



The Construction of Hong Kong-Zhuhai-Macao Bridge

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Abstract

The Hong Kong – Zhuhai – Macao Bridge (HZMB) is located at the Pearl River Estuary on the south of China, It is the longest sea-crossing infrastructure made of island, tunnel and bridge. It links Hong Kong in the east with Zhuhai-Macao in the west with a total length of 55 km. The HZMB was built according to the highway standard of due three lanes. It has a design life of 120 years to meet the Hong Kong standard that is the first in China Mainland. The HZMB has greatly improved traffic conditions on the east and west sides of the coast of the Pearl River Estuary and strengthened the communication, transportation, and economic integration of the three regions, thus accelerating the formation of the Guangdong-Hong Kong-Macao Greater Bay Area. This paper outlines the key construction technologies and strategies used in HZMB to provide references for the design and construction of other mega-projects in China or abroad.

Keywords: Hong Kong-Zhuhai-Macao Bridge; Artificial Island; Immersed Tunnel; Sea-crossing Bridge; Construction.

1 Introduction

The 55-km-long Hong Kong-Zhuhai-Macao Bridge is the longest sea-crossing bridge made of island, tunnel and bridge in the world, which consists of a six-lane highway connecting Hong Kong with Zhuhai and Macao at the mouth of the Pearl River Estuary in China, as shown in Figure 1. The project was completed in February 2018 and was opened to traffic in October 2018. The HZMB had improved traffic conditions on the east and west

sides of the coast of the Pearl River Estuary and strengthened the communication, transportation, and economic integration of the three regions, thus accelerating the development of the Guangdong-Hong Kong-Macao Greater Bay Area [1-2].

The HZMB main bridge has a length of 29.6 km, The tunnel is approximately 6.7km in length, with 2 artificial islands approx. 625m long and the immersed tunnel part approx. 5.7km long and at about 20m below the sea bed. The immersed