

## Hong Kong Zhuhai Macao Bridge – Conceptual Design of Bridges

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### Summary

The bridges on the HKZMB comprise of approximately 22.9km of bridges in Chinese Mainland waters and approximately 9 km of bridges in Hong Kong waters. The concept and design development of the bridges on the Chinese Mainland waters were undertaken jointly by the Chinese consultant HPDI and ARUP, and in Hong Kong waters by ARUP. There will be 4 navigation channel bridges on the crossing and the Jiuzhou Bridge near Zhuhai is set to become the iconic face of the crossing. The paper will describe the initial concept and development of the design of the bridges that were taken forward for implementation with particular emphasis on the Jiuzhou Bridge.

**Keywords:** Bridge, Conceptual design

### 1. Introduction

Infrastructure plays a key and vital role in the economic development and well-being of a region or country. In many parts of the world waterways whether wide rivers, bays and estuaries have meant large detours and/or use of ferries thus severely hindering the movement of people and goods and limiting economic development. This has led to the bridging of these waterways with road and rail bridges and since the 1990's several large sea-crossing bridges have been built mainly in the Far-East. The methods of construction have varied for these crossings but the driver has invariably been fast construction with pre-fabricated elements, and design for ease of inspection and maintenance.

The Hong Kong Zhuhai Macao Bridge is one such bridge (Fig 1) linking Hong Kong on the east side of the Pearl River delta with Zhuhai and Macao on the west side of the delta



Fig 1 : Hong Kong Zhuhai Macao Bridge