

Wunghnu water tower

History

The Wunghnu water tower (known a standpipe) was constructed in 1906. The tower was designed by Sir John Monash - one of Australia's most renowned engineers. His company used the innovative Monier reinforced concrete system to build the tower. At the time, this method was a breakthrough in construction technology, replacing traditional brick towers that were topped with steel tanks. The new design was more cost-effective and durable.



Figure 1 Wunghnu Water Tower, postcard (Wunghnu & District 2021).

At 15 metres (50 feet) high and holding 151,000 litres (40,000 gallons) of water, the Wunghnu water tower, at the time of construction, was unique in Australia for its size and design.

The tower helped provide a reliable water supply to the Wunghnu township. It served the local community for decades before being decommissioned in the 1990s. The tower was replaced by a ground-level water tank and an elevated tank on a steel stand.

While no longer in use, the tower is a key landmark in Wunghnu. Originally guaranteed to last for one year, the tower has stood for more than 100 years, going beyond all expectations of its service life.

The Wunghnu water tower is a great example of an early reinforced concrete water tower. It was the first of its type to be constructed in Victoria and was used as a proven design template for additional towers throughout the state including Katamatite, St James, Devenish and Tungamah.

Recognition of the heritage significance of the tower is evidenced by its addition to the Moira Shire Heritage Overlay and its nomination for inclusion on the Victorian Heritage Register. The Wunghnu water tower stands as testament to early 20th-century engineering innovation and is a key contributor to the development of rural Victoria.

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From creek water to treated drinking water – A timeline of Wunghnu's reticulated water supply

1905	2 October – After much deliberation, because of cost, Numurkah Waterworks Trust called for tenders to construct a cast-iron water tank supported by either brick or timber.
	11 October– John Monash submits an alternative design to the brick and cast-iron tower specified in the tender – one of reinforced concrete. He supported his design by explaining there are several successful examples in Australia. This tower is significantly cheaper than the one made of brick/timber and cast iron.
	15 November - Numurkah Waterworks Trust secretary writes to John Monash informing him of the acceptance of his tender and requests detailed specifications.
	8 December - Letter to Monash from Meldrum requesting the addition of a steel ladder to access the standpipe.
	15 December – The Numurkah Waterworks Trust and Monier Pipe Company enter into contract for the construction of the tower. Contract includes guarantee that the Monier Pipe Company will take responsibility for any liabilities or required repairs for 12 months.
1906	30 January - Concrete for the foundations is finished.
	9 March – Letter from McCartney to Monash that works would be finished that night.
	7 March– Official opening of the Wunghnu reticulation scheme. The tower was not yet filled due to lack of rain.
	10-14 May - tower filled from the reservoir in the Nine Mile Creek and officially opened.
	30 May – Meldrum writes to Monash that the tank is leaking a bit and a drain is created at the base to let water out from the foundations.
1950	New asbestos cement water mains installed in town to replace original cast iron ones.
1980	Feeder water main from Numurkah commissioned, bringing treated drinking water to Wunghnu. Water delivered to the water tower and through the 1950 reticulation network.
1990	New elevated tank and clear water storage built at 8 Carlisle St. Concrete water tower taken offline.
1997	Water main duplicated and extended down Carlisle St

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Safety

In 2023/24 Goulburn Valley Water commissioned an independent structural assessment by a registered structural engineer. This assessment determined that the tower is currently unsafe and poses a significant risk to the public - including school children, visitors to Graham Park and traffic on the GV Hwy.

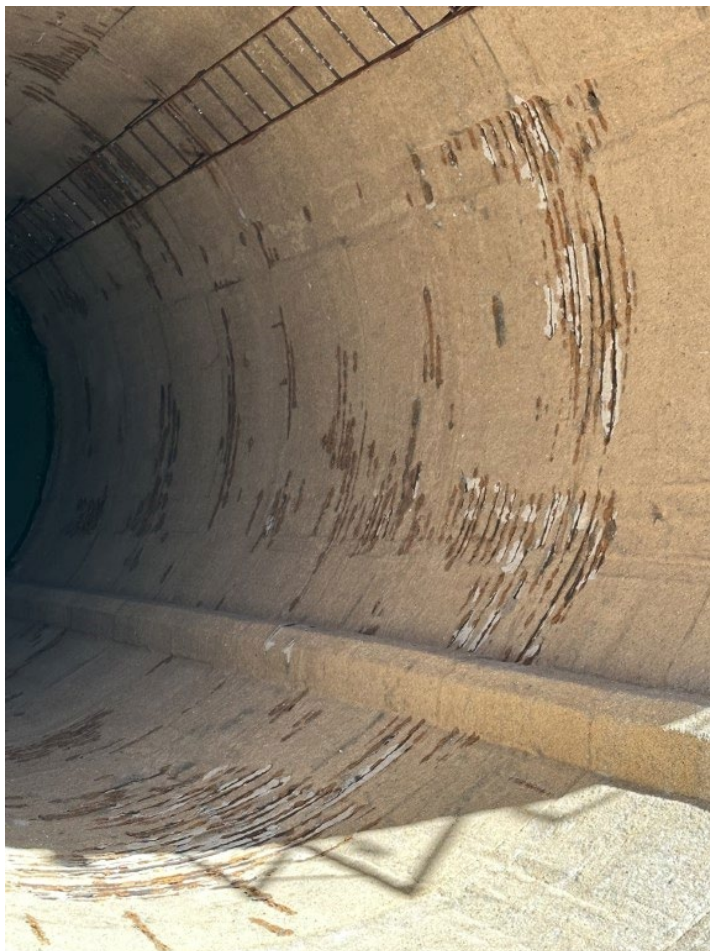
Recommended immediate safety measures undertaken to prevent serious injury from falling concrete included establishing an exclusion zone equal to 2/3 of height of the tower around the perimeter in case it was to partially or fully collapse.

Deterioration

Reinforced concrete is made by combining steel and concrete so they work together. This makes it strong enough to hold its own weight and stand up to forces like wind.

Examples of known deterioration, from structural and condition assessments, are shown below.

Internal



Severe rust staining observed in the inside of the tower with reinforcement exposed.

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External



Falling concrete observed at multiple levels all around the tank indicating the corrosion of reinforcement has spread around the tank at all levels.



Severe section loss of reinforcement and corrosion forcing the concrete to spall (fall off).

Questions and Answers

What investigations and studies have GVW undertaken?

GVW has completed a number of investigations and studies to better understand the current condition and significance of the tower, including reaching out to key agencies and the Monash Family Trust.

The tasks completed to date include:

- 2022/2023 Condition Assessment and Installation of Temporary Fencing
- 2023/2024 Structural Assessment
- 2024/2025 Engagement of a Consultant to commence Stakeholder Engagement with:
 - Monash Family Trust
 - Moira Shire
 - VicRoads
 - Powercor
- 2024/2025
 - meeting with other Water Corporations who manage aging historical assets.
 - Historic Heritage Assessment
- 2025/2026 commence community consultation by identifying and reaching out to community groups.

Are you going to demolish the tower?

It is important to note that GVW has not made any decision on the future of the Tower at this stage. The safety of the community is GVW's first priority.

What is the plan moving forward?

- GVW will engage a registered Heritage Advisor to help guide the journey.
- GVW will prepare a submission to Heritage Victoria regarding the future of the tower and requisite heritage interpretation. Based on discussions with other Water Corporations, this will be a lengthy and complex process and may take 12 months or more to complete.
- GVW will establish a **Community Reference Group** to help inform the decision-making process regarding the future of the tower.

Key messages

- Safety is the first priority
- Goulburn Valley Water acknowledges and respects the historical significance of the tower
- No decision has been made the future of tower
- Decisions will be made after community consultation, engineering and heritage assessments and Heritage Victoria consultation