd

Structural Consultant
KTP Consultants Pte Ltd

M&E Consultant
Alpha Consulting Engineering Pte Ltd

Builder
Dragages Singapore Pte Ltd

Client
Rivershore Pte Ltd (JV Between Ho Bee Investment Ltd & ChoiceHomes Investments Pte Ltd)

Construction Cost
S\$131 million

Gross Floor Area
40,605 m²

Dakota Residences comprises five blocks of 19-storey residential buildings (total 348 units) with basement car parks, level one carpark and ancillary facilities.

Key Features:

- The steel formwork system adopted for walls and columns provided flatness of concrete surface with good alignment that required no plastering works. The in-built safety platform with railing, ladder and adjustable props also helped to provide a safer working environment for workers.
- Customised working platform system enveloping the building facilitated the construction of the building facade and this was crane-lifted to the next level as the construction work progressed.
- Adoption of special formwork system and extensive use of precast components such as planter boxes, ledges, slabs, beams and staircases, together with systematic planning and control on site were key to the project achieving high productivity and quality concrete surface finishes.



City Square Residences

(Residential Non-Landed Buildings Category \geq 25,000 m²)

Architectural Consultant
ONG&ONG Architects Pte Ltd

Structural Consultant
Meinhardt (Singapore) Pte Ltd

M&E Consultant
Parsons Brinckerhoff Pte Ltd

Builder
Woh Hup Pte Ltd

Client
City Developments Ltd

Construction Cost
S\$176 million

Gross Floor Area
100,485 m²

City Square Residences is a development that consists of two 28-storey towers, one 29-storey tower and three 30-storey towers of apartment blocks to accommodate a total of 910 residential units, and a three-storey basement carpark together with ancillary facilities on an environmental deck.

Key Features:

- Original square basement was re-configured to a 126m diameter circular basement which consisted of a strut-free diaphragm retaining wall system coupled with capping and two-layer ring beams. This system was robust, safe and allowed ease in excavation works, thereby enhancing constructability and resulting in higher productivity.
- Adoption of a hybrid pre-cast and in-situ construction methodology such as precast planks and precast beams with in-situ vertical elements ensured an optimum combination in which the speed and quality of precast are combined with the economy and robustness of in-situ construction.
- Pre-fabricated bathroom units complete with finishes and fittings resulted in high productivity, good quality control of workmanship, easier site coordination and less wastage and debris on site.

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Oceanfront @ Sentosa Cove

(Residential Non-Landed Buildings Category \geq 25,000 m²)

Architectural Consultant

Axis Architects Planners Pte Ltd

Structural Consultant

KTP Consultants Pte Ltd

M&E Consultant

Squire Mech Pte Ltd

Builder

Ssangyong Engineering & Construction Co., Ltd

Client

TC Development Pte Ltd (JV between City Developments Limited & TID Pte Ltd)

Construction Cost

S\$133 million

Gross Floor Area

45,789 m²

The Oceanfront @ Sentosa Cove is a new upscale residential development which consists of 264 residential units, along with luxury penthouses.

Key Features:

- Use of flat plate system together with tableform for construction helped to reduce labour demand and improved productivity.
- Use of prefabricated elements in the structural components and architectural features offered fast construction and provided better quality finishes. These included precast staircases, balconies, walls, prefabricated bathroom units and drywall.
- Prefabricated rebars were used to further increase productivity where total prefabrication for structural works was not completely feasible.

★ Gold

Queenstown RC24

(Residential Non-Landed Buildings Category \geq 25,000 m²)

Architectural Consultant

Surbana International Consultants Pte Ltd

Structural Consultant

Surbana International Consultants Pte Ltd

M&E Consultant

Surbana International Consultants Pte Ltd

Builder

Straits Construction Singapore Pte Ltd

Client

Housing & Development Board

Construction Cost

S\$106 million

Gross Floor Area

102,504 m²

This public housing development comprises three blocks of 40-storey, one block of 10/34-storey residential building (828 units) and one block of multi-storey car park with community facilities.

Key Features:

- Use of lightweight partition walls between bedrooms allowed for ease of handling and installation. The method of installation is a cleaner alternative to the traditional brick wall, requiring only bedding material and welding works for the connection joints.
- High level of precast construction was adopted to enhance productivity. Precast components included beams, slabs, columns and facade.
- Mast climbing platform was used for architectural finishing works to the external walls. It enabled access to 90% of the external walls, with the remaining 10% accessible by gondolas.





Marina Bay Financial Centre Commercial Phase 1

(Commercial and Office Category)

Architectural Consultant
DCA Architects Pte Ltd

Structural Consultant
Meinhardt (Singapore) Pte Ltd

M&E Consultant
Meinhardt (Singapore) Pte Ltd

Builder
Kajima Overseas Asia Pte Ltd
& Tiong Seng Contractors (Pte) Ltd
joint venture

Client
Cheung Kong (Holdings) Limited, Hongkong Land (Singapore) Pte Limited and Keppel Land Limited

Construction Cost
S\$697 million

Gross Floor Area
188,797 m²

Marina Bay Financial Centre (MBFC) Phase 1 development consists of a 33-storey and a 50-storey office towers, a two-storey retail block and a basement Underground Pedestrian Mall (UPN) with retail spaces and carparks.

Key Features:

- Precast planks in lieu of cast-in situ RC floor for all the office floors were adopted which significantly reduced propping requirements, leading to high buildability.
- A dry wall construction approach was adopted in which no brick works was used unless necessary. This was a contrast to traditional plaster walls which need extensive application and finishing.
- The use of climbing formwork and extensive use of prefabricated reinforcement for all slabs, beams and columns helped to reduce labour demand and improved constructability.



Bedok Town Central C6 (Linear Green @ Bedok)

(Mixed Development Buildings Category)

Architectural Consultant
Surbana International Consultants
Pte Ltd

Structural Consultant
Surbana International Consultants
Pte Ltd

M&E Consultant
Surbana International Consultants
Pte Ltd

Builder
China Construction (South Pacific)
Development Co Pte Ltd

Client
Housing & Development Board

Construction Cost
S\$94 million

Gross Floor Area
105,500 m²

Bedok Town Central C6 (Linear Green @ Bedok) is a high-density public housing development with commercial and communal facilities, comprising ten high-rise residential blocks with 958 dwelling units, two multi-storey carparks and commercial facilities which include one eating house, one supermarket and eight shops.

Key Features:

- Extensive use of precast components such as beams, walls, columns, slabs and household shelters have facilitated the construction process and changed the construction works into assembly-like activities that used fewer workers.
- The architectural layout was designed based on a modular concept. This design catered for standardisation of columns, beams and wall panels to facilitate precasting, as well as maximisation of block and unit types to enhance buildability.