

# Penny's Bay Phase 1 and 2 – Hong Kong



*An engineering feat for viaducts erection  
under confined working space*



▲ Erecting precast segments for the first two spans above Hong Kong Airport Express Rail Lines by overhead girders during the nights

Construction of several small viaducts. Three-span viaducts crossing above the existing airport rail link and below an existing expressway with very little room in which to work.

Typical segments: 15m wide, 2.5m long, 60t. To carry out erection, a special overhead launching girder was developed based on the re-use of two existing under slung girders. This produced a system that was able to fit within the very tight spatial

constraints of the site. Segments were delivered from below, adjacent to the railway track, and lifted up into position by the winch on the launching girder.

In total the 80 segments were erected in four months. The second phase structure was up to six decks wide over six spans.

Given the flat area, the relatively small number of segments, the low level of the viaduct and the good ground conditions, the spans

were erected on false work. In total, 547 segments forming the 41 spans were erected in seven months.

▼ Precast segments suspended above rail tracks



## Scope of works performed

- Design & supply of casting cell formwork
- Geometry control & casting of match cast segments
- Supply, deliver and erect precast segments
- Supply & install PT
- Supply & install bearings & movement joints





**PROJECT**

CV/2000/09 – Infrastructure for Penny's Bay Development, Contract 1

**OWNER**

Civil Engineering & Development Dept., Hong Kong SAR

**MAIN CONTRACTOR**

China State Construction Engineering (HK) Ltd.

**ENGINEER**

Maunsell Consultants Asia Ltd.

**VSL ENTITY**

VSL Hong Kong Ltd.

**DATE**

2006



▲ Segments were delivered from below, adjacent to the railway track



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