

# Deep Bay Link - North / Segments - Hong Kong



*Precast segmental erection of twin decks with 3 overhead gantries.  
Segments delivered at ground level.*



▲ Launching gantry on twin decks of Deep Bay Link viaduct

Deep Bay Link is a dual 3-lane highway with a total length of about 5.4-kilometre, extending from Ngau Hom Shek in the north near the shoreline of Deep Bay to Lam Tei in the south. Most of the highway is in the form of viaducts which cross the undulating rural landscape.

Typical viaduct structures consist of series of parallel pre-cast segmental spans of 40m length,

## Scope of works performed

- Pre-cast segmental erection
- Balanced cantilever from traveler construction Power washing of precast panels
- Transportation of segments from waterfront to the site
- Supply and installation of post-tensioning components
- Supply and installation of bearings and movement joints

each formed of 14 segments. Two different types of decks are: the main viaducts consisting of twin decks with segments of 15m width and the ramps and merging zones which consist of two or four decks of spans with segments between 8.3m, and 11.6m.

Segments weigh from 40 to 80 tonnes. At the Lam Tei end of the project, series of 75m span cast in-situ cantilevers were to be constructed.

VSL was awarded the subcontract for pre-cast segmental erection works and balanced cantilever form traveler construction.

VSL's scope of works also included transportation of segments from waterfront to the site, supply and installation of all post-tensioning components, bearings and movement joints.

For the pre-cast segmental erection works, VSL used three overhead gantries, capable of receiving segments delivered at ground level directly. The "span by span" erection method was used. In addition to the gantry operations, a shoring system was also utilized to erect the smaller segments and ramps using cranes.



▲ The chords of the launching gantry are 85m long, twice a span length

Of the three overhead erection girders, two (C1 & C2) were newly designed and fabricated by VSL for the project while the 3rd (AB) was recycled from the Penny's Bay contract C1 project. Typically the girders were capable of achieving a 4-shift cycle per span.

Segment transportation and erection work Started in June 2004 and was completed in September 2005. All segments (3046 numbers) were erected in a period of 14 months with a peak erection of 1 span per day being achieved on the site.



▲ 14 pre-cast segments for each span

▼ A 40m-long span



▼ The girders were capable of achieving a 4-shift cycle per span



**OWNER**  
HKSAR Highways Department

**ENGINEER**  
Ove Arup & Partners Hk Ltd.

**MAIN CONTRACTOR**  
Gammon Construction Ltd.

**VSL Entity**  
VSL Hong Kong Ltd



▲ Segments delivery at ground level

▼ Span erection by crane on scaffold system for smaller segments



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