



## Major Bridge Development in Hong Kong—Past, present and future

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### Summary

The first “modern” type of vehicular bridge was built in Hong Kong in the 1920s. The need for an efficient transportation system to cope with population growth and enable economic development has demanded the construction of more and more bridges since the middle of the 20th century. By 2007, Hong Kong had a total of about 1 300 vehicular bridges. Four of these bridges, including the Tsing Ma Bridge, Kap Shui Mun Bridge, Ting Kau Bridge, and the cable-stayed bridge on the Hong Kong-Shenzhen Western Corridor, are considered to be major bridges supported by cables. Currently, the Stonecutters Bridge on Route No. 8 is under construction and is expected to be completed in late 2009. At the same time, the Hong Kong-Zhuhai-Macau Bridge will be in its detailed design stage soon. Whilst efforts have been made by bridge builders to construct these giant structures, the upkeeping of these valuable assets at a high standard and ensuring their continuous functioning and performance during their intended lifespans will be another important task for bridge engineers. Wind and structural health monitoring system will play a key role in this respect.

**Keywords:** Tsing Ma Bridge, Kap Shui Mun Bridge, Ting Kau Bridge, Stonecutters Bridge, Hong Kong-Zhuhai-Macau Bridge and Wind and structural health monitoring system

### 1. Introduction

Looking back in history, Hong Kong began in the middle of the 19th century as a fishing village where one could hardly find any bridges on what Lord Palmerston (the then British Foreign Secretary) had disparagingly described as “a barren island, with hardly a house upon it”. Subsequently, Hong Kong started to develop into an industrial and manufacturing centre after the Second World War. Transportation networks were also developed to cope with ever-increasing economic and social activities. More and more bridges have since been built. To transform Hong Kong from an industrial city to an international financial centre in the late 1990s, Hong Kong was in need of a world-class international airport and an efficient transportation network to connect the airport with the various parts of the city. A number of major cable supported bridges were built on the airport access routes as a result.