

Chacao Bridge, Chile – Modular Bridge Joint System

CLIENT: DaeBong B.M.Technology Co. Ltd

LOCATION: Chacao, Chile

YEAR OF COMPLETION: 2028

The Chacao Bridge is a 2.75km multi-span suspension bridge, which once completed, will be the longest suspension bridge in South America. The bridge links the Island of Chiloé with mainland Chile through the Chacao Channel. The new bridge will allow motorists to cross the channel in less than three minutes instead of the current 45-minute ferry journey - dramatically improving mobility and business and tourism opportunities for residents of the island.

Hewson's role on this project was to provide the structural design of three modular bridge joint system (MBJS) in accordance with AASHTO LRFD. The MBJS joint caters for the expansion & contraction movements as well as rotations, transverse & vertical movements of the suspension bridge, while simultaneously allowing traffic to cross the gap between the suspension bridge and approach span. The max movement range that a MBJS needs to accommodate is 2800mm with an estimated accumulated movement of 12km/year. At max MBJS opening the joint spans over 5m. This places the MBJS for Chacao Bridge as one of the biggest bridge joints in the world. The large movement range is partly due to the bridge being in a highly active seismic zone.

KEY FACTS:

- Total Accumulated Estimated Movement over MBJS lifespan: 300km.
- At max opening the MBJS span over 5m.
- One of the world's largest bridge joints

