



AGEING WWTP GETS AN AFFORDABLE MAKEOVER

CLIENT:	Terrey Hills Golf and Country Club
LOCATION:	Sydney, Australia
TREATMENT TYPE:	Decentralized sewage
CAPACITY:	40m ³ per day
SYSTEM SIZE:	6 x BioGill Towers

SITUATION

Thirty minutes north from the Sydney CBD and fringed by the Ku-ring-gai National Park, is the Terrey Hills Golf and Country Club. A former quarry site, the club opened in 1994 and today is renowned for its natural bushland setting and close proximity to the city.

As part of the Club's commitment to environmental best practices and caring for its natural assets, wastewater is treated onsite for reuse on the course. When the Club realized that its ageing wastewater treatment plant, using RBCs (Rotating Biological Contactors), was under-performing there were two choices: build an entirely new plant or upgrade the existing system.



Terrey Hills Golf and Country Club.

SOLUTION

After reviewing a variety of technology platforms, the Club decided to retrofit BioGill Towers to the existing plant. The nano ceramic media, known as "gills", inside every BioGill bioreactor, provide the ideal oxygen rich habitat for microorganisms, Nature's best recyclers, to grow and flourish.

This increases nutrient removal from the wastewater, resulting in high level reductions of BOD, COD and nitrogen.

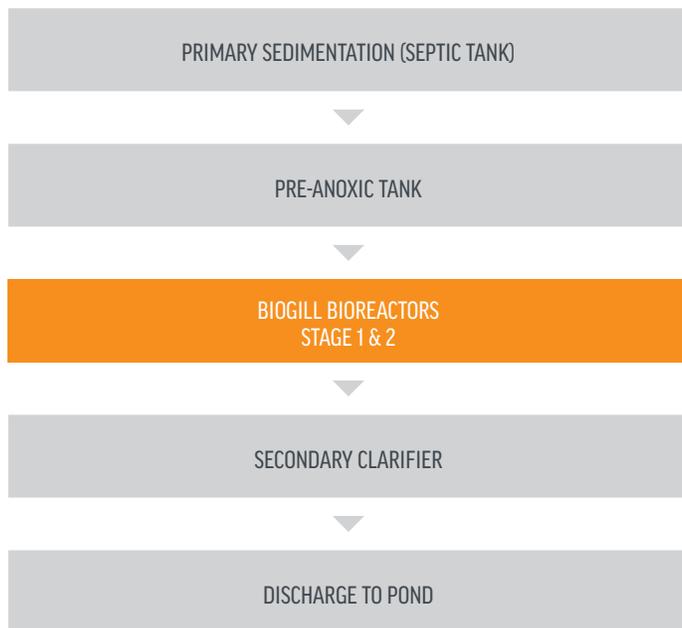


The BioGill system treating wastewater onsite.



DESIGN

The plant uses six BioGill Towers and four custom made submerged anoxic modules to treat 40,000 L/day of sewage from a residential estate and wastewater from the restaurant kitchen and restrooms at the Club. The treated wastewater is then reused for sub surface irrigation within the estate.



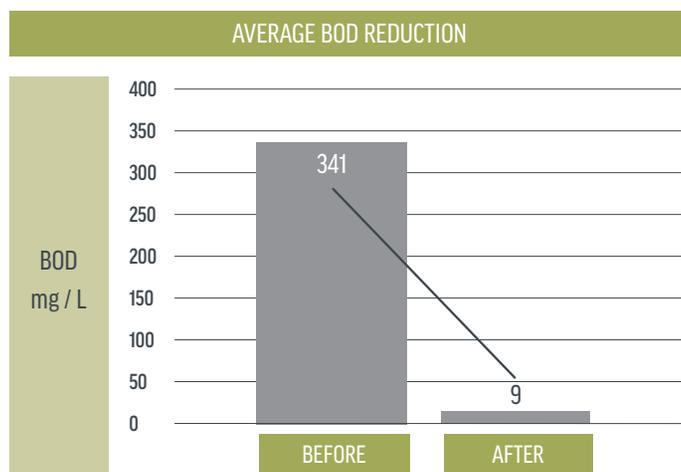
Retrofitting BioGill units saved the client money, increased the treatment performance and extended the life of the existing plant.



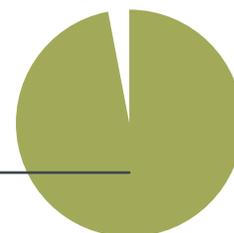
RESULTS

The makeover approach saved the Club money, increased the treatment performance and extended the life of the existing RBC plant. Another main advantage is that the BioGill system reduced the levels of nitrogen going into the irrigation water. Previously, high nitrogen in the water source was delivering more nitrogen to the turf surfaces, outside of the green keeper's control. This caused a variety of playability and turf health issues, including puffy turf that is prone to mower scalping.

As at May 2017, the plant is fully compliant, with independent testing showing total nitrogen reduced from 40mg/L to less than 8mg/L, total BOD reductions from 340mg/L to less than 10mg/L and soluble BOD in the effluent reduced to undetectable levels. All the treatment requirements from the local authorities are being met.



97%



BOD mg/L on average is removed through the treatment process

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Case studies and technical reports are available at biogill.com

