

## Shantou Harbour Bridge, China



The Shantou Harbour Bridge is a 452m span suspension bridge crossing the mouth of the harbour of the city of Shantou in the Guangdong Province in the Peoples' Republic of China. The structure is a conventional long span suspension bridge, but, for reasons of economy has a concrete box girder deck. The bridge is situated in a zone of significant seismicity and the original design included a number of complex articulation arrangements to accommodate various levels of seismic event whilst maintaining sufficient strength for resisting quasi-static wind effects. We were engaged to undertake an appraisal of the structure by one of the funding partners in order to assess its compliance with international standards of design and to comment on issues of durability and management of operations/maintenance.

Our role was to perform a Design review and appraisal of the major structural elements. Additional specialist tasks included; the incorporation of the results of the wind tunnel into an appraisal of the aerodynamic performance of the structure; Seismic response analysis and the provision of specialist advice on seismic detailing; An assessment of the entire suspension system and its anchorages; and Specialist advice on construction methodology.

The project was used by the client, the Shantou Bridge Board, as a means of gaining experience in the design and construction of suspension bridges at a smaller scale. Flint & Neill Limited helped to facilitate the technology transfer process by leading a number of seminars and discussion meetings on aspects of suspension bridge technology.

