

RED BRIDGE — CAMPBELL TOWN, TASMANIA



View from the west



Centre span



Damage to wingwall — note coloured cement render from 1930s and salt deposition caused by it.

The “Red Bridge” across the Elizabeth River at Campbell Town in Tasmania is the oldest surviving brick arch bridge in Australia. It consists of three segmental arch spans of 7.6 metres (25 feet) and was built by convict labour between 1836 and 1838 using red clay bricks made on site (hence its name). It rests on a basalt stone substructure and uses sandstone for the piers, abutments and cappings.

The bridge was originally built wide enough to take two modern traffic lanes, plus footways, and lies on the main highway between the Tasmanian capital of Hobart and the principal northern city of Launceston. There is presently no convenient alternative route, nor is one planned in the near future. The Tasmanian Department of Infrastructure, Energy and Resources, which controls the bridge, required a contractor to take responsibility for the design and construction of rehabilitation and strengthening works to restore the original structural integrity of the bridge and strengthen it to take modern heavy vehicles, which are presently up to 62.5 tonnes on 9 axles in the “B-Double” configuration. Part of the “wish list” also required strengthening to the new SM1600 loading which allows for future increases and has loads in excess of 36 tonnes on a 3-axle group.

An alliance was formed by Cintec Australasia with van Ek Contracting of Tasmania, a firm known for its expertise in conservation of old bridges and the building of new ones. When expressions of interest were called from all over Australia for a design and construct contract, only the Cintec alliance using the Archtec process was able to satisfy the Department and a contract was negotiated without further tendering.

Analysis by the Archtec consultants, Gifford and Partners of England, showed that the bridge could be strengthened to the required SM1600 loading. The project required 54–30 mm diam. x 5 m long anchors which were installed in late April to early May, 2000.

Expertise from within the world-wide Cintec organization was also utilised in conserving the masonry which required cleaning, repointing and grouting. Bill Jordan, who heads Cintec Australasia, advised on the masonry conservation in his capacity as a Consulting Structural Engineer specialising in conservation, with the help of Peter Sobek, the Cintec grout expert from Germany. Specially formulated lime grouts and mortars were used to ensure that the bridge meets the specification requirement of 100 years future life without major repairs.