

gordon golf course, sydney, australia



Figure 1: Gordon Golf Course where municipal wastewater is made usable for irrigation

Application: Membrane BioReactor (MBR) for sewer mining and reuse for irrigation

Capacity: 300 kl/day

Location: Sydney, Australia

Commissioned: 2011

challenge

Due to excessive and long-periods of drought conditions in the region of Sydney, many commercial properties were faced with government enforced water restrictions.

The Gordon Golf Course, a public golf course owned by Ku-ring-gai Council, is located to the north of the city, and was significantly affected by the water restrictions imposed by the local water authority and Council was investigating options to keep the course healthy and green by using a non-potable water source.

Following initial investigations, sewer mining was seen as the most cost effective and reliable supply to meet demand and met part of Ku-ring-gai Council's Integrated Water Management Strategy and Water Recycling and Reuse Policy, which aims to decrease Council's potable water consumption by 30% by 2015 based on water usage levels in the year 2000.

solution

Partnering with Henry & Hymas (H&H), the Principal Contractor, and Innaco as the builder, SUEZ proposed a sewer mining system utilising MBR technology to transform municipal wastewater into a usable source of irrigation water for greens and fairways. The overall process design ensures maximum water is recovered, while maintaining a consistent, safe product water.

Innaco and H&H had worked with SUEZ previously and consequently were confident with the technical and engineering capability to be provided by the SUEZ team. They were also experienced with SUEZ membranes and recognised their intrinsic value in this application.

At the core of the MBR system is SUEZ's ZeeWeed* 500 membrane; an advanced filtration technology that separates particles, bacteria and viruses from wastewater. SUEZ's ZeeWeed 500 membranes are reinforced, hollow-fibres that have been proven in more than two decades of wastewater treatment and water reuse.

results

By implementing the SUEZ MBR system, Gordon GC was able to recover 98% of its wastewater. Most importantly, this in turn enabled the course to continue operations and improve the quality of their golf course.

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Additionally, the caretakers of the course experienced a reduction in the chemicals needed for fertilizing the greens.

The Gordon plant is designed to treat inflow of 300 m³/day, with the daily waste activated sludge volume close to 5 m³/day. Additionally, the customer anticipates potable water savings of close to 110 ML/year which could save the club up to \$250,000 per year in water alone.

Figure 3 shows how the water flows through the water treatment plant and how SUEZ's MBR technology allows Gordon GC to recover 98% of its wastewater.



Figure 2: SUEZ's MBR technology

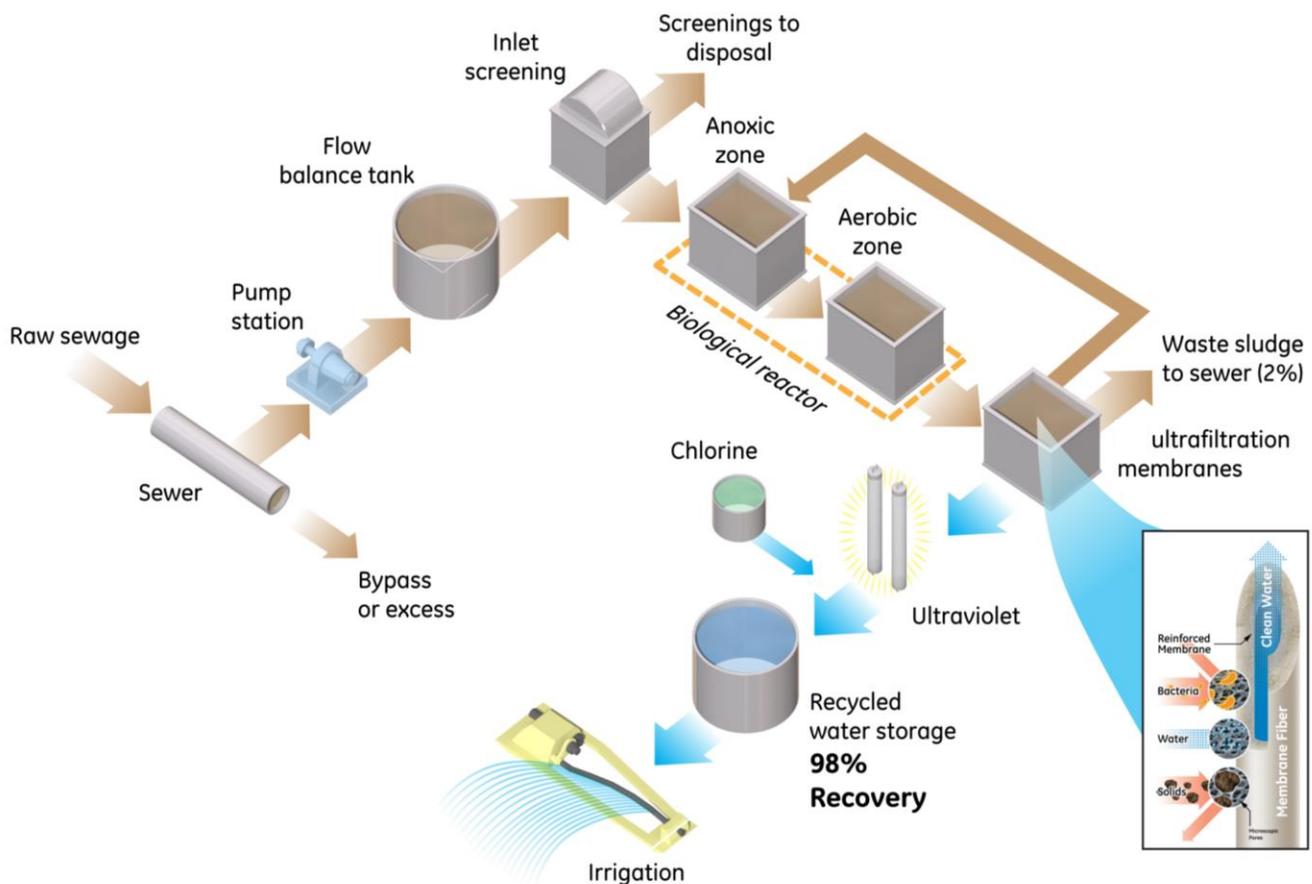


Figure 3: Gordon water treatment plant process flow diagram