

# Delivering Australia's first privately financed treatment plant in the water sector



TRILITY is the sole operator of the 155 ML/d Yan Yean Water Treatment Plant (WTP).



Built in 1857, Yan Yean Reservoir was Melbourne's first reservoir and is the oldest water supply reservoir still in use in Australia. The water from the reservoir has always had noticeable colour, high iron concentration and turbidity owing to the shallowness of the reservoir and the nature of the soil and vegetation in the area.

In order to improve the quality of its drinking water supplies, Melbourne Water decided that a new direct filtration plant was needed.

The project scope was to Design, Build, Finance, Operate and Maintain (DBFOM) a new Water Treatment Plant (WTP). This was the first privately financed project of its type in the Australian water sector. Construction was completed in June 1994.

In July 1998, TRILITY also agreed to implement additional remineralisation and carbon dioxide dosing facilities to the Whittlesea water supply.

The WTP is designed to treat water from the shallow reservoir to remove turbidity and colour. Screened water from the reservoir flows by gravity to the treatment plant where coagulant chemicals (coagulant, lime and polymer) are added to the water. Rapid mixing distributes the chemicals, enabling them to react with the finely suspended particles and causing them to cluster together.

Water then enters the filtration process and flows by gravity through the layers of filter media and fine nozzles in the floor of the filters, leaving behind the coagulated impurities. Clean water flows out of the filters into the pump station where lime is added to make the water less corrosive, fluoride is added for dental health and the water is disinfected with chlorine prior to distribution.



### Who

Melbourne Water is responsible for Melbourne's water supply catchment, treatment and supply of drinking water, removal and treatment of sewage, provision of recycled water for non-drinking purposes and management of rivers and creeks in the metro Melbourne area.

### What

A 155 ML/d capacity direct filtration water treatment plant to treat water from the Yan Yean Reservoir.

### Where

Yan Yean, 30km north of Melbourne.

### Why

To enable continuous use of the Yan Yean Reservoir, particularly during summer months when demand is high, to counter Melbourne's water demand and also provide storage for local emergencies such as fire fighting.

### Snapshot

Client	Melbourne Water
Type of Contract	Design, Build, Finance, Operate and Maintain (DBFOM)
Facilities	Water treatment plant and pumping station
Technology	Direct Filtration
Design Capacity	155 ML/d
Term	25 years
Capital Cost	c. \$25m



### For further information

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