Recommendation from the Executive Director, Heritage Victoria

Wunghnu Water Tower PROV H2477

Carlisle Street, Wunghnu, Moira Shire

Yorta Yorta Country

VICTORIA State Government

HERITAGE VICTORIA

Executive Director recommendation

Under section 37 of the *Heritage Act 2017* (**the Act**) I recommend to the Heritage Council of Victoria (**Heritage Council**) that the Wunghnu Water Tower, located at Carlisle Street, Wunghnu, Moira Shire, is of State-level cultural heritage significance and should be included in the Victorian Heritage Register (**VHR**) in the category of Registered Place.
In accordance with section 38 of the Act, I include in this recommendation categories of works or activities which may be carried out in relation to the place without the need for a permit under Part 5 of the Act.

I suggest that the Heritage Council determine that:

- the Wunghnu Water Tower is of State-level cultural heritage significance and is to be included in the VHR in accordance with section 49(1)(a) of the Act
- the proposed categories of works or activities which may be carried out in relation to the place for which a permit under the Act is not required will not harm the cultural heritage significance of the place under section 49(3)(a) of the Act.

STEVEN AVERY
Executive Director, Heritage Victoria

Date of recommendation: 14 September 2026

Report Version #2: 16 September 2026

This version contains an updated image of the 1909, Water Tower at Wunghnu, Postcard, on page 15, which was not visible in the PDF version of 14 September. No other changes have been made.

The process from here

1. The Heritage Council publishes the Executive Director's recommendation (section 41)

The Heritage Council will publish the Executive Director's recommendation on its website for a period of 60 days.

2. Making a submission to the Heritage Council (sections 44 and 45)

Within the 60-day publication period, any person or body may make a written submission to the Heritage Council. This submission can support the recommendation, or object to the recommendation and a hearing can be requested in relation to the submission. Information about making a submission and submission forms are available on the Heritage Council's website.

3. Heritage Council determination (sections 46, 46A and 49)

The Heritage Council is an independent statutory body. It is responsible for making the final determination to include or not include the place, object or land in the VHR or amend a place, object or land already in the VHR.

If no submissions are received the Heritage Council must make a determination within 40 days of the publication closing date.

If submissions are received, the Heritage Council may decide to conduct a hearing in relation to the submission. The Heritage Council must conduct a hearing if a submission requests a hearing, and that submission is made by person or body with a real or substantial interest in the place, object or land.

If a hearing does take place, the Heritage Council must make a determination within 90 days after the completion of the hearing.

4. Obligations of owners of places, objects and land (sections 42, 42A, 42B, 42C, 42D and 43)

The owner of a place, object or land which is the subject of a recommendation to the Heritage Council has certain obligations under the Act. These relate to advising the Executive Director in writing of any works or activities that are being carried out, proposed or planned for the place, object or land.

The owner also has an obligation to provide a copy of this statement of recommendation to any potential purchasers of the place, object or land before entering into a contract.

5. Further information

The relevant sections of the Act are provided at the end of this report.

Description

The following is a description of the Wunghnu Water Tower at the time of the site inspection by Heritage Victoria on 28 October 2025.

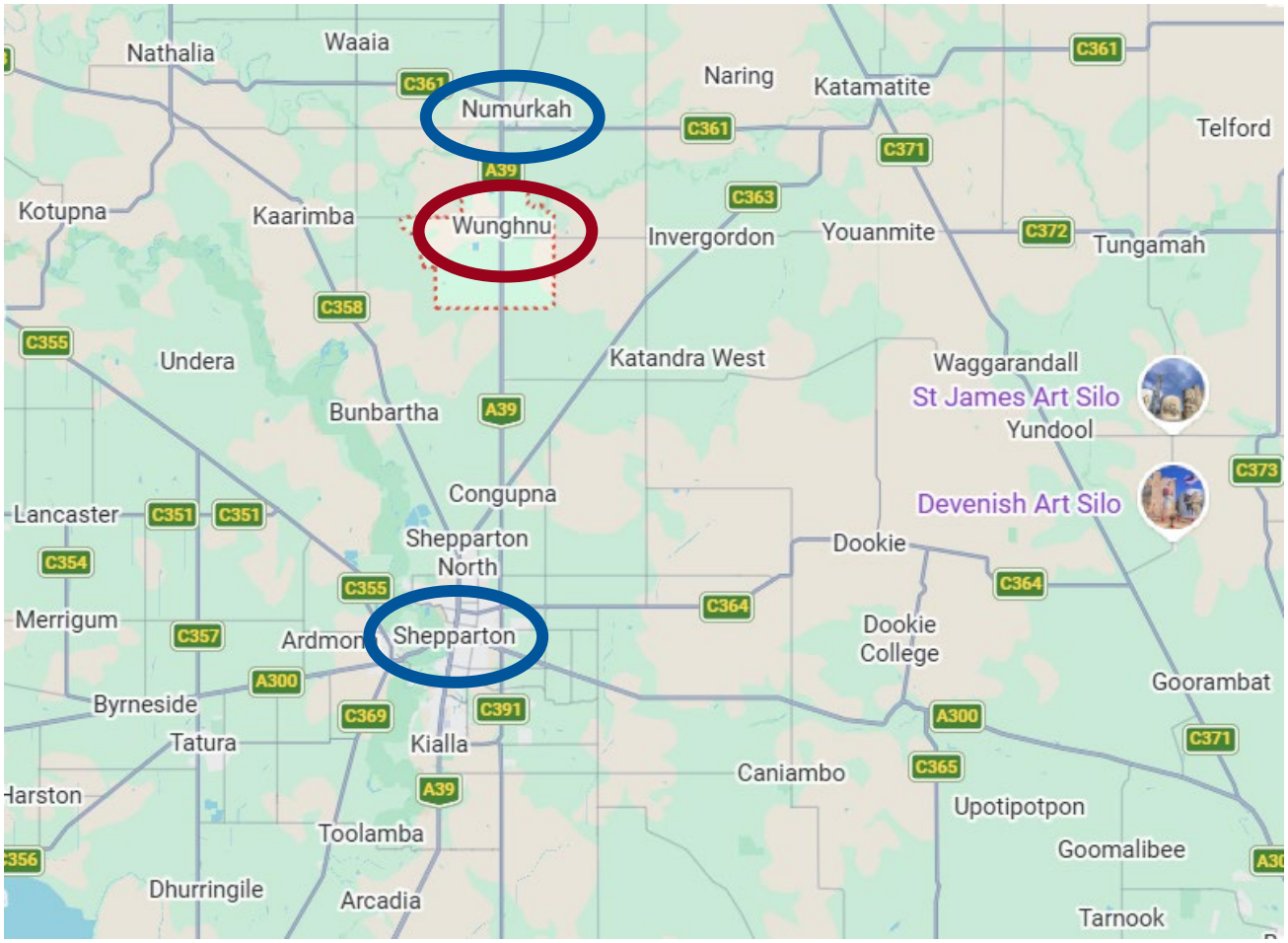
The Wunghnu Water Tower is a reinforced concrete standpipe located in Wunghnu, a town on the Goulburn Valley Highway approximately 27 kilometres north of Shepparton and 8 kilometres south of Numurkah. The tower is sited in a road reserve on the west side of Carlisle Street (the Goulburn Valley Highway) and 20 metres east of Nine Mile Creek, which flows through the adjacent Graham Park in a pronounced bend.

It is a hollow reinforced cylindrical open-roof structure measuring 15.2 metres in height and 4.27 metres in diameter. The thickness of the wall of the tower varies from approximately 90 millimetres at the top, to approximately 200 millimetres at the base. The water tower is divided into approximately twelve regular horizontal sections expressed as shallow bands, reflecting construction joints between concrete pours. A metal ladder is located on its eastern side. At the time of opening in 1906 it could hold just over 150,000 litres (40,000 gallons) of water.

A small cartoon-like image of a ewe with the words 'Welcome to Wunghnu', is bolted to the northern side of the tower ('one ewe' being a pun on 'Wunghnu').

The tower is currently fenced off for safety reasons, and a closer inspection inside this fence was not possible.

Location



Location of Wunghnu (circled in red), Moira Shire, on the Goulburn Valley Highway and railway between Shepparton and Numurkah. Wunghnu is approximately 53.8 sq km in area, and in 2021 the population was 326.

The Wunghnu Water Tower (in blue), located in the road casement of Carlisle Street/Goulburn Valley Highway (in pink), next to Nine Mile Creek (within Crown Land in grey).

Description images

2025, the Wunghnu Water Tower viewed from the north. The image of 'one ewe' is visible at the centre. Graham Park is located on the right, and the Goulburn Valley Highway (Carlisle Street) is on the left. Source: Heritage Victoria

2025, Wunghnu Water Tower as viewed from the bridge over Nine Mile Creek. This image indicates the proximity of the tower to the Creek. Source: Heritage Victoria.

2024, Photograph of concrete loss. CAF Consulting Services, Structural Assessment Report, Wunghnu Water Tower, for Goulburn Valley Water, February 2024.

History

Statement of Country

The Wunghnu Water Tower is located on Yorta Yorta country. The Yorta Yorta have an unbroken connection to the land and waters around Wunghnu from time immemorial.

Yorta Yorta Country covers some 20,000 square kilometres on both sides of the Murray River roughly from Cohuna to Albury/Wodonga. It includes towns such as Echuca, Shepparton, Benalla, Corowa and Wangaratta and extends northwards to just south of Deniliquin.

In the 1830s, European pastoralists and squatters dispossessed First Nations Peoples of their Country, including the Yorta Yorta. The Yoorrook Justice Commission (2025) has recorded how colonisation caused irreparable damage to First Peoples in Victoria through massacres, the introduction of diseases, confinement on missions and reserves, forced labour, the separation of families, and ongoing policies and practices that have resulted in systemic injustice.[1] The Yoorrook Justice Commission has also recorded how colonisation damaged and disrupted creeks and rivers to create water supply systems.[2]

The Yorta Yorta continue to live, work, practise culture and manage land and waters around Wunghnu.

Wunghnu

In the early 1840s, European settlers began to live and work on the land around Nine Mile Creek, and the township of Wunghnu was proclaimed in 1875.[3] The name 'Wunghnu' is thought to relate to an Aboriginal word meaning boomerang, reflecting the boomerang-shaped bend of Nine Mile Creek.[4] In 1901, the population was 232 and a reliable water supply was needed as Nine Mile Creek was seasonably dependent.[5] In 1903, the Numurkah Waterworks Trust proposed a gravity fed water supply system, and in 1905, Melbourne-based engineer John Monash submitted a proposal for a reinforced concrete water tower (a 'standpipe') using the new Monier construction system.[6]

John Monash and the Monier system

John Monash (1865–1931) was a notable Australian military commander and civil engineer. He introduced reinforced concrete to Victoria as the principal licensee of the Monier reinforced concrete system from 1897 until the patent expired around 1910.[7] From 1905, Monash was the director of the prolific Reinforced Concrete & Monier Pipe Construction Company (RCMPC). Monash constructed his first reinforced concrete water tank using the Monier system at Kiama in 1899. This broad ground-level tank is now included in the NSW Heritage Register as the first reinforced concrete water tank in Australia.

In Victoria, Monash's first reinforced concrete water tank was completed in 1903, at Caldermeade (a ground-level tank at the MacMillan Brothers' property, now demolished). Monash was an innovative, ambitious and entrepreneurial engineer, and applied the Monier system to various structures, one of the most successful being Monier arch bridges. Between 1899 and approximately 1910, he took a lead in designing and constructing eighteen bridges in Victoria, several of which are included in the VHR.[8]

Despite the potential of the Monier system, some early structures 'were seriously flawed'.[9] In the early 1900s, the engineering theory behind rendering reinforced concrete impervious to water was not always well understood, and its application was constantly being refined.[10] In 1901, one of Monash's bridges, Kings Bridge at Bendigo (VHR H1935), collapsed during load testing.[11] In 1902, a Monier sewer aqueduct in Sydney was reported to be 'cracked in many places', and the Caldermeade tank leaked after completion.[12] Water leakage was a persistent problem in Monash's reinforced

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[1] Yoorrook Justice Commission, *Truth be Told*, 2025.
[2] Yoorrook Justice Commission, *Truth be Told*, 2025, p. 46.
[3] See Huddle, L., 2007, *Moira Shire Stage Two Heritage Study*, Moira Shire Council and Heritage Victoria, p. 89.
[4] Further research is needed to establish the history of the name. Any known Aboriginal meaning for Wunghnu is not listed in the Gambay - First Languages Map.
[5] For population data see Victorian Places - Wunghnu; 'Wunghnu Items', *Numurkah Leader*, 27 April 1895, p. 5; 'Wunghnu Water Supply', *Numurkah Leader*, 11 September 1903, p. 2.
[6] Tender proposal dated 11 October 1905, Job File No. 591, Reinforced Concrete and Monier Pipe Construction Co. Pty Ltd, Melbourne University Archives. See also Carol Ann Dubie, *The Architecture and Engineering of Elevated Water Storage Structures: 1870–1940*, MA Thesis, George Washington University, 1980, p. 55.
[7] The licence was held by Carter Gummow & Co Sydney (1892-98), then Monash and Joshua Anderson 1897-1902, then by Monash for his company Reinforced Concrete & Monier Pipe Construction Co Pty Ltd (RCMPC).
[8] Owen Peake, 'John Monash and His Innovative Bridge Designs', *Engineering Heritage Australia*, Vol. 1, No. 5, December 2014.
[9] Dubie, *The Architecture and Engineering of Elevated Water Storage Structures*, pp. 55–56.
[10] Scott Munter and Eric Lume, 'Guide to Historical Steel Reinforcement in Australia', *Steel Reinforcement Institute of Australia*, 2019. Context Pty Ltd, *Victoria Water Supply Heritage Study*, Heritage Victoria, Melbourne, 2007, p.64.
[11] This was built when Monash was in partnership with Joshua Anderson and this event saw the dissolution of their company in 1902.
[12] See 'Monier Arch Condemned', *Evening News* (Sydney), 24 July 1902, p.8.

concrete water tanks and towers. As engineering historians have noted, this issue was to 'bedevil relations' between Monash and municipal engineers over the subsequent years.[13]

The Wunghnu Water Tower

After building another ground level tank at Gisborne (1905, demolished), Monash constructed a 'standpipe' at Wunghnu in 1906. This form comprised a tall thin-shelled cylindrical structure filled with water via a pump at ground level. It was the first reinforced concrete standpipe in Victoria and represented a different approach to his ground level tanks and the 'iron tanks on masonry tower' technology in wide use since the 1850s. Like elevated iron tanks, the height of the standpipe created water pressure to supply a gravity-fed reticulation system. The difference was that standpipes were cheaper and quicker to build, and Monash claimed, in the case of Wunghnu, were less prone to deterioration and required fewer repairs.[14]

The Wunghnu Water Tower was built in five weeks and opened on 7 March 1906. At 15.2 metres (50 feet) high, it was the tallest reinforced concrete structure in Australia upon construction.[15] An oil engine in an adjacent pumping house to the north (now demolished) pumped water from the Nine Mile Creek up into the tower.[16] The public were concerned about the soundness of this unproven structure and 'were looking forward anxiously to the result, the contractor [Monash himself] especially being deeply interested'.[17] Perhaps understanding well the vulnerabilities of the new construction technique, Monash 'guaranteed it for twelve months' — a relatively short period for a significant financial investment.[18] Indeed, works were required to address leaks after it was filled.[19]

Wunghnu became the prototype for the identical standpipes at Katamatite (1909), Tungamah (1909) and St James (1909), and was the first in a series of reinforced concrete water towers across northern and western Victoria. These were developed iteratively in their form, height, materials and construction methods and many are still extant.

The evolution of 'tank-on-tower'

Monash next applied the Monier system to a new water tower form: the 'tank-on-tower'. This represented a significant evolution from the standpipe and became its successor.[20] The tank-on-tower form comprised a water-bearing tank atop a hollow cylindrical structural shaft. This concentrated the water load in a dedicated vessel at the top and reduced the waterproofing demand on the full height of the cylinder. This made it more structurally resilient, and able to hold higher volumes of water than the standpipe design.

In 1912, Monash completed the first tank-on-tower water towers at Mildura and Tatura. Both are extant.

- *Mildura (February 1912):* 25.6 metres (83.84 feet); internal tank diameter 8.84 metres (29 feet); 455,000 litres (100,000 gallons) capacity.[21] This tower is now partially subsumed within a hotel carpark.
- *Tatura (April 1912):* 27.7 metres (93 feet) in height; internal tank diameter 7.92 metres (26 feet); 363,688 litres (80,000 gallons) capacity.[22] This tower retains its setting and a series of water trust buildings. The State Rivers and Water Supply Commission (SRWSC) built one of its first offices in Tatura in 1906.

Monash and his RCMPC Company had few competitors. After the Monier patent expired around 1910, however, it was possible for others to use the technology. In 1913, the SRWSC built an 18 metres (59 feet) high tank-on-tower reinforced concrete water tower in Werribee for the supply of town water (extant).[23] In 1906, the SRWSC was established to support local water trusts, and directly built some town water supply infrastructure, including in the Wimmera-Mallee region during the 1920s.[24]

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[13] See Holgate, Alan, *John Monash Tanks and Silos*, Monash University Department of Civil Engineering, Melbourne, 2000. p. 7; Context, *Victoria Water Supply,* p.25. Also see Michael S. Salu and Dion T. Turner, 'History, Current Practice and Future Developments in Australian Concrete: Water Storage Structures', in *Proceedings of Concrete 2019*; C&MJ Doring, *Conservation management plan for the Bairnsdale Pumping Station and reservoirs*, prepared for East Gippsland Shire Council and East Gippsland Water, Whitlands, Victoria, October 2001, p.13. For reports on leaks see 'St James and District by Our Special Representative', *Benalla Standard*, 9 September 1910, p.4; 'Fyansford Bridge', *Geelong Advertiser,* 4 April 1906, p. 2.

[14] Tender proposal dated 11 October 1905, Job File No. 591, Reinforced Concrete and Monier Pipe Construction Co. Pty Ltd, Melbourne University Archives. See also Carol Ann Dubie, The Architecture and Engineering of Elevated Water Storage Structures: 1870–1940, MA Thesis, George Washington University, 1980, p. 55.

[15] 'Wunghnu Water Trust: Opening of Reticulation Scheme', *Numurkah Leader*, 11 March 1906, p. 2.

[16] 'Wunghnu Water Trust: Opening of Reticulation Scheme', *Numurkah Leader*, 11 March 1906, p. 2.

[17] 'Wunghnu Water Trust: Opening of Reticulation Scheme', *Numurkah Leader*, 11 March 1906, p.2

[18] 'Wunghnu Water Trust: Opening of Reticulation Scheme', *Numurkah Leader*, 11 March 1906, p. 2.

[19] 'Extract from Meldrum's letter, 30 May 1906', Job File No. 591, Melbourne University Archives, Alan Holgate, John Monash Tanks and Silos, Monash University Department of Civil Engineering, 2000, p. 9.

[20] See Dubie, *The Architecture and Engineering of Elevated Water Storage Structures*, p. 55. Goulburn Valley Water, 'Tatura Water Tower Project', https://www.gvwater.vic.gov.au/community/community-projects/tatura-water-tower-project; 'Mural Adds Colour to Tatura's Landscape', The Shepparton Adviser, 30 June 2021.

[21] Alan Holgate, *John Monash Tanks and Silos*, p.51.

[22] Goulburn Valley Water, Tatura Water Tower Project [Accessed 23 July 2026].

[23] See Nigel Lewis, Submission to Government Land Standing Advisory Committee, Proposed Amendment to the Wyndham Planning, Scheme At 1 Tower Road (2 Princes Highway) Werribee, 26 July 2018. The facility also included a large square open sunken concrete or stone lined tank, a caretakers house. Both this tower and the SRWSC district office was built at the complex in 1926, are extant.

[24] Context, *Water Supply Study,* p.22 and 51.

Apart from the Werribee tower, there appear to be few pre-World War I reinforced concrete water towers designed by engineers other than Monash, and certainly no standpipes. Monash dominated reinforced concrete construction in Victoria because he was the original licensee of the Monier patent, mastered the technology and had an entrepreneurial flair. Monash's continued refinement of reinforced concrete technology was demonstrated at the water tower at Commonwealth Woollen Mills in North Geelong (1914) which appears to be a one-off hybrid of the standpipe and tank-on-tower forms.

Reinforced concrete technology after World War I

After the First World War, Monash moved away from direct involvement in engineering and construction and withdrew from active involvement in his companies in 1920. The attribution of him as the designer of the Nagambie tank-on-tower structure in 1928, appears to be an exception. Monash's withdrawal provided a significant opening for other engineering firms and government agencies to further develop and use reinforced concrete technologies during a time of Victoria's growth.

A small number of standpipes were constructed during the 1920s, including the SRWSC water towers at Merbein (1920) and Red Cliffs (1924). Along with the one at Devenish (1925), whose designer has yet to be identified, these are all extant.[25] There is no indication that John Monash was involved in the design or build of these. In the postwar era, standpipes were cheaper to build but became less common because of the superiority of the 'tank-on-tower' form.

Soldier settlement schemes and development in rural and remote Victoria saw the construction of an unprecedented number of reinforced concrete water towers and wheat silos. During the 1920s, concrete technology entered a new phase bolstered by ingenious systems of movable formwork, like slip forming, and pre-stressing reinforced concrete to improve water retention.[26] From the mid-1930s, the Grain Elevators Board built upwards of 91 grain elevators (silos) at 81 country railway stations in Victoria.

Ultimately the 'tank-on-tower' form became the most recognisable early to mid-twentieth century water tower form in Victoria, well into the 1950s. After World War II, the mastering of engineering and construction techniques used in water towers and silos opened the door to high-rise concrete construction methods still critical today for infrastructure and high-rise buildings.[27]

Monash died in 1931 after a stellar postwar career as Chairman of the newly established SEC (State Electricity Commission). He was a driving force in the construction of the Shrine of Remembrance and was Vice-Chancellor of the University of Melbourne.

Decommissioning of the Wunghnu standpipe

By the 1950s, the Wunghnu Water Tower was described as 'in bad repair as water has leaked through and rusted the reinforcement' and the internal and external surface concrete had spalled.[28] In the late 1970s, after decades of public health concern, a water pipeline from Numurkah to Wunghnu was constructed. The 1906 water tower was decommissioned in the 1980s.

Wunghnu's 'one ewe' mural/sign

The Wunghnu Water Tower has a small, humorous cartoon-like image of a ewe with the words 'Welcome to Wunghnu', bolted to the northern side of the tower ('one ewe' being a pun on 'Wunghnu'). It is understood that this was painted in 1998 by a sign writer from Nathalia and repainted in 2006 by an artist from Shepparton.[29] The One Ewe Mural (which could equally well be called a sign, due to its method of attachment) is typically not listed in online inventories of Victoria's silo art. This is likely because its small cartoon-like form falls outside the generally recognised parameters of this creative genre.

25 On Devenish, see 'Devenish', *Benalla Standard,* 29 Sept 1925, p.3. Also 'Devenish Water Supply', Benalla Standard 15 Aug 1916, p.3; 'Devenish Water Supply', Benalla Standard, 12 Oct 1915, p.3.
[26] See Seeds of Concrete Progress: Grain Elevators and Technology Transfer between America and Australia - Royal Historical Society of Victoria; Dubie, The Architecture and Engineering of Elevated Water Storage Structures, pp. 55–56.
[27] See Seeds of Concrete Progress: Grain Elevators and Technology Transfer between America and Australia - Royal Historical Society of Victoria
[28]Shire of Numurkah Waterworks Trust: Wunghnu Water Supply, second report, 24 February 1956, in PROV, VPRS 6008/P9, file 59/5890.
[29]Lorraine Huddle, Moira Shire Stage Two Heritage Study 2007, Volume Three of Five: Group and Individually Significant Places, 2007, p. 235.

The silo art movement

The term ‘silo art’ is generally accepted to mean the practice of painting massive murals on large historic decommissioned silos and water towers, typically located in remote areas across Australia. In Victoria, it is generally thought to have started in 2016 with the painting of six 30-metre-high portraits of locals on disused grain silos at Brim, north of Warracknabeal. Since then, the silo art movement has grown, and murals are common across northwest Victoria. There are now ‘silo art trails’ for tourists and memorabilia, including silo art calendars. Victoria now has an estimated 29 locations with silo murals, and approximately 27 locations with painted water towers/tanks.

The Tatura Water Tower features a giant mural of General Sir John Monash, painted in 2021 to honour his distinguished military service and contribution to engineering. It has received widespread public recognition for its landmark qualities. It is located on one of Monash’s early reinforced concrete water towers, of the tank-on-tower form (1912). This is located within an extant town water supply complex which retains early water infrastructure buildings.

Table 1

Pre-1916 reinforced concrete water tanks and towers in Victoria. All but one were designed by engineer John Monash/ Reinforced Concrete & Monier Pipe Construction Company (RCMPC). **Blue highlighting indicates standpipes**.

Completed	Lead engineer/ designer	Location	Form	VHR/HO	Largely retains setting	Retains town water supply infrastructure	Silo art
December 1903	Monash	Caldermeade ***Demolished***	Ground level	NA	NA	NA	NA
1905	Monash	Gisborne ***Demolished***	Ground level	NA	NA	NA	NA
March 1906	Monash	Wunghnu	Standpipe	HO206	Yes	No	Yes
~July 1906	Monash	Bairnsdale	Ground level	Part of VHR H2040	Yes	Yes	No
1908	Monash	Pyramid Hill ***Demolished***	Standpipe	NA	NA	NA	NA
Dec 1909	Monash	Katamatite	Standpipe	HO101	Yes	No	No
1909-10	Monash	Tungamah	Standpipe	No	Yes	No	No
1909-10	Monash	St James	Standpipe	No	Yes	No	No
Monier patent expired (~1910)							
March 1912	Monash	Mildura (FMIT)	Tank-on-tower	HO49	No. In a carpark.	No	No
April 1912	Monash	Tatura	Tank-on-tower	HO117	Yes	Yes	Yes
October 1912	Monash	Mont Park (Gresswell Hill)	Ground level	No	Yes	No	No
August 1913	Monash	Charlton	Ground level	No	Yes	No	Yes
1913	SRWSC	Werribee	Tank-on-tower	HO100	Yes	Retains SRWSC office	Yes
1914	Monash	Wahgunyah ***Demolished***	Standpipe	NA	NA	NA	NA
October 1914	Monash	Commonwealth Woollen Mills Water Tower	Tank-on-low tower (hybrid)	No. Outside Federal Woollen Mills VHR extent (H1938). No HO.	Yes	No	Yes
October 1914	Monash	Rochester Tank	Tank-on-tower	HO217. Metal tank not original	Yes	Possibly?	No
Nov 1914	Monash	Tongala Tank	Tank-on-tower	HO511	Yes	Possibly?	No
March 1915	Monash	Echuca	Tank-on-tower	HO2	No	No	No
1915	Monash	Murtoa ***Demolished***	Standpipe	NA	NA	NA	NA
1916	Monash	Mortlake ***Demolished***	Standpipe	NA	NA	NA	NA

The SRWSC constructed the Werribee tank-on-tower constructed in 1913.[30] Research for this report has indicated that this SRWSC tower was the only reinforced concrete water tower constructed by a designer/engineer other than Monash between 1910 (the expiry of the Monash's Monier patent license) and 1914. In this instance, the SRWSC most likely chose the tank-on-tower form because it showed more promise structurally and offered a greater water capacity.

Summary of Table 1

Known pre-1916 reinforced concrete water tanks and towers.

Ground-level tanks constructed	Standpipes constructed	Tank-on-tower constructed
5	8	7
Ground-level tanks extant	**Standpipes extant**	**Tank-on-tower extant**
3	4	6

[30] Adapted and updated from Alan Holgate, *John Monash Tanks and Silos* (2000).

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'Wunghnu' in *Victorian Places*, University of Melbourne and Monash University. Available at: https://www.victorianplaces.com.au/wunghnu.

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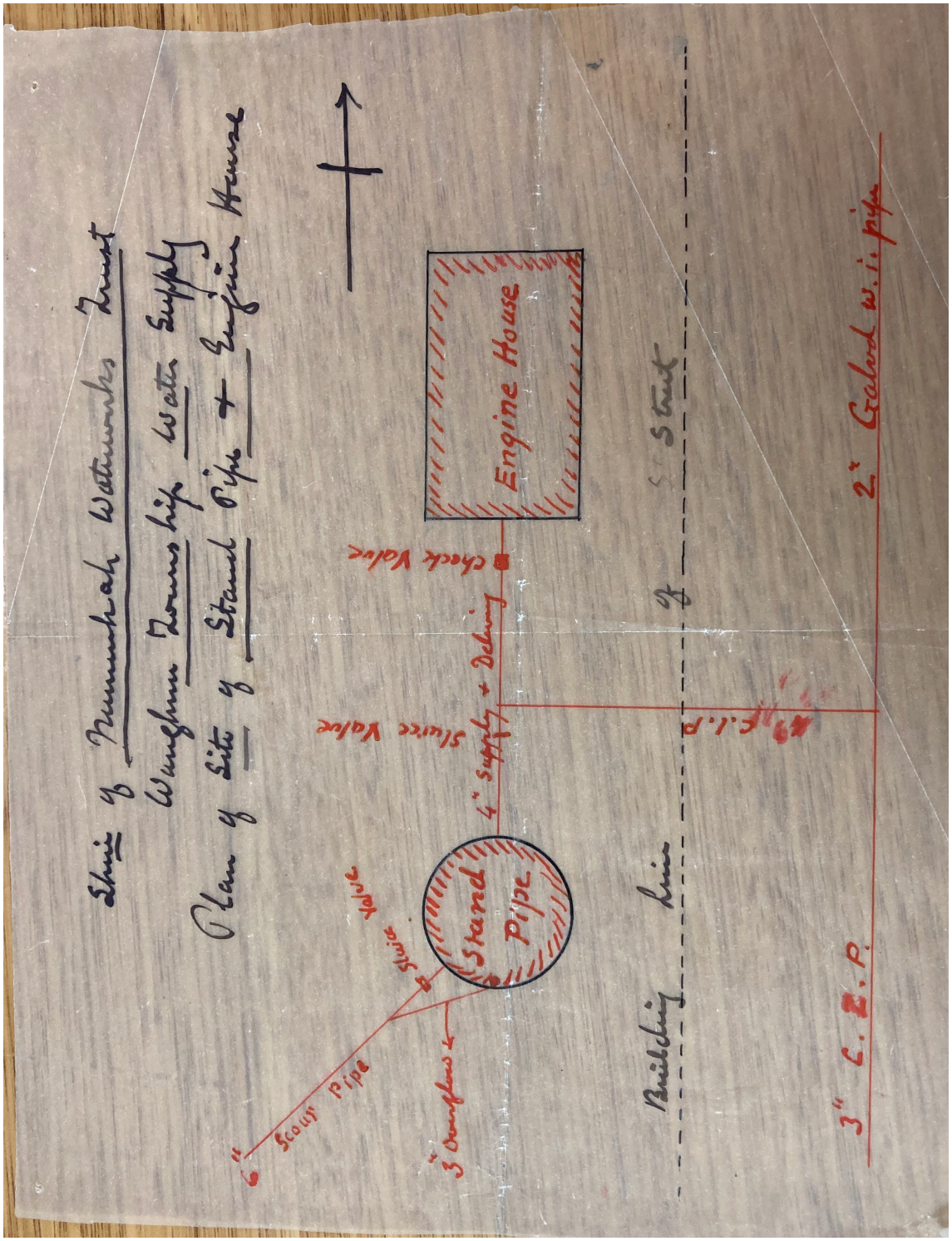
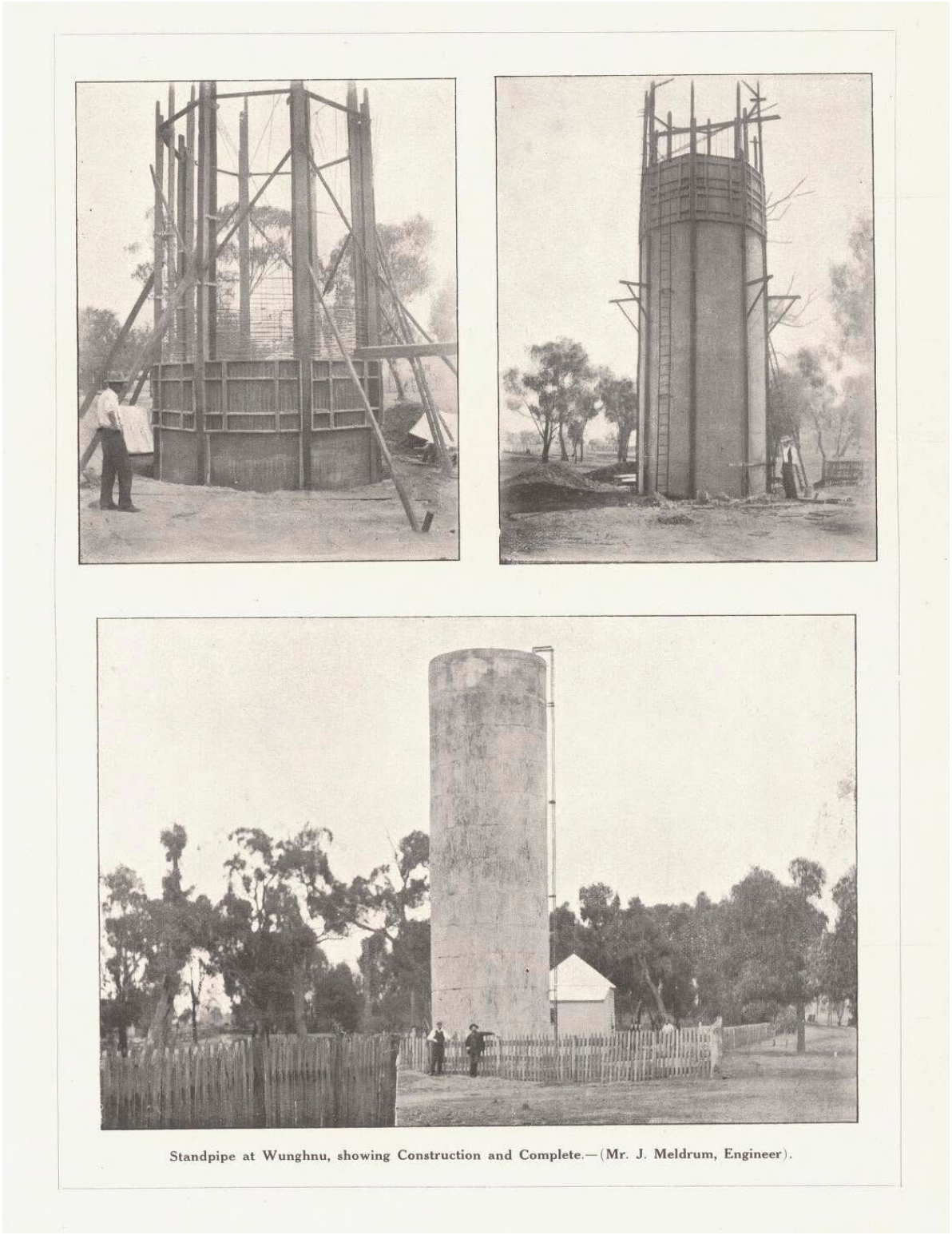
Historical images



Late 1905, drawing shows the Wunghnu Water Tower and the engine (pump) house to the north. Source: Job File No 591: Wunghnu Water Tower, Reinforced Concrete and Monier Pipe Construction Co. Pty Ltd Melbourne University Archives.

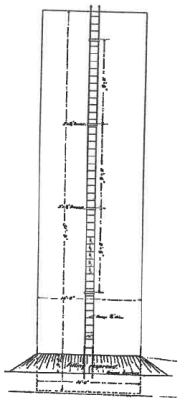


c.1907, Wunghnu Water Tower view to the northwest from the road. This is an extract from pamphlet advertising the merits of reinforced concrete. Wunghnu local Mark McNamara posted this on Facebook by on 12 February 2026, stating that it had come from John Monash's papers, held in the University of Melbourne Archives. The upper right image shows materials ready for making concrete (possibly sand and aggregate). The lower image shows the original access ladder on the tower, and the pumping house to the north. Source: Facebook

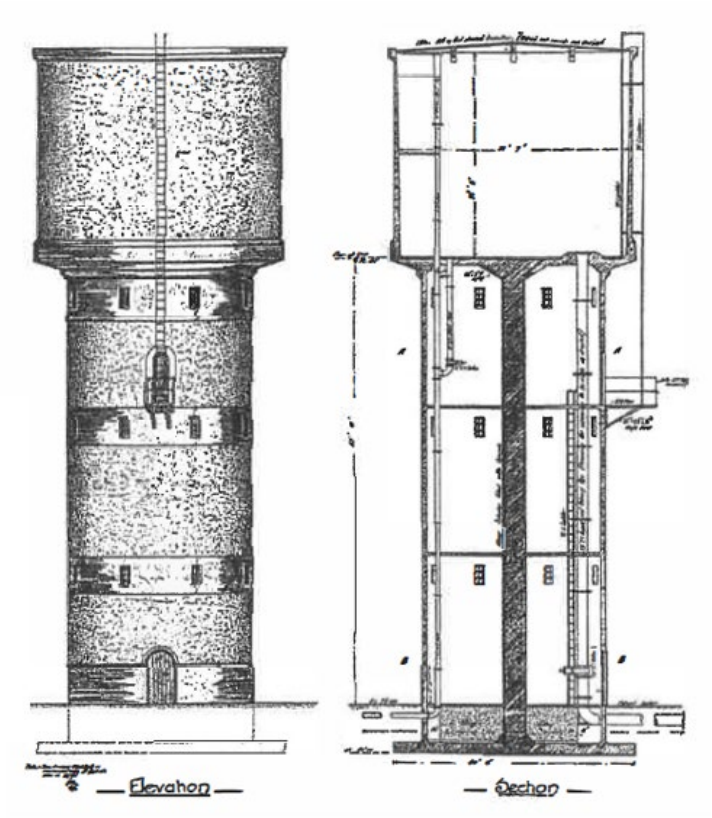
1909, Water Tower at Wunghnu, Postcard (hand painted), standpipe Water Tower with pumping/engine house (to the left), ground level structure (to the right) likely used to fill up a portable tank or barrel on the back of a cart. Source: Lost Shepparton Facebook page.

c.1907, Wunghnu Water Tower with the pumping house. Source: Item UMA-ITE-1964001200850, Melbourne University Archives.

1956. The plan shows the Wunghnu town water supply reticulation system that was connected to the Wunghnu Water Tower. The small white circles denote a water outlet at homes or businesses. The red lines denote water mains pipes proposed in 1956. Source: PROV, VPRS 6008/P9, file 59/5890.



*John Monash, **Wunghnu Water Tower**, designed Oct-Nov 1905. Height: 15.2m (50ft).*



*John Monash, **Mildura Water Tower**, designed Jan-Feb 1911. This became the typical form adopted by Monash for water towers. Height: 25.6m (83.84ft), being the cylindrical shaft (17.5m) and tank (8.5m).*

In sizing the above images of water towers at Wunghnu (completed 1906) and Mildura (completed 1912), an attempt has been made to show the height of the towers in relation to one another. This is indicative to demonstrate the development of the technology.[31]

[31] Images sourced from Alan Holgate, *John Monash Tanks and Silos*, p.32 & 49.

Further information

Registered Aboriginal Party information

The Wunghnu Water Tower is located on Yorta Yorta Country.

Native Title

This place is not subject to a Native Title determination or Traditional Owner agreement.

Victorian Aboriginal Heritage Register

The place is in an area of Aboriginal cultural heritage sensitivity associated with the Nine Mile Creek.

(24 June 2026)

Integrity

Although the facility has lost its associated pumping house, the integrity of the water tower is good. The cultural heritage values of the Wunghnu Water Tower can be read in the extant fabric.

The Wunghnu Water Tower can be read as a 1906 reinforced concrete water tower.

(24 June 2026)

Intactness

The intactness of the place is variable. Sections of concrete have fallen off the exterior of the structure. The pumping house and other fabric evident in photos has been removed.

(24 June 2026)

Condition

The condition of the Wunghnu Water Tower is poor. There are clearly visible signs that the internal reinforcing has corroded causing concrete loss. Further information about the condition of the structure is available on the Goulburn Valley Water *Wunghnu Water Tower* website.

(24 June 2026)

Note: The condition of a place or object does not influence the assessment of its cultural heritage significance. A place or object may be in very poor condition and still be of very high cultural heritage significance. Alternatively, a place or object may be in excellent condition but be of low cultural heritage significance.

Other information

Heritage Overlay: HO206, Wunghnu Water Tower, Moira Shire

Other relevant planning scheme overlays: The place is subject to a Rural Floodway Overlay (RFO).

Other Listings: There are no other listings.

Other Names: There are no other widely known names for the Wunghnu Water Tower.

Date of construction/creation: 1906

Designer/Engineer: John Monash

Era of construction: Federation/ Edwardian era

Statutory requirements under section 40

Terms of the recommendation (section 40(3)(a))

The Executive Director recommends that the Wunghnu Water Tower is included in the VHR.

Information to identify the place or object or land (section 40(3)(b))

Number: PROV H2477

Category: Registered place

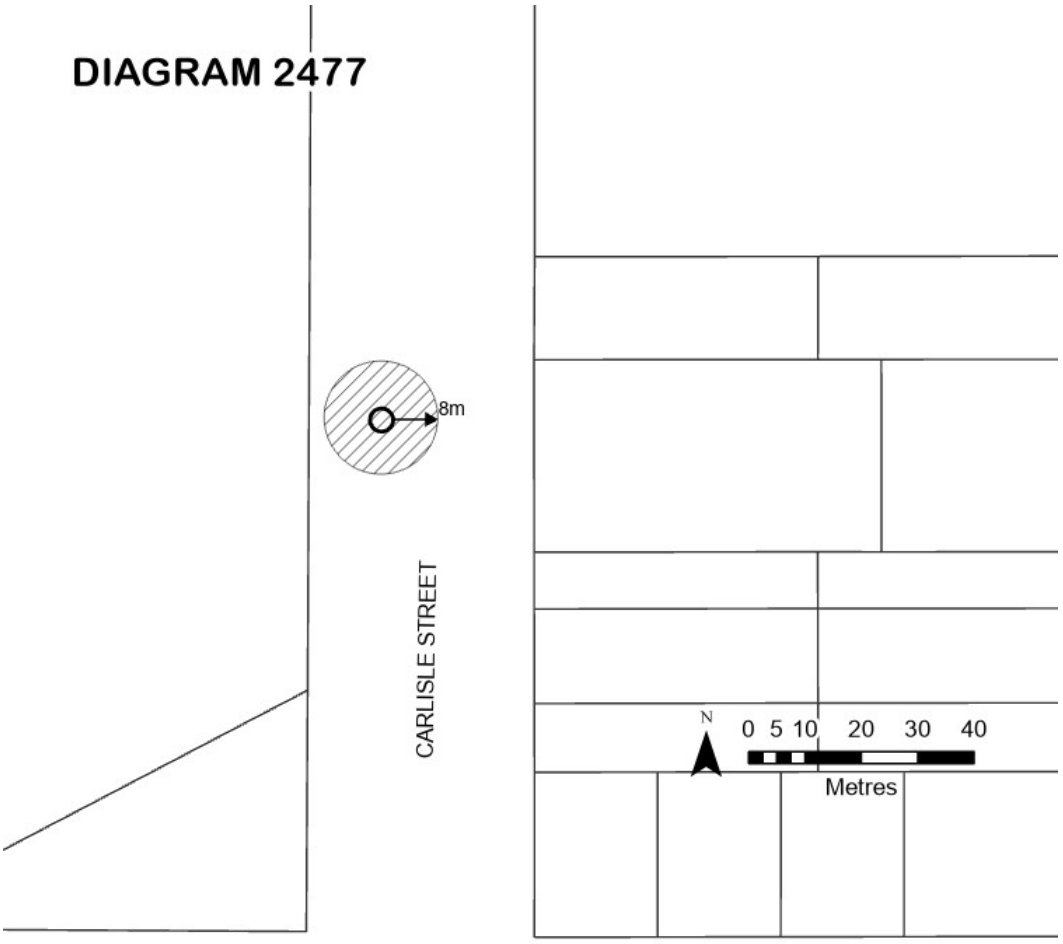
Name: Wunghnu Water Tower

Location: Carlisle Street, Wunghnu

Municipality: Moira Shire

Proposed extent of registration

The Executive Director recommends that the extent of registration for the Wunghnu Water Tower be gazetted as: All of the place shown hatched on Diagram 2477 encompassing part of the road reserve or Carlisle Street to the extent of 8 metres from the base of the Wunghnu Water Tower.



Non-statutory information about the proposed extent of registration

Aerial photo of the place showing proposed extent of registration.

Note: This aerial view provides a visual representation of the place. It is not a precise representation of the recommended extent of registration. Due to distortions associated with aerial photography some elements of the place may appear as though they are outside the extent of registration.

Legend

Pink – Road casement

Grey – Crown land

Red circle – Proposed extent for the Wunghnu Water Tower

Rationale for the proposed extent of registration

The recommended extent of registration comprises all of the Wunghnu Water Tower structure and an 8-metre circular area of land measured from the base of the water tower. The proposed extent *excludes* any part of:

- the hard shoulder of the road (to the east)
- the Crown land (to the west).

The recommended extent of the registration is the same as the nominated extent of registration.

It should be noted that everything included in the proposed extent is part of the registration. This includes the Wunghnu Water Tower structure and all of the land surrounding the tower. A permit or permit exemption from Heritage Victoria is required for any works within the proposed extent of registration, apart from those identified in the categories of exempt works or activities in this recommendation.

Reasons for the recommendation, including an assessment of the State-level cultural heritage significance of the place (section 40(3)(c))

Following is the Executive Director's assessment of the Wunghnu Water Tower against the tests set out in *The Victorian Heritage Register Criteria and Thresholds Guidelines (2022)*. A place or object must be found by the Heritage Council to meet Step 2 of at least one criterion to meet the State level threshold for inclusion in the VHR.

This assessment has been made against the following historical theme and heritage class:

Historical theme

The development of town water supply systems

Heritage class and sub-class

Reinforced concrete water towers

CRITERION A: Importance to the course, or pattern, of Victoria's cultural history.

Step 1 Test for Criterion A

No.	Test	Yes/No	Reason
A1)	Does the place/object have a clear association with an event, phase, period, process, function, movement, custom or way of life in Victoria's cultural history?	Yes	Wunghnu Water Tower has a clear association with the following phase in Victoria's cultural history: • The development of town water supply systems.
A2)	Is the event, phase, period, process, etc of historical importance, having made a strong or influential contribution to Victoria?	Yes	This phase is of historical importance, having made a strong and influential contribution to Victoria.
A3)	Is there evidence of the association to the event, phase, period, process, etc in Victoria's cultural history?	Yes	There is evidence of the association between Wunghnu Water Tower and the historical theme.
If A1, A2 and A3 are <u>all</u> satisfied, then Criterion A is likely to be relevant (but not necessarily at the State level)			
Executive Director's Response:		Yes	Criterion A is likely to be relevant.

Step 2 State-level test for Criterion A

No.	Test	Yes/No	Reason
SA1)	Does the place/object allow the clear association with event, phase, period, process, etc of historical importance to be understood better than most other places or objects in Victoria with substantially the same association?	No	The Wunghnu Water Tower **does not** allow the association with the **development of town water supply systems** to be better understood than most other similar places or objects in Victoria with substantially the same association. There are many places and objects associated with this historical theme, including water towers. Although an important part of town water supply systems, water towers by themselves, demonstrate only part of the supply system. The Wunghnu Water Tower, does not retain its pump, pumping house and a pipe from which a barrel on a cart or truck could be filled. It does not allow the development of town water supply systems to be understood as clearly as more intact places which retain associated infrastructure.

		There are a number of places that have been included in the VHR because they retain multiple elements (for example pumphouses) that demonstrate the processes involved in the supply of town water including the Benalla Water Supply Depot (VHR H1048) and Bairnsdale Pumping Station (VHR H2040).
If SA1 is satisfied, then Criterion A is likely to be relevant at the State level		
Executive Director's Response:	No	Criterion A is not likely to be relevant at the State level.

CRITERION B: Possession of uncommon, rare or endangered aspects of Victoria's cultural history.

Step 1 Test for Criterion B

No.	Test	Yes/No	Reason
B1)	Does the place have a clear association with an event, phase, period, process, etc of importance in Victoria's cultural history?	Yes	The Wunghnu Water Tower has a clear association with the following historical theme of importance in Victoria's cultural history: the development of town water supply systems.
B2)	Is there evidence of the association with B1)?	Yes	There is evidence of the association between Wunghnu Water Tower and the historical theme.
B3)	Is there evidence that place/object is: rare or uncommon, or has rare or uncommon features?	Yes	B3(i) There is evidence that Wunghnu Water Tower (1906) is rare as an early reinforced concrete water tower standpipe constructed in Victoria. Moreover, it was the first reinforced concrete water tower in the State (a tall vertical tower rather than ground-level tank).
If B1, B2 AND B3 are satisfied, then Criterion B is likely to be relevant (but not necessarily at the State level)			
Executive Director's Response:	Yes	Criterion B is likely to be relevant.	

Step 2 State-level test for Criterion B

No.	Test	Yes/No	Reason
SB1)	Is the place rare or uncommon, being one of a small number of places/objects remaining that demonstrates B1)?	No	The Wunghnu Water Tower is not rare or uncommon being one of a small number of places/objects remaining that demonstrates the development of town water supply systems in Victoria.
SB2)	Is the place rare or uncommon for: containing unusual features; and these features are of note; and these features were not widely replicated in Victoria?	Yes	The Wunghnu Water Tower is **rare and uncommon** because of its standpipe form which was unusual for the time. The standpipe form is **of note** because it represents a key evolutionary phase in the development of reinforced concrete water towers in Victoria. The standpipe form was **not widely replicated in Victoria**. Wunghnu is thought to be one of 8 reinforced concrete standpipes associated with John Monash, four of which survive: 1. Wunghnu (1906) 2. Katamatite (1909) 3. Tungamah (1909) 4. St James (1909) 5. Pyramid Hill (1909) (demolished) 6. Wahgunyah (1914) (demolished) 7. Murtoa (1915) (demolished) 8. Mortlake (1916) (demolished). Research for this report has identified only one additional extant reinforced concrete standpipe in Victoria. This is at Devenish (1925).
SB3)	Is the existence of the class that demonstrates B1) endangered to the point of rarity due to threats and pressures on such places in Victoria?	No	The Wunghnu Water Tower is of the **class of reinforced concrete water towers**. This demonstrates the development of town water supply systems in Victoria. This **is not endangered** to the point of rarity due to threats and pressures on water towers in Victoria.
If any <u>one</u> of SB1, SB2 OR SB3 is satisfied, then Criterion B is likely to be relevant at the State level			
Executive Director's Response:		Yes	Criterion B is likely to be relevant at the State level.

CRITERION C: Potential to yield information that will contribute to an understanding of Victoria's cultural history.

Step 1 Test for Criterion C

No.	Test	Yes/No	Reason
C1)	Does physical fabric and/or documentary evidence and/or associated oral history or cultural narratives relating to the place/object indicate a likelihood that the place/object contains evidence of cultural heritage significance that is not currently visible and/or well understood or available from other sources?	No	The: 1. physical fabric and 2. documentary evidence and 3. associated oral history or cultural narratives. relating to the Wunghnu Water Tower **do not** indicate a likelihood that it contains evidence of cultural heritage significance that is not currently visible and/or well understood or available from other sources.
C2)	And, from what we know of the place/object, is the physical evidence likely to be of an integrity and/or condition that it could yield information through detailed investigation?	N/A	The Wunghnu Water Tower is **unlikely to yield information** through investigation that is not currently visible and/or well understood or available from other sources (see C1).
If <u>both</u> C1 AND C2 are satisfied, then Criterion C is likely to be relevant (but not necessarily at the State level)			
Executive Director's Response:		No	Criterion C is not likely to be relevant.

CRITERION D: Importance in demonstrating the principal characteristics of a class of cultural places and objects

Step 1 Test for Criterion D

No.	Test	Yes/No	Reason
D1)	Is the place one of a class of place that has a clear association with an event, phase, period, process, etc in Victoria's history?	Yes	The Wunghnu Water Tower belongs to the class of reinforced concrete water towers. This class has a clear association with the development of town water supply systems in Victoria's history.
D2)	Is the event, phase, etc of historical importance, having made a strong or influential contribution to Victoria?	Yes	This historical theme has made a strong and influential contribution to Victoria.
D3)	Are the principal characteristics of the class evident in the physical fabric of the place?	Yes	The **principal characteristics of the class are evident** in the physical fabric of Wunghnu Water Tower.
If D1, D2 AND D3 are satisfied, then Criterion D is likely to be relevant (but not necessarily at the State level)			
Executive Director's Response:		Yes	Criterion D may be relevant.

Step 2 State-level test for Criterion D

No.	Test		Reason
SD1)	Is the place a notable (fine, influential or pivotal) example of the class in Victoria?	Yes	The Wunghnu Water Tower is notable as a pivotal development in the evolution of reinforced concrete water towers in Victoria. It demonstrates a key evolutionary phase being the early application of reinforced concrete construction to tall water storage towers, the height of which enabled the gravity-fed reticulation of water under pressure.
Executive Director's Response:		Yes	Criterion D is likely to be relevant at the State level.

CRITERION E: Importance in exhibiting particular aesthetic characteristics.

Step 1 Test for Criterion E

No.	Test	Yes/No	Reason
E1)	Does the physical fabric of the place clearly exhibit particular aesthetic characteristics?	Yes	The physical fabric of Wunghnu Water Tower clearly exhibits aesthetic characteristics particular to standpipe water towers. It is a tall, narrow cylindrical reinforced concrete water tower. The 'One Ewe' mural is a small cartoon-like image painted on the northern side of the tower. It demonstrates the particular aesthetic characteristics.
If E1 is satisfied, then Criterion E is likely to be relevant (but not necessarily at the State level)			
Executive Director's Response:		Yes	Criterion E is likely to be relevant.

Step 2 State-level test for Criterion E

No.	Test	Yes/No	Reason
SE1)	Are the aesthetic characteristics 'beyond the ordinary' or are outstanding as demonstrated by: i. Evidence from within the relevant discipline (architecture, art, design or equivalent); and/or ii. Critical recognition of the aesthetic characteristics of the place/object within a relevant art, design, architectural or related discipline within Victoria; and/or iii. Wide public acknowledgement of exceptional aesthetic qualities of the place/object in Victoria expressed in publications, print or digital media, painting, sculpture, songs, poetry, literature, or other media?	No	There is no evidence that the aesthetic characteristics at the place are 'beyond the ordinary' or are outstanding. The Wunghnu Water Tower is a tall, narrow cylindrical concrete water tower. Although a tall local landmark on the highway, it has received no critical recognition for its aesthetic characteristics nor widespread public acknowledgement for any exceptional qualities. The aesthetic characteristics of the 'One Ewe' mural are humorous, pleasing, and valued in the local community. But they could not be said to be 'beyond the ordinary' or outstanding as demonstrated by (i), (ii) or (iii) in the context of mural art in the state, and particularly within the Silo Art Movement.
If SE1 is satisfied, then Criterion E is likely to be relevant at the State level			
Executive Director's Response:		No	Criterion E is not likely to be relevant at the State level.

CRITERION F: Importance in demonstrating a high degree of creative or technical achievement at a particular period.

Step 1 Test for Criterion F

No.	Test	Yes/No	Reason
F1)	Does the place contain physical evidence that clearly demonstrates creative or technical achievement for the time in which it was created?	Yes	The Wunghnu Water Tower contains physical evidence that clearly demonstrates technical achievement for the time in which it was created. The tower demonstrates the early application of reinforced concrete to water towers.
F2)	Does the physical evidence demonstrate a high degree of integrity?	Yes	The physical evidence at Wunghnu Water Tower demonstrates a high degree of integrity. The tower can be clearly read as an early reinforced concrete water tower.
If both F1 and F2 are satisfied, then Criterion F is likely to be relevant (but not necessarily at the State level)			
Executive Director's Response:		Yes	Criterion F is likely to be relevant.

Step 2 State-level test for Criterion F

No.	Test	Yes/No	Reason
SF1)	Is the nature and/or scale of the achievement of a high degree or 'beyond the ordinary' for the period in which it was undertaken as demonstrated by one or more forms of evidence: • evidence from within the relevant creative or technological discipline that recognises the place/object as a breakthrough in terms of design, fabrication or construction techniques and/or as a successful solution to a technical problem that extended the limits of existing technology; • critical acclaim of the place/object within the relevant creative or technological discipline as an outstanding example in Victoria; • wide acknowledgement of exceptional merit in Victoria in media such as publications or print/digital media; • recognition of the place/object as an outstanding example of the creative adaptation of available materials and technology of the period?	Yes	There is evidence that the Wunghnu Water Tower was 'beyond the ordinary' in relation to its design, engineering and materials, for the period in which it was developed. It was the first reinforced concrete water tower constructed in the State. Built in an untested standpipe form, it was the highest concrete structure in Australia when completed in 1906. There is evidence from the discipline of engineering which recognises the Wunghnu Water Tower as a breakthrough in terms of design, fabrication and construction techniques (see the History section above). Although the Wunghnu Water Tower was beset with leaks and cracks, and Monash only guaranteed it for one year, the application of reinforced concrete technology at this place remains 'beyond the ordinary' for its time. In the early 1900s, the engineering theory related to making reinforced concrete impervious to water was not always well understood, and its application was constantly being refined. The Wunghnu Water Tower represents the early phase of the iterative technological process to refine the application of reinforced concrete to water retaining structures. A lineage can be traced from the Wunghnu standpipe to the more resilient and higher capacity 'tank-on-tower' design, constructed from the 1920s until the 1960s and ubiquitous in Victoria today.
If SF1 is satisfied, then Criterion F is likely to be relevant at the State level			
Executive Director's Response:		Yes	Criterion F is likely to be relevant at the State level.

CRITERION G: Strong or special association with a particular present-day community or cultural group for social, cultural or spiritual reasons

Step 1 Test for Criterion G

No.	Test	Yes/No	Reason
G1)	Does the place demonstrate social value to a community or cultural group in the present day in the context of its cultural heritage significance? Evidence must be provided for all three facets of social value listed here:		
i)	Existence of a community or cultural group; and	Yes	There is evidence that a community or cultural group exists – the Wunghnu community.
ii)	Existence of a strong attachment of a community or cultural group to the place or object; and	Yes	There is evidence of a strong attachment of the Wunghnu Community to the Wunghnu Water Tower in the present day. The water tower has the 'One Ewe' (Wunghnu) mural on it. This small, humorous cartoon-like image is valued within the community and demonstrates its strong attachment to the place in the present day.
iii)	Existence of a time depth to that attachment.	Yes	There is evidence of the attachment dating to 1906. The Wunghnu Water Tower has been an important part of community life since its construction.
If <u>all facets</u> of G1 are satisfied, then Criterion G is likely to be relevant (but not necessarily at the State level)			
Executive Director's Response:		Yes	Criterion G is likely to be relevant.

Step 2 State-level test for Criterion G

No.	Test	Yes/No	Reason
SG1)	Is there evidence that the social value resonates across the broader Victorian community as part of a story that contributes to Victoria's identity?	No	SG1(i) The social value of the Wunghnu Water Tower is part of a story in Victoria that contributes to Victoria's identity. The Wunghnu Water Tower is part of the larger story of the development of town water supply systems in Victoria.
			SG1(ii) There is no evidence that the social value of the Wunghnu Water Tower to the Wunghnu community resonates across the broader Victorian community. The Wunghnu Water Tower is not widely known beyond the local area. Its significance cannot be said to resonate across the State.
If <u>all facets</u> of SG1 are satisfied, then Criterion G is likely to be relevant at the State level			
Executive Director's Response:		No	Criterion G is not likely to be relevant at the State level.

CRITERION H: Special association with the life or works of a person, or group of persons, of importance in Victoria's history.

Step 1 Test for Criterion H

No.	Test	Yes/No	Reason
H1)	Does the place have a direct association with a person, or group of persons who has made a strong or influential contribution in their field of endeavour?	Yes	H1 There is a direct association between the Wunghnu Water Tower and engineer, John Monash.
H2)	Is there evidence of the association between the place and the person?	Yes	There is evidence of the association between the Wunghnu Water Tower and John Monash.
H3)	Does the association relate: • directly to achievements of the person(s); and • to an enduring and/or close interaction between the person(s) and the place/object?	Yes	H3) The association between the Wunghnu Water Tower and John Monash relates directly to his achievements. The water tower was one of Monash's earliest achievements in the application of the Monier reinforced concrete system to water towers. As the designer and licensee of the Monier system, he had a close interaction with the water tower.
If all facets of H1, H2 AND H3 are satisfied, then Criterion H is likely to be relevant (but not necessarily at the State level)			
Executive Director's Response:		Yes	Criterion H is likely to be relevant.

Step 2 State-level test for Criterion H

No.	Test	Yes/No	Reason
SH1)	Are the life or works of the persons important to Victoria's history?	No	John Monash played a pivotal role in the course of Victoria's history. See *Australian Dictionary of Biography*.
SH2)	Does this place allow the association between the person or group of persons and their importance in Victoria's history to be readily appreciated better than most other places or objects in Victoria?	No	The Wunghnu Water Tower is important as one of Monash's earliest applications of Monier reinforced concrete to water towers. In terms of the technology, the tower was pioneering in 1906 and could even be seen as somewhat experimental. Guaranteed for only one year, leaks and cracks at Wunghnu persisted for decades. Monash refined the technology at other water towers over the following years, arguably achieving greater success by 1912. Monash designed many other structures which were more technologically successful and allow his importance in Victoria's history as a gifted engineer to be more readily appreciated. These include: • Kings Bridge over Bendigo Creek (VHR H1935) (1901-02) • Former Wimmera Flour Mill and Silo Complex (VHR H1011) (1906) • Broken River Bridge, Benalla (VHR H1043) (1909) These are included in the VHR on the basis of Criterion H for association with John Monash.
If SH1 and SH2 are satisfied, then Criterion H is likely to be relevant at the State level			
Executive Director's Response:		No	Criterion H is not likely to be relevant at the State level.

Comparisons

The following were selected as comparators to the Wunghnu Water Tower.

The development of town water supply systems

BAIRNSDALE PUMPING STATION

JENNINGS STREET (PUMPING STATION) AND MAIN STREET (TOWER), BAIRNSDALE, EAST GIPPSLAND SHIRE

VHR H2040

Bairnsdale Pumping Station contains a reinforced concrete broad ground-level water tower designed by Monash (1906). The complex is historically significant as the most intact example in Victoria of an early municipal pumping station. The site has an unparalleled collection of buildings, tanks and machinery that demonstrate the operations of a nineteenth- and early twentieth- century municipal water pumping station. The station reflects the growth of Victorian towns in the late nineteenth century and the need to provide reliable and safe water supply systems for them.

BENALLA WATER SUPPLY DEPOT

1-3 RIVERVIEW ROAD, BENALLA, BENALLA RURAL CITY

VHR H1048

The Benalla Water Supply Depot contains a reinforced concrete tank-on-tower water tower (1935). The place is an intact example of a complex which demonstrates the changes in water tower design since the 1880s. It is also a rare surviving example of a nineteenth-century municipal water supply complex containing all the elements needed to supply a rural town in that period: an iron water tower, blacksmith's shop, carpenters shop and pumphouse. The Water Supply depot is important because of its ability to demonstrate the population growth of Benalla, an important rural town in Victoria for over a century, and its increasing demands for a safe and constant supply of drinking water.

Water-related concrete engineering structures

LOWER STONY CREEK DAM WALL

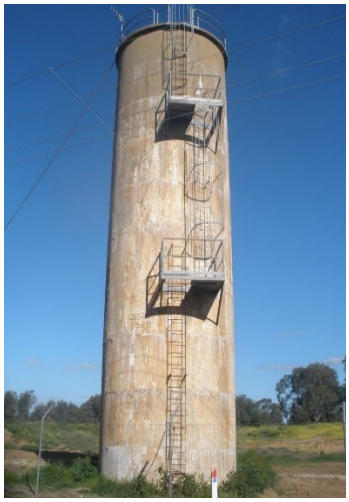
ANAKIE GORGE WALKING TRACK, STAUGHTON VALE, GREATER GEELONG CITY

VHR H2371

The Lower Stony Creek Dam Wall (1874) is a pioneering engineering structure in Victoria. It was the first mass concrete gravity dam wall constructed in Victoria and Australia. Retaining its original vertical curved and horizontal convex-concave form, the dam wall demonstrates uncommon engineering techniques. It served as an example to other engineers internationally, for example, being examined in the 1880s by the designers of the Quaker Bridge Dam, New York.

Extant pre-1914-18 reinforced concrete water tanks and towers in Victoria by John Monash using the Monier system

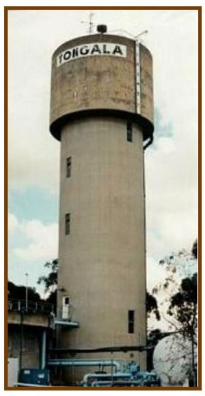
1906		December 1909	
BAIRNSDALE WATER TANK *GROUND LEVEL TANK* **Jennings Street, Bairnsdale** **LGA: East Gippsland** **Part of Bairnsdale Pumping Station (VHR H2040)** An addition in 1906 to the Bairnsdale Pumping Station built in 1888.		**KATAMATITE WATER TOWER** *STANDPIPE* **Reserve Road, Katamatite** **LGA: Moira** **HO101**	

1909-1910		1909-1910	
TUNGAMAH WATER TOWER *STANDPIPE* **Tower Street, Tungamah** **LGA: Moira** **No HO**		**ST JAMES WATER TOWER** *STANDPIPE* **St James Road, St James** **LGA: Moira** **No HO**	

March 1912		April 1912	
MILDURA FMIT (FIRST MILDURA IRRIGATION TRUST) WATER TANK *TANK-ON-TOWER* **43 Madden Avenue, Mildura** **LGA: Mildura** **HO49**		**TATURA WATER TOWER** *TANK-ON-TOWER* **83 Ross Street, Tatura** **LGA: Greater Shepparton** **HO117**	

October 1912		August 1913	
MONT PARK WATER TANK *GROUND LEVEL TANK* **Also known as Mount Sugarloaf Water tank, Gresswell Hill Water Tank** **Gresswell Hill, McLeod** **LGA: Darebin** **No HO**		**CHARLTON WATER TANK** *GROUND LEVEL TANK* **Corner of View & Currie Streets Charlton** **LGA: Buloke** **No HO**	

October 1914		October 1914	
COMMONWEALTH WOOLLEN MILLS WATER TANK *TANK-ON-LOW TOWER (HYBRID)* **Also known as North Geelong Water Tank, Federal Woollen Mills Tank** **McLeod Street, North Geelong** **LGA: Greater Geelong**		**ROCHESTER WATER TOWER** *TANK-ON-TOWER* **Campaspe Street, Rochester** **LGA: Campaspe** **HO217 (tank not original)**	

November 1914		March 1915	
TONGALA WATER TOWER *TANK-ON-TOWER* **11 Henderson Street, Tongala** **LGA: Campaspe** **HO511**		**ECHUCA WATER TOWER** *TANK-ON-TOWER* **245-249 Pakenham St, Echuca** **LGA: Campaspe** **HO2** The Echuca Water Tower is in the process of being demolished.	

Extant pre-WWI reinforced concrete water towers

WERRIBEE WATER TOWER (1913)

1 TOWER ROAD, WERRIBEE, WYNDHAM

HO100

Built in 1913 by the State Rivers and Water Supply Commission, the Werribee Water Tower is ~18m/59ft high. It is a reinforced concrete tank-on-tower form. Monash had built two similar structures the year before: in Mildura (~25m/83ft) and Tatura (~28m/93ft).

Monash held the Monier reinforced concrete system license until its expiry around 1910 after which others could use the technology, although this was not common until after the First World War. The SRWSC district office was built at the Werribee complex in 1926, a small hipped tiled roof structure facing and remains at the location with the water tower, the latter recently painted with a mural.[32]

1920s and onwards reinforced concrete water towers

Post-WWI Standpipes (less common after 1920)

MERBEIN WATER TOWER (1920)

251 COMMERCIAL STREET, MERBEIN

Not in HO

This reinforced concrete water tower was designed by the State Rivers and Water Supply Commission to have a capacity of 117,000 gallons. It was finished in June 1920 and the work of laying the pipes to bring water to the Merbein Urban District continued in the period 1921–23.

RED CLIFFS WATER TOWER (1924)

BARCLAY SQUARE, RED CLIFFS

HO303 BARCLAY SQUARE PRECINCT

The Red Cliffs Water Tower was built in 1924 to a design by the local offices of the State Rivers and Water Supply Commission.

The tower features a mural depicting the history of Red Cliffs around the base. Undertaken by students from the Red Cliffs Secondary College in 1991, under the direction of Broken Hill artist Clart Barrett, the mural was funded by the local branch of the Australian Dried Fruit Association.

[32] Nigel Lewis, *Ibid.*

Post-WWI tank-on-tower (more common after 1920)

NAGAMBIE WATER TOWER (1928)

HIGH STREET, NAGAMBIE, STRATHBOGIE SHIRE

Not in the HO

The Nagambie Water Tower was designed by John Monash and built in 1928 by the Reinforced Concrete Company (a company founded by Monash years earlier). It remains a prominent local landmark.

Monash is not known to have had a direct hand in designing or constructing any other reinforced concrete water towers after his return from the First World War.

MILDURA WATER TOWER (1957)

119–123 ORANGE AVENUE, MILDURA

Not in the HO

The Mildura Urban Water Trust water tower was completed in 1957. Designed by engineers Scott and Furphy, the tower was planned in 1954 as Australia's largest water tower with a height of 150 feet. It was the second water tower built in the Mildura township, significantly increasing the local water storage capacity by 600,000 gallons. Still operational, the water tower has been playing a crucial role in the township's domestic water supply for over 65 years. Fully constructed and finished of reinforced concrete, the tower showcases bare building materials and structural elements comprising a series of freestanding columns with bracing rings supporting the elevated water tank.

CRESSY WATER TOWER (early 1960s)

19 NEW STATION STREET, CRESSY, COLAC OTWAY SHIRE

HO172

The Cressy Water Tower is a reinforced concrete water tower built in the early 1960s as a tank for the town water supply. In 2024 the tower became a canvas for the first silo art in the Colac Otway Shire. This project was the initiative of the History Group. It was completed by renowned silo artist Tim Bowtell — known for numerous works across Victoria and New South Wales, including the acclaimed Colbinabbin silos.

Summary of Comparisons

The Wunghnu Water Tower is a significant and rare early reinforced concrete water tower in Victoria. Designed by innovative and entrepreneurial John Monash who was the licensee of the patented Monier system in Victoria, it was the first reinforced concrete tower in the state. Built in an untested standpipe form, it was the highest concrete structure in Australia when completed in 1906.

After completing four similar standpipes, Monash refined the technology sufficiently to enable a tank-on-tower design. This tank-on-tower design form, which Monash first built at Mildura in 1912, could be built at a greater height and contain a greater volume of water. This quickly became the successor to the standpipe and became ubiquitous from the 1920s into the later twentieth century. Although the tank-on-tower form became common throughout Victoria, the standpipe design was an important precursor, and pivotal to the development of tall reinforced concrete structures in Victoria.

Statement of significance

The Wunghnu Water Tower is located on Yorta Yorta Country.

What is significant?

The Wunghnu Water Tower, a hollow reinforced cylindrical open-roof standpipe measuring approximately 15.2 metres in height and 4.27 metres in diameter, designed by engineer John Monash in 1905 and officially opened on 7 March 1906.

How is it significant?

The Wunghnu Water Tower is of historical significance to the State of Victoria. It satisfies the following criterion for inclusion in the Victorian Heritage Register:

Criterion B

Possession of uncommon, rare or endangered aspects of Victoria's cultural history.

Criterion D

Importance in demonstrating the principal characteristics of a class of cultural places and objects

Criterion F

Importance in demonstrating a high degree of creative or technical achievement at a particular period.

Why is it significant?

The Wunghnu Water Tower is rare as an early reinforced concrete water tower in Victoria. Constructed in a standpipe form, the tower was the tallest reinforced concrete structure in Australia at completion, being around 15.2 metres (50 feet high). Designed by the pioneering engineer John Monash, licensee of the Monier patent, Wunghnu was the first of eight standpipes known to be built in Victoria prior to 1916. The standpipe form was not widely constructed in Victoria and, by the 1920s, was surpassed by the structurally more resilient and higher-capacity tank-on-tower form, more of which were constructed across Victoria well into the mid-twentieth century. (Criterion B)

The Wunghnu Water Tower is notable as a pivotal structure in the development of reinforced concrete water towers in Victoria. It demonstrates a key evolutionary phase being the early application of reinforced concrete construction to tall water storage towers, the height of which enabled the gravity-fed reticulation of water under pressure. (Criterion D)

The Wunghnu Water Tower represents a key evolutionary phase in the development of reinforced concrete water towers in Victoria. Built in an untested standpipe form by innovative engineer John Monash, it was a breakthrough in terms of the application of the Monier reinforced concrete technology to water storage structures. Although experiencing some leaks and cracks, the Wunghnu Water Tower represents a pivotal and arguably experimental phase of the iterative technological process to refine the application of reinforced concrete to water retaining structures. (Criterion F)

Recommended permit exemptions under section 38

Introduction

A heritage permit is required for all works and activities undertaken in relation to VHR places and objects. Certain works and activities are exempt from a heritage permit, if the proposed works will not harm the cultural heritage significance of the heritage place or object.

Permit Policy

Permit Exemptions

General Permit Exemptions

General exemptions apply to all places and objects included in the 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 Act.

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 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 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 Permit Exemptions

The works and activities listed below under the heading 'Exempt works and activities' are not considered to cause harm to the cultural heritage significance of the Wunghnu Water Tower. These are subject to the following guidelines and conditions:

Guidelines for specific permit exemptions

1. Where there is an inconsistency between permit exemptions specific to the registered place or object ('specific exemptions') established in accordance with either section 49(3) or section 92(3) of the Act and general exemptions established in accordance with section 92(1) of the Act specific exemptions will prevail to the extent of any inconsistency.
2. In specific exemptions, words have the same meaning as in the Act, unless otherwise indicated. Where there is an inconsistency between specific exemptions and the Act, the Act will prevail to the extent of any inconsistency.
3. Nothing in specific exemptions obviates the responsibility of a proponent to obtain the consent of the owner of the registered place or object, or if the registered place or object is situated on Crown Land the land manager as defined in the *Crown Land (Reserves) Act 1978*, prior to undertaking works or activities in accordance with specific exemptions.
4. If a Cultural Heritage Management Plan in accordance with the *Aboriginal Heritage Act 2006* is required for works covered by specific exemptions, specific exemptions will apply only if the Cultural Heritage Management Plan has been approved prior to works or activities commencing. Where there is an inconsistency between specific exemptions and a Cultural Heritage Management Plan for the relevant works and activities, Heritage Victoria must be contacted for advice on the appropriate approval pathway.
5. Specific exemptions do not constitute approvals, authorisations or exemptions under any other legislation, Local Government, State Government or Commonwealth Government requirements, including but not limited to the *Planning and Environment Act 1987*, the *Aboriginal Heritage Act 2006*, and the *Environment Protection and Biodiversity Conservation Act 1999* (Cth). Nothing in this declaration exempts owners or their agents from the responsibility to obtain relevant planning, building or environmental approvals from the responsible authority where applicable.
6. Care should be taken when working with heritage buildings and objects, as historic fabric may contain dangerous and poisonous materials (for example lead paint and asbestos). Appropriate personal protective equipment should be worn at all times. If you are unsure, seek advice from a qualified heritage architect, heritage consultant or local Council heritage advisor.
7. The presence of unsafe materials (for example asbestos, lead paint etc) at a registered place or object does not automatically exempt remedial works or activities in accordance with this category. Approvals under Part 5 of the Act must be obtained to undertake works or activities that are not expressly exempted by the below specific exemptions.
8. All works should be informed by a Conservation Management Plan prepared for the place or object. The Executive Director is not bound by any Conservation Management Plan and permits still must be obtained for works suggested in any Conservation Management Plan.

General conditions for specific permit exemptions

1. All works or activities permitted under specific exemptions must be planned and carried out in a manner which prevents harm to the registered place or object. Harm includes moving, removing or damaging any part of the registered place or object that contributes to its cultural heritage significance.
2. If during the carrying out of works or activities in accordance with specific exemptions original or previously hidden or inaccessible details of the registered place are revealed relating to its cultural heritage significance, including but not limited to historical archaeological remains, such as features, deposits or artefacts, then works must cease and Heritage Victoria notified as soon as possible.
3. If during the carrying out of works or activities in accordance with specific exemptions any Aboriginal cultural heritage is discovered or exposed at any time, all works must cease and the Secretary (as defined in the *Aboriginal Heritage Act 2006*) must be contacted immediately to ascertain requirements under the *Aboriginal Heritage Act 2006*.
4. If during the carrying out of works or activities in accordance with specific exemptions any munitions or other potentially explosive artefacts are discovered, Victoria Police is to be immediately alerted, and the site is to be immediately cleared of all personnel.
5. If during the carrying out of works or activities in accordance with specific exemptions any suspected human remains are found the works or activities must cease. The remains must be left in place and protected from harm or damage. Victoria Police and the State Coroner's Office must be notified immediately. If there are reasonable grounds to believe that the remains are Aboriginal, the State Emergency Control Centre must be immediately notified on 1300 888 544, and, as required under s.17(3)(b) of the *Aboriginal Heritage Act 2006*, all details about the location and nature of the human remains must be provided to the Aboriginal Heritage Council (as defined in the *Aboriginal Heritage Act 2006*).

Exempt works and activities

The Executive Director proposes the following specific permit exemptions for the Wunghnu Water Tower.

1. Installation, maintenance, removal, and replacement of safety fencing, hoarding and signs, provided they are not attached to the water tower.
2. Installation of signage, security cameras, lights and the like to secure the site, provided they are not attached to the water tower.
3. Mowing and slashing.
4. Removal of vegetation and the lopping of trees within the extent of registration.
5. Repairs, maintenance and replacement of bollards.
6. Maintenance, regrading and repairs of roadside verges and drains.
7. Repairs, replacement and installation of underground services and drains provided the land is returned to its former appearance upon completion.

Appendix 1: Important information for owners and interested parties

Heritage Council determination (section 49)

The Heritage Council is an independent statutory body that will make a determination on this recommendation under section 49 of the Act. It will consider the recommendation after a period of 60 days from the date the notice of recommendation is published on its website under section 41.

Making a submission to the Heritage Council (section 44)

Within the period of 60 days, any person or body may make a submission to the Heritage Council regarding the recommendation and request a hearing in relation to that submission. Information about making a submission and submission forms are available on the Heritage Council's website. The owner can also make a submission about proposed permit exemptions (Section 40(4)(d).

Consideration of submissions to the Heritage Council (section 46)

(1) The Heritage Council must consider—

(a)any written submission made to it under section 44; and

(b)any further information provided to the Heritage Council in response to a request under section 45.

Conduct of hearings by Heritage Council in relation to a recommendation (section 46A)

(1) The Heritage Council may conduct a hearing in relation to a recommendation under section 37, 38 or 39 in any circumstances that the Heritage Council considers appropriate.

(2) The Heritage Council must conduct a hearing if—

(a) a submission made to it under section 44 includes a request for a hearing before the Heritage Council; and

(b) the submission is made by a person or body with a real or substantial interest in the place, object or land that is the subject of the submission.

Determinations of the Heritage Council (section 49)

(1) After considering a recommendation that a place, object or land should or should not be included in the Heritage Register and any submissions in respect of the recommendation and conducting any hearing, the Heritage Council may—

(a) determine that the place or object is of State-level cultural heritage significance and is to be included in the Heritage Register; or

(ab) in the case of a place, determine that—

(i) part of the place is of State-level cultural heritage significance and is to be included in the Heritage Register; and

(ii) part of the place is not of State-level cultural heritage significance and is not to be included in the Heritage Register; or

(ac) in the case of an object, determine that—

(i) part of the object is of State-level cultural heritage significance and is to be included in the Heritage Register; and

(ii) part of the object is not of State-level cultural heritage significance and is not to be included in the Heritage Register; or

(b) determine that the place or object is not of State-level cultural heritage significance and is not to be included in the Heritage Register; or

(c) in the case of a recommendation in respect of a place, determine that the place or part of the place is not to be included in the Heritage Register but—

(i) refer the recommendation and any submissions to the relevant planning authority or the Minister administering the Planning and Environment Act 1987 to consider the inclusion of the place or part of the place in a planning scheme in accordance with the objectives set out in section 4(1)(d) of that Act; or

(ii) determine that it is more appropriate for steps to be taken under the Planning and Environment Act 1987 or by any other means to protect or conserve the place or part of the place; or

(ca) in the case of a recommendation in respect of an object nominated under section 27A, determine that the object, or part of the object, is to be included in the Heritage Register if it is integral to understanding the cultural heritage significance of a registered place or a place the Heritage Council has determined to be included in the Heritage Register; or

(d) in the case of a recommendation in respect of additional land nominated under section 27B, determine that the additional land, or any part of the additional land, is to be included in the Heritage Register if—

(i) the State-level cultural heritage significance of the place, or part of the place, would be substantially less if the additional land or any part of the additional land which is or has been used in conjunction with the place were developed; or

(ii) the additional land or any part of the additional land surrounding the place, or part of the place, is important to the protection or conservation of the place or contributes to the understanding of the place.

(2) The Heritage Council must make a determination under subsection (1)—

(a) within 40 days after the date on which written submissions may be made under section 44; or

(b) if any hearing is conducted, within 90 days after the completion of the hearing.

(3) A determination made under subsection (1)(a), (ab), (ac), (ca) or (d)—

(a) may include categories of works or activities which may be carried out in relation to a place, object or land, or part of a place, object or land, for which a permit under this Act is not required, if the Heritage Council considers that the works or activities would not harm the cultural heritage significance of the place, object or land; and

(b) must include a statement of the reasons for the making of the determination.

(4) If the Heritage Council determines to include a place, or part of a place, in the Heritage Register, the Heritage Council may also determine to include land that is not the subject of a nomination under section 27B in the Heritage Register as part of the place if—

(a) the land is ancillary to the place; and

(b) the person who owns the place, or part of the place—

(i) is the owner of the land; and

(ii) consents to its inclusion.

(5) If a member of the Heritage Council makes a submission under section 44 in respect of a recommendation, the member must not take part in the consideration or determination of the Heritage Council.

(6) The Heritage Council must notify the Executive Director of any determination under this section as soon as practicable after the determination.

Obligations of owners (section 42, 42A, 42B, 42C, 42D)

42 Obligations of owners—to advise of works, permits etc. on foot when statement of recommendation given

(1) The owner of a place, object or land to whom a statement of recommendation has been given must advise the Executive Director in writing of—

(a) any works or activities that are being carried out in relation to the place, object or land at the time the statement is given; and

(b) if the place, object or land is a place or additional land, any application for a planning permit or a building permit, or any application for an amendment to a planning permit or a building permit, that has been made in relation to the place or additional land but not determined at the time the statement is given; and

(c) any works or activities that are proposed to be carried out in relation to the place, object or land at the time the statement is given.

(2) An advice under subsection (1) must be given within 10 days after the statement of recommendation is given under section 40.

42A Obligations of owners before determination or inclusion in the Heritage Register—to advise of permits

(1) This section applies if—

(a) an owner of any of the following is given a statement of recommendation—

(i) a place or object nominated under section 27;

(ii) an object nominated under section 27A;

(iii) land nominated under section 27B; and

(b) any of the following occurs within the statement of recommendation period in relation to the place, object or land—

(i) the making of an application for a planning permit or a building permit;

(ii) the making of an application for an amendment to a planning permit or a building permit;

(iii) the grant of a planning permit or building permit;

(iv) the grant of an amendment to a planning permit or building permit.

(2) The owner must advise the Executive Director in writing of—

(a) the making of an application referred to in subsection (1)(b)(i) or (ii), within 10 days of the making of the application; or

(b) a grant referred to in subsection (1)(b)(iii) or (iv), within 10 days of the owner becoming aware of the grant.

42B Obligations of owners before determination or inclusion in the Heritage Register—to advise of activities

(1) This section applies if—

(a) an owner of a place, object or land is given a statement of recommendation; and

(b) within the statement of recommendation period it is proposed that activities that could harm the place, object or land be carried out.

(2) The owner, not less than 10 days before carrying out the activities, must advise the Executive Director in writing of the proposal to do so.

42C Obligations of owners before determination or inclusion in the Heritage Register—to advise of proposal to dispose

(1) This section applies if—

(a) an owner of a place, object or land is given a statement of recommendation; and

(b) within the statement of recommendation period a proposal is made to dispose of the whole or any part of the place, object or land.

(2) The owner, within 10 days after entering into an agreement, arrangement or understanding for the disposal of the whole or any part of the place, object or land, must advise the Executive Director in writing of the proposal to do so.

42D Obligations of owners before determination or inclusion in the Heritage Register—requirement to give statement to purchaser

(1) This section applies if—

(a) an owner of a place, object or land is given a statement of recommendation; and

(b) the owner proposes to dispose of the whole or any part of the place, object or land within the statement of recommendation period.

(2) Before entering into an agreement, arrangement or understanding to dispose of the whole or any part of the place, object or land during the statement of recommendation period, the owner must give a copy of the statement of recommendation to the person who, under the proposed agreement, arrangement or understanding, is to acquire the place, object or land or part of the place, object or land.

Owners of places and objects must comply with obligations (section 43)

An owner of a place, object or land who is subject to an obligation under section 42, 42A, 42B, 42C or 42D must comply with that obligation.

Penalty: In the case of a natural person, 120 penalty units;

In the case of a body corporate, 240 penalty units.