FORMER BURGE BROS FACTORY

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1 former burge bros factory racecourse road flemington front view jun1996

glue laminated beam abutment

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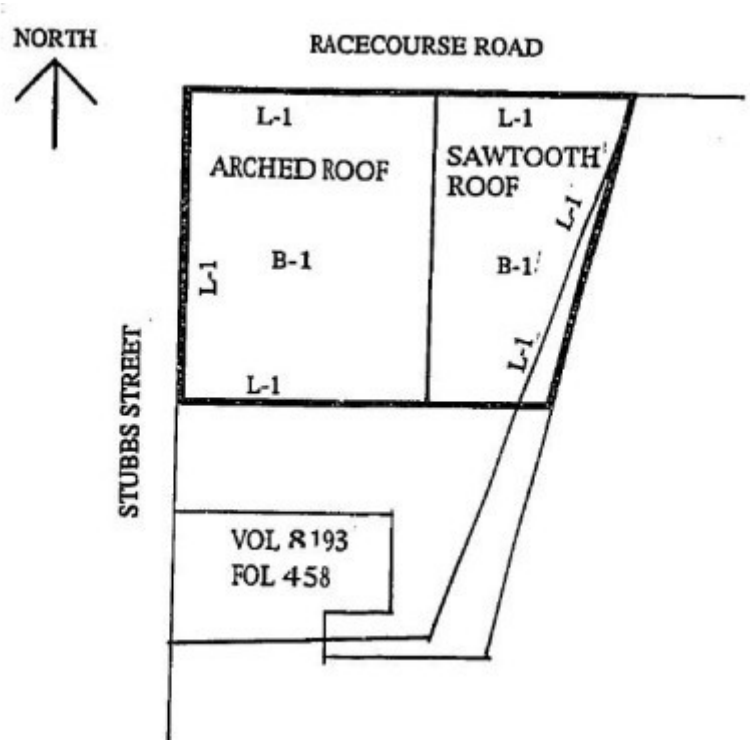

h01216 plan h1216

Location

135-157 RACECOURSE ROAD KENSINGTON, MELBOURNE CITY

Municipality

MELBOURNE CITY

Level of significance

Registered

Victorian Heritage Register (VHR) Number

H1216

Heritage Overlay Numbers

HO959

VHR Registration

October 24, 1996

Heritage Listing

Victorian Heritage Register

Statement of Significance

Last updated on - May 11, 1999

The Former Burge Bros Factory at 135-157 Racecourse Road Flemington was constructed in 1945-46 to a design by C T Gilbertson, a personal friend of manufacturer Dick Burge and a building estimator with R & E Seccul, master builders. The design had been conceived in 1943. The curved roof of the large factory space is supported on glue-laminated arches spanning 30 metres, which were manufactured by Ralph Symonds in Sydney. The arches, which are 600mm deep by 100mm wide in section, are made up of 29 laminated sections of coachwood, and together with the Symonds patent purlin system and subsidiary ties, form a large column-free factory area. The Racecourse Road facade of the building reflects the arched form of the roof behind and is constructed of dichromatic brickwork with steel framed windows in the Moderne style reminiscent of the work of Dutch Modernist Willem Dudok.

The Former Burge Bros factory at 135-157 Racecourse Road is of scientific and architectural importance to the State of Victoria.

The factory is technologically (scientifically) important as an early and probably the oldest known surviving example of glue-laminated timber construction in Australia. It is at least a decade in advance of any comparable building that has been so far identified. As such, it is important for its innovative structural design demonstrating an economical use of timber which had only been made possible by developments in waterproof glues enabling large spans to be covered by using small sections of timber horizontally laminated to form large structural members

The factory is architecturally important for the way in which the laminated arches, together with the Symonds patent purlin system and the subsidiary ties, form an aesthetic and strikingly efficient use of materials. The facade is of architectural interest as an excellent example of Moderne style in dichromatic brickwork with the curved form reflecting the arched roof behind in an unusual manifestation of this generally rectilinear style reminiscent of the work of Dutch modernist Willem Dudok.

The factory is important for its association with the pioneering firm of Ralph Symonds, which was the first manufacturer of glue-laminated timber structural members in Australia.

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:

EXEMPTIONS FROM PERMITS:

1. All non-structural works to the interior, including removal or installation of any fixtures, machinery, equipment and the like, and associated ductwork, pipework and wiring.

2. Installation, removal or alterations to interior partition walls.

3. All works to the sawtooth roof section of the building, with the exception of works to the exterior brick walls.

Construction dates	1945,
Architect/Designer	Gilbertson, CT,
Heritage Act Categories	Registered place,

Hermes Number	4928
Property Number	

History

Contextual History:
The former Burge Bros Factory at Racecourse Road was planned during the latter part WW2, when building materials, particularly steel, were in short supply. The original purpose of the factory was for defence industry products (see below -History of Place:), although by the time the factory was completed the war was over. The shortage of materials may have been one of the reasons for the choice of glue-laminated timber arches for the structural system.

Laminated timber construction, both vertical and horizontal were used as early as the sixteenth century in Europe :

Attempts to conserve large piece sof timber for the French Navy stimulated the 16th century architect Philibert Delorme (1512-70) to develop a new system of timber construction for domes using arched ribs of timber in lieu of trusses. These ribs were formed of short lengths of plank placed edgeways and bolted together in thickness, the planks in one thickness breaking joint with the planks in the adjoining thickness. The Halle du Blè in Paris, France, had an arched timber roof which spanned 120ft (36m) but this burned down in 1802.

Colonel Emy, an early 19th century French engineer, developed another technique using laminated timber arches, this time with the fibers of the timber coinciding with the curvature. The planks were bolted or strapped together. The first roof of this type spanned 65ft(20m) and was erected in 1825 at Marac, near Bayonne in France.

With vertical lamination, the timber is cut to the appropriate profile, and when uses for arches, involves wastage. In horizontal lamination , the timber is bent to the required profile with or without steam. There is minimal wastage, but forming and maintaining the profile is more difficult . Early laminated timber structures did not rely on glue alone, and used bolts, straps, trenails (wooden pegs) and other fastenings as well as tar and pitch to hold the layers together.

Nineteenth century examples in Australia used vertically laminated arches - Victorian examples include the 1858 cell block of the Melbourne Gaol, and W B Downe's Castlemaine Market of 1861-62. Horizontal lamination was initially used for bridges, with the earliest example in Australia possibly being Edmund Blackett's Wallis Creek bridge at Maitland NSW of 1851.

Glue-laminated timber construction was invented early this century by Otto Wetzer of Weimar, Germany, and was popular in Germany prior to WW1.

New and improved waterproof adhesives, many of them based on synthetic resin products, made it possible to join timber in a way which is analogous to welding in steel, to form permanent t joints and bonds. These adhesives replaced earlier ones which were largely made by boiling down and treating organic materials such as hides, bones, starch and the like, but these were not permanent or waterproof. Joints using resin-based adhesives can be as strong or stronger than the materials they join.

Random lengths of lumber may be united by finger jointing to produce structural sections, which can lead to considerable savings in timber which would otherwise be wasted. Boards can be laminated together to form "glulam" beams or arches. These can be designed in such a way that high grades of timber can be used for high-stress areas, whereas other parts of the beam can be made with less expensive material. These types of beams and arches have been widely used since before World War 11.

Australia seems to have been in no rush to adopt glue-laminated technology. While it was widely used in Europe since before WW2, the first Australian example of a laminated arch appears to be those manufactured by Ralph Symonds for two officers of the Department of the Interior in Sydney, Tate and Phillips, probably in early 1943

This was a coachwood arch of 29 laminations , the same as those used at Flemington.

History of Place:
The Former Burge Bros Factory at 135-157 Racecourse Road, Flemington is situated next to Moonee Ponds Creek in an area which would have been originally prone to flooding. According to the report by Dr Miles Lewis the site was possibly entirely vacant in 1935, although there may have been a small case factory owned by W E Croft on the land adjacent to Stubbs Street. In 1939 there was a larger structure constructed of timber and iron on the land, which was owned or occupied by A S Williams and W E Wolstencroft..

On 16 October 1943 H L Burge of H Burge Bros, bedroom furniture manufacturers of 120 Bouverie Street, Carlton, sought consent in principle from the Melbourne City Council for a building on this site. They were yet to obtain a permit from the Department of War Organisation and Industry. It appears that the factory was to make waterproof panels, printers blocks, laminated beams, arches and columns, all of which were urgently needed for defence purposes by a number of government departments. The site was in 'the flooded area of the Moonee Ponds Creek' but the floor level would be kept above the highest flood level. The building was to be of wood, and would be 'insulated' from both street boundaries and from other buildings, but not from the east boundary abutting Moonee Ponds Creek Reserve.

The drawing submitted by Burge was by C T Gilbertson, and shows the insulation or setback from the streets of eight feet(2.4m). It also shows the arches, not identified as laminated but very much of the ultimate form, including the pin joint at the crown. There are seven of these arches spanning 103 feet (31m), and spaced at 14ft 6in (4.35m). The overwhelming probability is that the idea of the arches came not from Gilbertson but from Burge Bros themselves, because of their interest in lamination. They in turn probably derived it from Ralph Symonds, who had manufactured the first such arches in Australia for the Department of the Interior, and who may well have been their mentor in lamination generally.

Construction was delayed until 1945 when a new application was made to Melbourne City Council, with a new set of four working drawings by Gilbertson. The construction was based upon Ralph Symonds plywood laminated arches, the dimensions of which are given as 24x4 inches (600 x 100mm) in section, spanning nearly 99feet (30m). The engineering calculations for the loading in the arches were taken by Malcolm J Stanley, chartered engineer, Sydney, presumably at the behest of Symonds.

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The Ministry of Post War Reconstruction issued its consent on 23 April 1945, and on 30 April an application was made to Melbourne City Council for a building permit.

The approval process was not straightforward, with the Council initially requesting a reduction in the spacing of the arches, and both Ralph Symonds and the S F Rust of the Council for Scientific and Industrial Research writing to Burge Bros to make reassuring statements about the strength of the proposed timber arches. This is to be expected with a new form of construction, as it appears that this was the first use of a glue laminated timber structure in Victoria. However, approval was given on 7 August 1945.

The arches were made of N S W coachwood (or scented satinwood) -a rainforest timber -and glued with Nightingale water resistant glue, as used in aircraft construction. They were supplied by Symonds out of a batch made for the E T C Building in Sydney.

Subsequent owners include Gerrard and Co Of Australia Ltd, Fielding Springs Pty Ltd and Henderson's federal Spring Works. Improdex has occupied the site for approximately 20 years.

Extent of Registration

NOTICE OF REGISTRATION

As Executive Director for the purpose of the Heritage Act, I give notice under section 46 that the Victorian Heritage Register is amended by including the Heritage Register Number 1216 in the category described as a Heritage Place:

Former Burge Bros Factory, 135-157 Racecourse Road, Flemington, Moonee Valley City Council.

EXTENT:

1. Part of the building known as the former Burge Bros Factory at 135-157 Racecourse Road, Flemington marked B1 on Diagram 607293 held by the Executive Director of the Heritage Council.

2. All of the land marked L-1 on Diagram 607293 being part of the land described in Certificate of Title Volume 8193, Folio 458 held by the Executive Director of the Heritage Council.

Dated 3 October 1996

RAY TONKIN
Executive Director
[*Victoria Government Gazette* No. G42 24 October 1996 p.2775]

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/