

Project identification

Shenzhen - Zhongshan Crossing, China

Type of project

Parallel special study for super-long tunnel



Client

Advanced Work Office for ShenZhong Crossing Project

In co-operation with

Project assignment

Country

Peoples Republic of China

Location

Zhongshan

Project duration

2011-2012

Project phase

Completed

Construction cost

n.a.

Consultancy fee

EURO 365,000
(excl. VAT)

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Project description

The Shenzhen-Zhongshan link is located in the core area of the middle stream of Pearl River, which is about 30km to Hu-Men Bridge in the north and about 40Km to the Hong Kong Zhuhai Macau Bridge (HZMB) in the south, and connects the Shenzhen Economical Special Zone with Zhongshan and Jiang-Men. This link starts from He-Zhou Interchange (connection part of Ji-He expressway and Guangzhou-Shenzhen Highway) and connects with Ji-He expressway in the east, crossing the Pearl River Estuary, and landing at Xin-Long Interchange of Zhongshan City in the west (the connection part of Beijing-Zhuhai express way and Zhong-Shan---Jiang-men expressway), and connected with the Zhongshan-Jiang-Men expressway, the link is about 50km and of which over 20km is under marine conditions. The subject of the parallel study however, focussed on the 15km wide section that includes the Fan-Shi and Ling-Ding channels. Over this section, the Link required 2 x 4 traffic lanes.

The alternatives were as follows:

- (1) A1 (full Bridge from East to West);
- (2) A2 (Fan-Shi Channel Bridge and Ling-Ding Channel Tunnel);
- (3) A3 (Fan-Shi Channel Tunnel and Ling-Ding Channel Bridge);
- (4) A4 (Full Tunnel from East to West).

For the tunnel sections, the immersed tunnel, bored tunnel and mined tunnel construction methodologies were to be compared for each of the above tunnel sections, where the lengths varied between approximately 6km and 15km.

Scope of work

The TEC Scope of services covered the evaluation of the immersed tunnel, bored tunnel and mined tunnel construction methodologies for the 3 tunnel options, including the artificial islands.

Sub-report 1; Ventilation & Safety, Alignment and Cross-section

Sub-report 2; Tunnel Concept & Evaluation (identification of the preferred construction methodology for each alternative)

Sub-report 3; Comprehensive evaluation (identification of the preferred alternative)

Sub-report 4; 2 x 3 Traffic Lane option