

## Warrnambool's Wonderful Water Towers

### HISTORY

Warrnambool has five water towers and is likely to require more in the future. New towers will be needed to provide adequate water pressure to houses as residential development continues in the city's north and eastern growth areas.

### LIEBIG STREET

One of Warrnambool's oldest structures, the water tower at the top of the Liebig Street hill was constructed in 1893, making it 125 years old next year. The tower was an integral part of Warrnambool's first water supply, which was sourced from the Merri River until 1939 and is still important today.

Built of local sandstone and 25 metres high, it supports a 130,000-litre steel tank.

The tower was reinforced with five centimetres of pressurised cement rendering in 1968 after the external surface of the sandstone showed signs of deterioration. In 1992, the tank was renovated, with the work revealing the excellent workmanship of the original construction.

Water is pumped to the tower from the Liebig Street water basin.

### EAST AND WEST

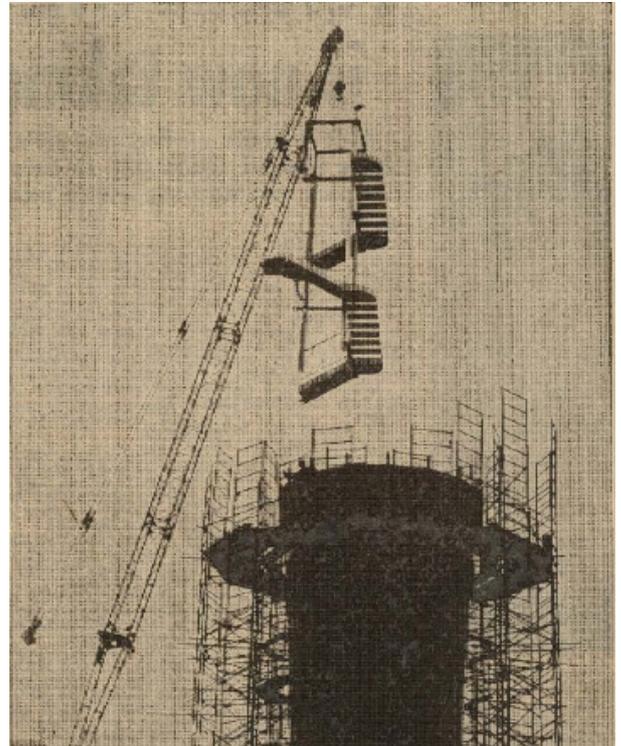
These two towers, located in Tower Square off Selby Road, and in Victoria Park off Hyland Street, are identical designs.

Both were constructed in 1972/73 by local contractors John Snaauw and RA Steel Buildings. Each has a 28-metre high concrete tower and a steel upper water tank with a capacity of about 450,000 litres.

An internal staircase with 154 steps accesses a viewing area at the top of the tank. When the towers were completed in 1974, this area was originally open to the public, providing views across Warrnambool and the surrounding ocean and countryside. In subsequent years, this access was closed off due to concerns over safety and security.

Today, the west tower supplies Midfield Meats and Warrnambool Base Hospital.

These two water towers and the Liebig Street tower can be opened up to each other to allow for inspection and maintenance.



Lifting in the stairs at the East Warrnambool Water Tower

### DOOLEYS HILL

Constructed in 1979, this tower was required to serve the rapid development in the Couch Estate in North Warrnambool. A key design factor was to make the tower as aesthetically appealing as possible, given its location in a residential area off Balmoral Road.

The successful tenderer was South Australian company Steel Mains who built a 225,000-litre circular tank on a 22-metre high steel stem.

### HARRINGTON ROAD

The Harrington Road tower was built in 1991, adjacent to a low-level water storage basin, to serve residential development in the Dennington area.

Sefton Constructions of Heyfield built the 27-metre high tower and tank, which is a similar design to the Dooleys Hill tower and holds 225,000 litres.

## FROM CRUISE SHIPS TO WATER TOWERS

John Snaauw is quick to admit that he loves a challenge. A cabinet-maker by trade, John arrived in Australia from Holland 65 years ago looking for an adventure.

He started his new life helping to construct houses in Norlane and in Warrnambool's Crawley Street before slowly building up his own business. Unlike many builders at that time, John was willing to travel out to country areas seeking work on farms. He quickly established a solid clientele, constructing new dairies, hay and shearing sheds and building homes. His reputation grew and he was contracted to construct factories, hospitals and bridges across the region.



John Snaauw pouring concrete on top of the east tower deck during construction.

At one stage, his home continent beckoned and he packed up his wife Margaret and six young children for an adventure to Europe, travelling by ship and then by Kombi across many countries. The children would sleep in the Kombi and John and Margaret pitched a tent beside it every night. "We had a marvellous time," he recalls.

The Snaauw family returned home with perfect timing. John noticed a tender in the Warrnambool Standard for the construction of two new water towers in east and west Warrnambool.

It was no mean feat, the huge concrete tower, footings and deck were the most difficult structures he had ever had to quote on. They were wider at the top than at the base. "You could not use a level instrument and the tower was also eight-sided which meant eight corners to go up in a straight line," John explains. "The concrete deck to support the water tank was not easy either because it was round and sloped up to the outside."

John designed the formwork which held tons of wet concrete carted to the site each day. "The biggest challenge was to get the reinforcement right for the first pour. It was in the perfect place and when that was done, the rest was easy - the difficult towers were not difficult after all."

John's early working life fitting out cruise ships with cabinets was the perfect learning platform for this job - no room was straight and everything had to be fitted at an angle.

John and his team of three men laid the massive footings for each tower and then started work on the east Warrnambool structure first before moving to the west. It was tough work and, because there were no occupational health and safety regulations at the time, involved working at heights without any harnesses or railings. "We weren't scared because we did it all the time. Now I've got older, I wonder why I took it on."



The east tower progresses

He admits he could not have done it without the support of Margaret who documented the entire process in a work diary, kept track of hours and paid for materials.

"When the towers were finished, we took all the formwork home and put it in our paddock next door. Our son had a marvellous time building many cubby houses with it and learn how to hit a nail on the head."

## HOW DO THEY WORK?

They are urban landmarks that we often take for granted. But water towers are there for an important reason.

A water tower is an incredibly simple device. It is simply a large, tank of water that is elevated to provide pressure to customers.

Each foot of height provides 0.43 PSI (pounds per square inch) of pressure. A typical residential water supply runs at between 50 and 100 PSI (major appliances require at least 20 to 30 PSI).

The water tower must be tall enough to supply that level of pressure to all the nearby properties that are served by the tower. Water towers are therefore typically located on high ground, and they are tall enough to provide the necessary pressure.

Typically, a water tower's tank can hold about a day's worth of water to serve the needs of the properties supplied from the tower.

Water for the towers is pumped from the Warrnambool Water Treatment Plant near Albert Park. The water is treated at the plant to remove sediment (by filtration and/or settling) and bacteria (with chlorine).