



Hong Kong-Zhuhai-Macao Bridge, Hong Kong Special Administrative Region (HKSAR): Design and construction of 9km of precast segmental twin deck bridges

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Summary

The Hong Kong-Zhuhai-Macao Bridge is a 9 km long dual 3-lane road viaduct, which is the Hong Kong part of a 30km long fixed link from Hong Kong to Macao and Zhuhai. This project had been awarded by Highway Department of Hong Kong to a Joint Venture formed by Dragages Hong Kong, China Harbour Engineering Company and VSL Hong Kong in 2012 as a design/build type contract. The work is presently ongoing and is scheduled to be completed by 2016.

The viaduct provides the link from the Scenic Hill next to Hong Kong's International Airport on Chek Lap Kok Island to HKSAR's border with China in the Pearl River Delta.

This presentation focuses on the design and construction aspects of the viaduct, whose entire deck is made up of precast segments to cope with high durability requirements, the offshore nature of the project and a tight construction schedule.



Picture 1: Artist's impression of viaduct in the Airport Channel

1. Introduction

The viaduct can be divided into three parts. Starting from the East it does first run along the Southern sea wall of the Chek Lap Kok Island (for general layout refer to Figure 1) with spans of up to 65m. In this area the twin deck is generally tied into cross beams with a pair of columns. It subsequently moves then into the Airport Channel, which is the waterway between Chek Lap Kok and Lantau Island. Here the viaduct is made up of a series of large span structures with typical spans of 165m and 180m to minimize visual impact in this environmentally sensitive area. In the most Western part of the project the viaduct goes with typical spans of up to 75m over the open