

Chongming Crossing, Shanghai



The Chongming Crossing of the Yangtze River at Shanghai ranks as one of the biggest projects of its kind anywhere in the world. Divided into two sections by a mid-river island, the entire crossing is over 16km long. Flint & Neill Limited was a leading member of the design team which included Halcrow, Dissing+Weitling Architects and the Shanghai Municipal Engineering Design Institute and won the international design competition in 2001.

The competition scheme included a 1200m clear cable stayed span over the main navigation channel, which would have been the longest cable stayed span in the world. The scheme also included a secondary navigation channel with a 600m cable stayed span and connecting viaducts with multiple spans of up to 100m. The design featured a twin spine steel deck with a streamlined aerodynamic design. The simple single leg towers were in concrete up to a level of 185m and steel above to the top height of 290m.

The site is susceptible to strong typhoon winds, and the aerodynamic behaviour was a major factor in the development of the twin deck design solution. In particular, the stability of the 509m long cantilevers during construction required special consideration in the design. In addition, there are restrictions on lifting deck units from the water during bridge erection because of the busy marine traffic, and the twin deck design enabled the units to be brought out along the deck as the cantilever construction progressed.

The scheme has now changed and is now being developed by others but using a very similar design proposal.

