

# ST KILDA STREET BRIDGE



ST KILDA STREET BRIDGE  
SOHE 2008



h02080 1 st kilda street  
bridge elwood east view mz  
may2005



h02080 st kilda street bridge  
elwood west side mz  
may2005



h02080 st kilda street bridge  
elwood north view mz  
may2005



h02080 st kilda street bridge  
elwood south view mz  
may2005



h02080 st kilda street bridge  
elwood footpath mz may2005



h02080 st kilda street bridge  
elwood structure east side 01  
mz may2005



h02080 st kilda street bridge  
elwood structure east side 02  
mz may2005



h02080 st kilda street bridge  
elwood structure west side 01  
mz may2005



h02080 st kilda street bridge  
elwood structure west side 02  
mz may2005



h02080 st kilda street bridge  
elwood structure west side 03  
mz may2005



h02080 st kilda street bridge  
elwood north abutment mz  
may2005



h02080 st kilda street bridge  
elwood structure under  
footpath 01 mz may2005



h02080 st kilda street bridge elwood plan mz june2005

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## Location

ST KILDA STREET ELWOOD AND ST KILDA STREET BRIGHTON, BAYSIDE CITY, PORT PHILLIP CITY

## Municipality

PORT PHILLIP CITY

BAYSIDE CITY

## Level of significance

Registered

## Victorian Heritage Register (VHR) Number

H2080

## Heritage Overlay Numbers

HO461

HO770

## VHR Registration

September 8, 2005

## Heritage Listing

Victorian Heritage Register

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### Statement of Significance

Last updated on - September 8, 2005

#### What is Significant?

The St Kilda Street bridge in Elwood is a reinforced concrete T-girder bridge over the Elwood Canal. The bridge was designed and constructed in 1905 by civil engineer John Monash of the Reinforced Concrete & Monier Pipe Construction Company.

St Kilda Street bridge is the oldest extant reinforced concrete beam bridge in Victoria and possibly Australia. It marks a watershed in the use of reinforced concrete in not only civil construction but also in the construction of buildings. Soon after the construction of this bridge Monash was utilising the technology in the construction of two warehouses in Oliver Lane (H1135) in Melbourne in 1906-07.

Prior to these works Monash, had to varying degrees of success, been building concrete arch bridge using the Monier patent system with his then business partner J.T.Anderson. The most successful of these is the Anderson St Bridge over the Yarra 1899 (H1440).

Reinforced concrete construction theory was in its infancy in the late 19th and early 20th Centuries and the St Kilda Street Bridge and the Stawell St Bridge in Ballarat before it (1904) represent pioneering developments by Monash into new engineering methods and material use. Unfortunately the Stawell St Bridge was less than successful and the bridge required extra support structure. It was demolished after several years.

Due to the failure of the Stawell St Bridge Monash returned to the University of Melbourne to conduct experiments into the behaviour of reinforced concrete girder construction. From the results of these tests, which he published in the Journal of the Victorian Institute of Engineers, Monash was able to revise the method for the design of reinforced concrete construction such that the next T-girder bridge, the St Kilda Street bridge of 1905, was successful. This bridge is a most important evolutionary step in the development of reinforced concrete technology. Monash's calculations for the design of the St Kilda Street bridge still exist.

The St Kilda Street bridge was designed as part of the Elwood canal works which were built to drain the Elster Creek and the swampy land in the Elwood and Elsternwick areas. The Elwood Canal project provided Monash with the opportunity to further develop reinforced concrete beam technology. The low lying land and shallow canals of the project required low flat bridges which could not easily be provided by arch bridges which require deep embankments or a greater height of construction than a flat bridge. Monash was able to convince Carlos Catani, then the Chief Engineer of the Public Works Department, of the suitability of reinforced concrete beam construction for bridges in the Elwood canal project despite their unproven use. Between 1905 and 1907 Monash's Reinforced Concrete & Monier Pipe Construction Co. built seven bridges in the Elwood area, six of these crossed the Elwood canal.

After the success of the St Kilda Street Bridge, Monash always advocated the adoption of the T-girder in preference to the arch, and this eventually came to be the standard form for most Victorian road bridges.

John (later Sir John) Monash was an important figure as a civil engineer, being a leader in the in the field of reinforced concrete. During the First World War Monash rose to the rank of Major General eventually commanding all five Australian divisions on the Western Front. At various times he also commanded a British Division, two Canadian and two American Divisions. Amongst other major military awards he was knighted in August 1918 on the field of battle by King George V. After the war he became the General Manager of the

### **How is it Significant?**

The St Kilda Street bridge is of scientific (technical) and historical significance at the National and State levels.

### **Why is it Significant?**

The St Kilda Street Bridge is of technical significance as the earliest extant example of a reinforced concrete girder bridge known to survive in Victoria, and probably in Australia. It demonstrates the technical innovation achieved by John Monash in the early years of the twentieth century and demonstrates the earliest stage in the development of reinforced concrete technology for bridge building. This innovation eventually led to the adoption of reinforced concrete as a standard bridge building material by road construction authorities in Australia. The survival of the sequence of theory, calculations and fabric relating to an innovative bridge design is rare.

The St Kilda Street Bridge is of historical significance for its association with John (later Sir John) Monash

The St Kilda Street Bridge is historical significance for its association with the drainage works that led to the development of the suburb of Elwood.

## **Permit Exemptions**

### **General Exemptions:**

General exemptions apply to all places and objects included in the Victorian Heritage Register (VHR). General exemptions have been designed to allow everyday activities, maintenance and changes to your property, which don't harm its cultural heritage significance, to proceed without the need to obtain approvals under the Heritage Act 2017.

Places of worship: In some circumstances, you can alter a place of worship to accommodate religious practices without a permit, but you must **notify** the Executive Director of Heritage Victoria before you start the works or activities at least 20 business days before the works or activities are to commence.

Subdivision/consolidation: Permit exemptions exist for some subdivisions and consolidations. If the subdivision or consolidation is in accordance with a planning permit granted under Part 4 of the *Planning and Environment Act 1987* and the application for the planning permit was referred to the Executive Director of Heritage Victoria as a determining referral authority, a permit is not required.

Specific exemptions may also apply to your registered place or object. If applicable, these are listed below. Specific exemptions are tailored to the conservation and management needs of an individual registered place or object and set out works and activities that are exempt from the requirements of a permit. Specific exemptions prevail if they conflict with general exemptions.

Find out more about heritage permit exemptions [here](#).

### **Specific 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 the Executive Director 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 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 approved by the Executive Director, all works shall be in accordance with it. Note: The existence of a Conservation Management Plan or a Heritage Action Plan endorsed by Heritage Victoria 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. **Regular Site Maintenance :**

The following site maintenance works are permit exempt under section 66 of the Heritage Act 1995, a) regular site maintenance provided the works do not involve the removal or destruction of any significant above-ground features or sub-surface archaeological artefacts or deposits; b) the maintenance of an item to retain its conditions or operation without the removal of or damage to the existing fabric or the introduction of new materials; c) cleaning including the removal of surface deposits, organic growths, or graffiti by the use of low pressure water and natural detergents and mild brushing and scrubbing; d) repairs, conservation and maintenance to plaques, memorials, roads and paths, fences and gates and drainage and irrigation. e) the replacement of existing services such as cabling, plumbing, wiring and fire services that uses existing routes, conduits or voids, and does not involve damage to or the removal of significant fabric. Note: Surface patina which has developed on the fabric may be an important part of the item's significance and if so needs to be preserved during maintenance and cleaning. Note: Any new materials used for repair must not exacerbate the decay of existing fabric due to chemical incompatibility, obscure existing fabric or limit access to existing fabric for future maintenance. Repair must maximise protection and retention of fabric and include the conservation of existing details or elements.

**Weed and Vermin Control :**

The following weed and vermin control activities are permit exempt under section 66 of the Heritage Act 1995, a) Weed and vermin control activities provided the works do not involve the removal or destruction of any significant above-ground features or sub-surface archaeological artefacts or deposits; Note: Particular care must be taken with weed and vermin control works where such activities may have a detrimental affect on the significant fabric of a place. Such works may include the removal of ivy, moss or lichen from an historic structure or feature, or the removal of burrows from a site that has archaeological values. **Landscape Maintenance :**

The following landscape maintenance works are permit exempt under section 66 of the Heritage Act 1995, a) landscape maintenance works provided the activities do not involve the removal or destruction of any significant above-ground features or sub-surface archaeological artefacts or deposits; b) watering, mowing, top-dressing and fertilising necessary for the continued health of plants, without damage or major alterations to layout, contours, plant species or other significant landscape features; c) pruning to control size, improve shape, flowering or fruiting and the removal of diseased, dead or dangerous material, not exceeding 20% of the crown of the tree within a period of two years; d) tree surgery by a qualified horticulturalist or tree surgeon necessary for the health of those plants. **Public Safety and Security :**

The following public safety and security activities are permit exempt under section 66 of the Heritage Act 1995, a) public safety and security activities provided the works do not involve the removal or destruction of any significant above-ground structures or sub-surface archaeological artefacts or deposits; b) the erection of temporary security fencing, scaffolding, hoardings or surveillance systems to prevent unauthorised access or secure public safety which will not adversely affect significant fabric of the place including archaeological features; c) development including emergency stabilisation necessary to secure safety where a site feature has been irreparably damaged or destabilised and represents a safety risk to its users or the public. Note: Urgent or emergency site works are to be undertaken by an appropriately qualified specialist such as a structural engineer, or other heritage professional. **Signage and Site Interpretation :**

The following Signage and Site Interpretation activities are permit exempt under section 66 of the Heritage Act 1995, a) signage and site interpretation activities provided the works do not involve the removal or destruction of any significant above-ground structures or sub-surface archaeological artefacts or deposits; b) the erection of non-illuminated signage for the purpose of ensuring public safety or to assist in the interpretation of the heritage significance of the place or object and which will not adversely affect significant fabric including landscape or archaeological features of the place or obstruct significant views of and from heritage values or items; c) signage and site interpretation products must be located and be of a suitable size so as not to obscure or damage significant fabric of the place; d) signage and site interpretation products must be able to be later removed without causing damage to the significant fabric of the place; Note: The development of signage and site interpretation

products must be consistent in the use of format, text, logos, themes and other display materials. Note: Where possible, the signage and interpretation material should be consistent with other schemes developed on similar or associated sites. It may be necessary to consult with land managers and other stakeholders concerning existing schemes and strategies for signage and site interpretation. **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 may 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. **Road Works:**

The following works to the road portion of the place is permit exempt: a) The resurfacing of the road and maintenance to the road surface; b) lane marking; c) erection of speed and traffic signs.

The installation of traffic lights may be permit exempt if the Executive Director is satisfied that the heritage significance and the significant fabric of the place will not be adversely affected by such an installation. Any proposal to undertake such work should be submitted to the Executive Director for approval.

Construction dates	1905,
Heritage Act Categories	Registered place,
Other Names	CONCRETE BRIDGE,
Hermes Number	13053
Property Number	

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## Extent of Registration

1. All of the place known as the The St Kilda Street Bridge over The Elwood Canal on St Kilda Street Elwood including all of the bridge and its support structure, the abutments, the roads and embankments marked (B1) on Diagram 2080 held by the Executive Director.

2. All of the land marked L1 on Diagram 2080 held by the Executive Director.

*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/>*