The Hong Kong-Zhuhai-Macau megabridge

**The world’s longest bridge**

The 55 km transport link connecting Hong Kong and Macau to mainland China was first proposed in 1983. The aim was to link the prosperous island territories of Hong Kong and Macau, previously governed by overseas nations, to 11 major Chinese cities, creating an industrial and hi-tech region to rival Silicon Valley. This would combat economic decline in the Pearl River delta, where international exports have fallen, and develop the poorer Guangdong province adjacent to the islands. It was also hoped the bridge would expand tourism and increase trading efficiency.

**Construction**

The high costs meant that work did not start until 2009. The project was then merged into the Belt and Road Initiative, a Chinese government programme to establish global land and ocean trading links. The bridge opened in October 2018.

Construction of the link cost US$20 billion and involved reclaiming over 1,000 hectares of ocean to create two artificial islands with a 6.7 km tunnel between them (Figure 1). The tunnel was needed because the Pearl River estuary has four major shipping lanes. The underwater section keeps the most easterly lane clear, as well as avoiding the use of bridge pylons and infrastructure that might have impeded aircraft arriving at Hong Kong International airport.

Parts were prefabricated, including sections up to 100 metres long, and 400,000 tonnes of steel were used, enough for 60 Eiffel Towers. The bridge has six lanes, three checkpoints and passport controls, and will allow traffic to flow at up to 100 km h⁻¹.

**Construction issues**

Construction was fraught with setbacks and the bridge opened 2 years later than planned. Eighteen workers died and more than 200 were injured during building, and the bridge has increased the threat to the rare Chinese white dolphin. The species is only found in this region and its numbers have declined by 70% in the last 10 years.

In a typhoon and earthquake region, the bridge is designed to withstand winds of up to 340 km h⁻¹ and earth movement of 6.7 on the Richter scale, as well as a collision from a 300,000 tonne vessel. However, it remains a structure at risk and there are already reports that concrete blocks from the artificial islands are eroding.

**Political criticism**

There is widespread concern that the bridge is a covert attempt to draw Hong Kong politically closer to China, despite the ‘one country, two systems’ agreement when the UK handed over Hong Kong to China. There have been reports that only approved freight and passenger transport vehicles, and private vehicles of party donors and significant taxpayers, are allowed to use the bridge.

**The future?**

The tolls expected to be generated from the bridge are insufficient to pay back the cost of construction. A third of the $86 million raised per year will have to go on maintenance alone. There is also concern that the building of a second Pearl River crossing to the north, from Shenzhou to Zhongshan, will reduce use of the bridge by up to 25%. This would further fuel the image of the Zhuhai-Hong Kong-Macau crossing as a political white elephant.

**Further reading**

Guardian article: ‘World’s longest sea bridge to open…but only to drivers with a special permit’: www.tinyurl.com/y5wzalkf

BBC article: World’s longest sea crossing: Hong Kong-Zhuhai bridge opens: www.tinyurl.com/y7crp785

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**What are the political, environmental and economic implications of the new bridge linking China with Hong Kong?**

**Figure 1 The route of the bridge**

![Map of Hong Kong-Zhuhai-Macau megabridge](image-url)