

VOID SEWER AQUEDUCT OVER BARWON RIVER



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1 barwon river ovoid sewer aqueduct barwon river geelong side view



barwon river ovoid sewer aqueduct barwon river geelong site view publication



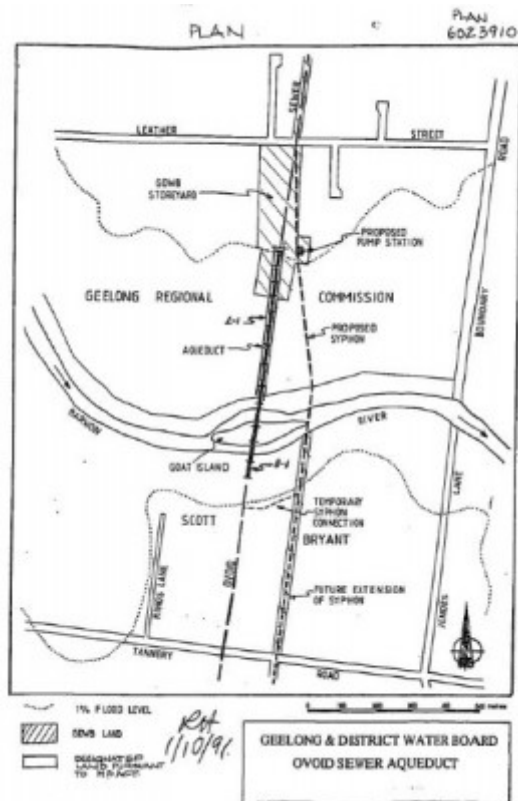
barwon river ovoid sewer aqueduct barwon river geelong view of bottom



barwon river ovoid sewer aqueduct barwon river geelong view of top aug1988



h00895 ovoid sewer aqueduct over barwon river south barwon geelong distant view she project 2004



H0895 plan

Location

42 LEATHER STREET BREAKWATER and 91-97 TANNERY ROAD MARSHALL, GREATER GEELONG CITY

Municipality

GREATER GEELONG CITY

Level of significance

Registered

Victorian Heritage Register (VHR) Number

H0895

Heritage Overlay Numbers

HO56

VHR Registration

October 23, 1991

Heritage Listing

Statement of Significance

Last updated on - March 26, 2009

What is significant?

The Ovoid Sewer Aqueduct was constructed over the Barwon River at Breakwater in 1913-15 for the Geelong Waterworks and Sewerage Trust as part of a sewerage scheme to serve Geelong. The sewer extended south from the urban centre of Geelong to the coast at Black Rock to discharge into Bass Strait at the shoreline. The outfall sewer, which comprised a reinforced concrete pipe of ovoid shape, crossed the Barwon River at Breakwater and was conveyed across the flood plain by means of a long reinforced concrete aqueduct of innovative design.

The aqueduct and sewer were designed and constructed by Tasmanian engineer Edward Giles Stone and his partner Ernest J. Siddeley. A purpose-built factory was established nearby, adjacent to the railway, to manufacture the sections of sewer pipe, with production commencing in 1912.

The aqueduct is approximately 756 metres in length and carries the ovoid sewer pipe and a walkway. It consists of a series of trusses which cantilever from fourteen concrete, corniced piers. Girders bridge the gap between these trusses. The form of the aqueduct was inspired by an overseas rail bridge design, the steel Firth of Forth Bridge, Scotland, constructed by 1890.

One of the most innovative forms of concrete reinforcement used in Australia, the Considere system, was used in the construction of the aqueduct. Heavy spiral reinforcing bars were used to increase the compressive strength of the concrete core. E. G. Stone was the greatest individual exponent of this system and his design of the Dennys Lascelles Austin wool store at Geelong in 1909 (now demolished) was an excellent example of the application of this system. Stone was also a great innovator and this is evident in his application for a number of patents from 1908.

Cracks began to appear in the concrete work of the aqueduct as early as 1922 and initial repairs were made in 1923-24. Other repair works have been made since this time. The aqueduct was decommissioned in 1992 following the construction of a new sewer main under the river however the structure has been retained.

How is it significant?

The Ovoid Sewer Aqueduct is of architectural, historical, scientific (technical) and aesthetic significance to the State of Victoria.

Why is it significant?

The Ovoid Sewer Aqueduct is of architectural significance for its association with the engineers Edward Giles Stone and Ernest J Siddeley, who undertook a number of marine projects in southern and eastern Australia, including reinforced concrete ships and pontoons. Stone was a highly innovative and creative engineer whose daring structural systems challenged the limits of construction technology in the early twentieth century. His advanced work in reinforced concrete, the Considere system in particular, is of great importance and his design derivation from the steel Firth of Forth Bridge in Scotland is of particular note.

The Ovoid Sewer Aqueduct is of scientific (technical) significance as an example of pioneering concrete work of structural ingenuity and monumental scale. The early and innovative use of reinforced concrete in the Considere system, which was the most innovative form of reinforcement used in Victoria, is of great significance. The aqueduct remains as a rare example of this type of concrete construction. It is also of scientific (technical) significance for its overall length and the maximum span length, both of which appear to be in excess of that of any other Victorian reinforced concrete structure at the time of construction.

The Ovoid Sewer Aqueduct is of historical significance for its association with the inaugural work of the Geelong sewerage scheme in 1912-15. Geelong was one of the first regional Victorian cities to implement plans for the construction of a sewerage system.

The Ovoid Sewer Aqueduct is of aesthetic significance as a major landscape feature. Its dramatic setting in the Barwon River floodplain near Breakwater, Geelong is of great importance.

Permit Exemptions

General Conditions: 1. All exempted alterations are to be planned and carried out in a manner which prevents damage to the fabric of the registered place or object.

General Conditions: 2. Should it become apparent during further inspection or the carrying out of works that original or previously hidden or inaccessible details of the place or object are revealed which relate to the significance of the place or object, then the exemption covering such works shall cease and Heritage Victoria shall be notified as soon as possible. Note: All archaeological places have the potential to contain significant sub-surface artefacts and other remains. In most cases it will be necessary to obtain approval from the Executive Director, Heritage Victoria before the undertaking any works that have a significant sub-surface component.

General Conditions: 3. If there is a conservation policy and plan all works shall be in accordance with it. Note: A Conservation Management Plan or a Heritage Action Plan provides guidance for the management of the heritage values associated with the site. It may not be necessary to obtain a heritage permit for certain works specified in the management plan.

General Conditions: 4. Nothing in this determination prevents the Executive Director from amending or rescinding all or any of the permit exemptions.

General Conditions: 5. Nothing in this determination exempts owners or their agents from the responsibility to seek relevant planning or building permits from the responsible authorities where applicable.

Minor Works : Note: Any Minor Works that in the opinion of the Executive Director will not adversely affect the heritage significance of the place may be exempt from the permit requirements of the Heritage Act. A person proposing to undertake minor works must submit a proposal to the Executive Director. If the Executive Director is satisfied that the proposed works will not adversely affect the heritage values of the site, the applicant may be exempted from the requirement to obtain a heritage permit. If an applicant is uncertain whether a heritage permit is required, it is recommended that the permits co-ordinator be contacted.

Construction dates	1913,
Architect/Designer	Stone, Edward,
Heritage Act Categories	Registered place,
Other Names	BARWON AQUEDUCT, BARWON SEWER AQUEDUCT,
Hermes Number	518
Property Number	

History

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The draft statement of significance and the above history were produced as part of an Online Data Upgrade Project 2009. Sources were as follows:

References:

- Concrete and Constructional Engineering Vol XI no 1 January 1916, pp 49-51
- Various reports in the Geelong Advertiser and Geelong Waterworks and Sewerage Trust Minutes
- A.W. Cooke, 'Sewering Geelong', Investigator, June 1981, p 55
- A. Willingham, 'The Ovoid Sewer Aqueduct at Breakwater Geelong Victoria, Assessment of Cultural Significance and Preparation of a Conservation Plan', 1991 [extract on file 602391 part1]

Extent of Registration

AMENDMENT OF REGISTER OF HISTORIC BUILDINGS

Historic Building No. 895.

The Barwon River Ovoid Sewer Aqueduct Barwon River near Breakwater, Geelong.

To the extent of-

1. the whole of the structure known as the ovoid sewer aqueduct, marked B-1 on Plan 6023910 endorsed by the Chairperson, HBC and held by the Director, HBC and
2. the land 10 metres either side of the structure and 10 metres to the Northern end of the structure, marked L-1 on Plan 6023910 endorsed by the Chairperson, HBC and held by the Director, HBC being located on land described as Crown Allotment 5 and Part Crown Allotment 4, Section 12A, City of Geelong, Parish of Corio. [Victoria Government Gazette No. G41 23 October 1991 p.2938]

This place/object may be included in the Victorian Heritage Register pursuant to the Heritage Act 2017. Check the Victorian Heritage Database, selecting 'Heritage Victoria' as the place source.

For further details about Heritage Overlay places, contact the relevant local council or go to Planning Schemes Online <http://planningschemes.dpcd.vic.gov.au/>