

Precast wins in Warrnambool

Precast concrete has proved its place on the Warrnambool Sewage Treatment Plant upgrade.



The use of precast reduced in-situ concrete work on site.

Wastewater infrastructure is expected to perform reliably for decades in some of the most demanding environments found in civil construction. Constant moisture, chemical exposure and continuous operation place

heavy demands on structural materials, while large-scale assets also require construction efficiency, installation sequencing and program certainty. Together, these challenges make material selection a critical project decision.



The bio reactor structure measures about 57 metres square and seven metres deep.



By Cadell Taye, CEO of National Precast.



That balance was central to the Warrnambool Bio Reactor project, part of Warrnambool Water's \$85 million upgrade of the Warrnambool Sewage Treatment Plant in regional Victoria.

Delivered by lead contractor CCP, the project forms part of Warrnambool Water's long-term investment to increase treatment capacity and support future population growth, industrial demand and environmental outcomes across the region.

The bio reactor structure measures about 57 metres square and seven metres deep, with an 18 megalitre treatment capacity. It incorporates more than 3,000 tonnes of precast concrete and 350 tonnes of reinforcement. All precast concrete panels and associated structural elements were manufactured and installed by National Precast member Otway Precast.

Durability and precision

For wastewater infrastructure, durability is a long-term operational requirement. Structures within sewage treatment facilities are exposed to harsh environmental conditions throughout their service life. Material performance, dimensional accuracy and construction quality all contribute to long-term asset reliability and maintenance outcomes. This combination made precast concrete well suited to the Warrnambool project.

By manufacturing the structural elements within a controlled factory environment, Otway Precast was able to achieve the dimensional accuracy required across the large multi-cell bio reactor structure while maintaining consistent quality throughout production.

According to Otway Precast managing director Tim Reinen, the project demonstrates the advantages precast concrete can provide on major civil infrastructure projects.

"Projects like this highlight the value of controlled off-site manufacturing, particularly where durability, accuracy and installation sequencing are all critical to delivery," said Reinen.

Efficiency

Installation methodology was also important to the project. Large wastewater infrastructure projects often involve complex staging requirements, coordination across multiple contractors and construction activities within



Precast elements were manufactured in a controlled factory environment.

operational environments. Maintaining program certainty while minimising disruption can be a challenge.

With the structural elements manufactured off site and delivered ready for installation, construction activities were able to progress efficiently while simplifying installation sequencing and reducing on-site construction duration.

The approach also reduced the amount of in-situ concrete work required on site, helping streamline delivery within the treatment plant environment.

Long-term performance

Warrnambool Water has described the broader sewage treatment plant upgrade as its largest ever single infrastructure investment.

As investment across Australia's water infrastructure sector continues to grow, projects such as the Warrnambool Bio Reactor highlight the important role precast concrete plays in delivering durable, constructable and operationally efficient infrastructure assets.

For Otway Precast, the project reflects how integrating manufacturing capability into complex regional infrastructure delivery can support project success. ■

Project

Warrnambool Bio Reactor

Location

Warrnambool, Victoria

Client

Warrnambool Water

Lead contractor

CCP

Precast supplier

Otway Precast

Precast concrete utilised

More than 3,000 tonnes

Reinforcement utilised

About 350 tonnes

Scope

Manufacture and installation of precast concrete elements for the bio reactor structure