

## Construction of The Northbridge Bridge

The Northbridge Bridge is a reinforced concrete arched bridge constructed in the 1930s to replace a suspension bridge which had been opened in 1892. The sandstone towers and approaches of the suspension bridge were integrated into the 1930s design and the result is a highly aesthetic bridge in a dramatic bushland setting.

As part of an economic boom in the Colony of NSW, land to the north of Long Bay Middle Harbour was subject to major subdivisions in the 1880s. The North Sydney Investment and Tramway Company (NSITC) bought up much of the land and decided to build the Bridge over Long Gully. The 1892 Bridge was designed by J.E.F. Coyle and Prof. W. H. Warren. The builder, Alexander Johnston, collected tolls when the NSITC became bankrupt.

The Depression of the 1890s slowed land sales and Northbridge did not develop as had been hoped; the tramway was not built. In 1912 the bridge was handed over to the Government as a gift, on the condition that a tramway be extended to the north side and no toll charged. The tramway was extended over the bridge in 1913-14, with its terminus in Sailors Bay Road. The trams operated on this route from 1914 until 1936.

Between its construction and its handing over to the then Department of Public Works, the bridge was little used and poorly maintained. Repairs and some strengthening works were carried out in conjunction with the construction of the tramway. Inspections from 1935 revealed serious corrosion in the steelwork and cables, partly attributable to defects in the design of the bridge. For example, water had been allowed to accumulate around the suspension rods as they passed through the cross girder ends in small, undrained reserves that had originally been filled with a bituminous mixture, which had not stood the test of time. The main suspension cables were also found to be weakened by corrosion. It rapidly became clear that replacement or substantial rebuilding would be necessary.

The 1936 adaptation of the Bridge from a stone, timber and steel suspension bridge to a reinforced concrete arch was designed and constructed by the NSW Department of Main Roads.

The main span of the Bridge is 106.6 metres and the arch consists of two concrete ribs, peaking some 52 metres above stream level. Supported on the arches are columns carrying the deck on 14 reinforced concrete beam slab spans. The deck has expansion joints at the large piers directly over the arch springings. These also transfer wind load from the arch and deck back to the foundations. Connecting these to the original towers are 15.5 metres concrete beam spans.

The Bridge has two lanes of traffic with a raised concrete footpath on each side. The reinforced concrete balustrade has integrated light standards and is detailed in Inter-War Gothic style to marry into the Victorian Gothic detailing of the sandstone towers and approaches.

Description and History adapted from the RTA Heritage and Conservation register entry for the Long Gully Bridge (Northbridge).

[www.rta.nsw.gov.au/cgi-bin/index.cgi?action=heritage.show&id=4309506](http://www.rta.nsw.gov.au/cgi-bin/index.cgi?action=heritage.show&id=4309506)