

Overseas Segment

< New order: July 2006 >

Seated at the ultimate prime site of Singapore's commercial and shopping artery, at the junction of Orchard Road and Paterson Road which marks the gateway to Orchard Road, the Orchard Turn Development will tower over its neighbours at 218 m high. Dubbed as the 'Crown Jewel' of Orchard Road, the Orchard Turn scheme consists of two primary elements featuring a vibrant retail podium and an iconic high-rise tower.

At the heart of the scheme is an eight-level retail centre, with four levels above ground and four below. Much of the retail podium has active, double-height frontage along Orchard Road and Paterson Road providing ample opportunity for signature flagship stores from the world's leading retailers. Large media walls on the retail centre's façade front onto a new public square for the nation.

A public art gallery is integrated within the retail centre, symbolically and physically breaking down barriers between high culture and the public.

Adjacent to the podium is a 56 level residential tower crowned with a magnificent double-height public observation deck.

The entire building is built above the Orchard Road MRT (metro) stop, one of the country's busiest.



Orchard Turn Project / Singapore

Construction period: 38 months from July 2006 to August 2009

Client: Orchard Turn Developments Pte Ltd.

Basic design: RSP Architects Planners & Engineers Pte Ltd.

Structural design and construction: Penta-Ocean Construction Co., Ltd.

Construction summary:

- Land area: 21,700 m²
- Total floor area: 190,000 m²
- Construction: RC-structured, 4 basement levels, 56 stories above ground (218 meters at its highest point)
- Application: Residential and commercial building use

< On Going >

Keppel Marina Club / Singapore

Construction period: February 2006 to August 2008

Client: Keppel Bay Pte Ltd

Design and administration:

- Architect: Alfred Wong Partnership Pte Ltd
- Civil & Structural: T Y Lin International Pte Ltd
- M&E: Beca Carter Holdings & Ferner (SE Asia) Pte Ltd
- QS: Davis Langdon & Seah Singapore Pte Ltd
- Landscape: CICADA Pte Ltd

Construction summary:

- Structure: reinforced concrete (building frame) and steel (roof) structure with one basement level and two floors aboveground
- Ground area: 9,383 m²
- Total building floor space: 11,587 m²
- Marine anchorage area: 43,989 m²
- Breakwater area: 1,718 m²

Keppel Marina Club is being constructed on Keppel Island and its environs, an area undergoing development across a channel from Sentosa Island, a well-known tourist attraction. The club is currently under construction in parallel with a cable-stayed bridge between Keppel Island and the main island, construction of which we had started in advance of the Keppel Marina Club construction.

The clubhouse and marina facilities for anchoring vessels are the main buildings being constructed in the project. The clubhouse will feature a composite-structure roof that consists of an aluminum dome and an envelope structure. The anchoring facilities in the marina will have capacity for 75 vessels, ranging in size from 40 to 200 feet.

The construction site is located next to a terminal for large passenger vessels. Once the cable-stayed bridge and entire Keppel Marina Club are completed, the large passenger boats, the bridge with its ship's mast design, yachts of diverse sizes, and cruisers and other vessels will produce a new scene in Singapore.



VivoCity / Singapore

Construction period: January 2004 to October 2006

Client: Mapletree Investments Pte. Ltd.

Design and administration: DP Architects and Ito Toyo Architectural Design Office

Construction summary:

- Ground area: 89,140.6 m²
- Total floor space: 286,850 m²
- Use: A shopping mall, restaurants, entertainment facilities and parking lots
- Floor height: two basement and three above-ground levels (seven-story parking tower)
- Structure: reinforced concrete (post-tensioning)

VivoCity, Singapore's largest commercial and entertainment complex, was completed in early October 2006 in the HarbourFront area of the island nation, across the narrow strait from Sentosa Island. The complex features exquisite architectural designs and is the work of renowned Japanese architect Toyo Ito.

The design concept for VivoCity is "surfing." Elegant curves characterize all buildings in the complex. In particular, "surf roofs" undulate as they overlap each other, and gigantic, wave-like "feature walls" extending from the roofs and arranged on the north and east sides of the complex grab the attention of visitors.

We conducted repeated studies and trials to successfully embody the designer's aim of "expressing unrestrained curves with concrete." We succeeded in embodying this design concept with techniques that included the use of the fiber-reinforced mortar spraying method for the feature walls.

A subway station adjoins the complex on the north side. We also constructed the building for this station. Constructing such a large facility above an existing subway line was an enormous challenge.

Creation of a Man-made Tidal Flat in the Gulf of Kuwait

Red tide and fish deaths have reached epidemic proportions around the Gulf of Kuwait. Concerned parties led by the Kuwait Environment Public Authority are now undertaking activities to improve the marine environment in the region.

As part of the "model project for cooperation among oil-producing and gas-producing countries," a consortium including Penta-Ocean Construction built a sea-area monitoring system, and conducted demonstration experiments for environmental improvement using a man-made tidal flat.

The Japan External Trade Organization (JETRO) is undertaking this project, under contract for the Ministry of Economy, Trade and Industry, to transfer Japanese environmental technologies to Kuwait.

Penta-Ocean Construction formed a man-made tidal flat and installed monitoring buoys in the project, making practical use of the expertise in natural environment rehabilitation it has acquired over a number of years.

