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# Byron at Byron

The Byron at Byron shows the way with water recycling

## The Situation

When water has become such a precious resource, it is refreshing to find that one of Australia's newest and leading resorts, The Byron at Byron Resort and Spa, is national leader in water conservation with a sewage treatment plant and irrigation system that features Grundfos products.

The award winning \$45 million resort is set within a beautiful 18 hectare lush rainforest at Byron Bay about a two-and-a-half hour drive south of Brisbane just over the border in New South Wales. It incorporates 92 air conditioned one bedroom suites, a tennis court, 25 metre pool, gymnasium, poolside sauna and luxurious day spa, plus superb restaurant and comprehensive conference facilities.

The building approval authority, Byron Shire Council, required the resort to have its own sewage treatment plant and its owners, Gerry Harvey and Harvey Norman, willingly accepted the challenge.

## The Grundfos Solution

The treated wastewater is reused on site and also supplied to the adjoining golf course for irrigation of landscaped areas. Thus the resort has been able to significantly reduce its consumption of town water while providing a stable landscaped environment that blends into the surrounding natural coastal wetland.

The resort supplements this treated water by capturing and reusing rainwater from the roofs of all the buildings.

"We wanted to set a standard," says Ed Haysom, of Haysom Architects Pty Ltd, who designed the resort.

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### TOPIC:

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### LOCATION:

Australia

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### COMPANY:

Byron

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The Byron at Byron Resort and Spa recycles all its sewage through a complex treatment plant, with the key to this vital operation being Grundfos digital dosing pumps.

The reclaimed and rainwater collection systems, pumping and dosing station, storage and irrigation systems were designed and installed by Grundfos dealer, Rothwells Pumps & Irrigation of Alstonville, New South Wales.

“It was a challenging project,” says Mr. Lee Rothwell. “The objective was to integrate and prioritize water resources available to the resort irrigation system, ensuring that rainwater and recycled water were used in preference to the potable town water supply.

“The treated wastewater is passed through a nano filtration system and then pumped into either a 110 kilolitre or 50 kilolitre storage tanks – with both tanks using replicated dosing systems. It is constantly re-circulated through the Grundfos digital dosing systems that monitor water quality and dose it with chlorine to provide residual disinfection, and acid to maintain the correct pH balance.”

Rainwater is filtered and pumped directly into the storage tanks. Although relatively clean, this water is mixed with the reclaimed supply, and so must also be monitored and maintained via the dosing systems.

Additional reclaimed water storage is provided to ensure that surplus recycled water flows are not wasted. A 600 kilolitre in-ground storage tank (located beneath the resort's tennis court) stores excess processed water from the sewage treatment plant when the resort irrigation system is deactivated for extended periods. Water collected in this wet weather storage is pumped a short distance to the Byron Bay Golf Course and used to irrigate landscaped areas adjacent to the fairways.

Apart from the integrated dosing systems, other Grundfos pumps are used within the complex include:

- 3 Hydro 2000 ME pumps for irrigating the resort and the adjacent golf course.
- 7 CHI pumps for the stage one rainwater collection tanks and the stage 2 rainwater collection tanks.
- 2 SP supply pumps to pump the recycled water collection sump to the golf course supply dam.
- 6 SEG pumps to supply raw sewage to the sewage treatment plant.
- 2 TP pumps to circulate the treated water from the nano filtered system through the Grundfos dosing system and then out to irrigation via CRE pumping system.

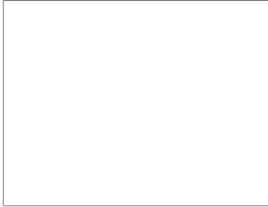
#### The Outcome

The Byron at Byron management is delighted with the system.

“Since its commissioning, the system has met our expectations,” says the resort’s General Manager, Mr. John Parché. “Many of our guests comment very favorably about how we re-use water rather than wasting it – most welcome comments at a time when Australia is experiencing drought conditions.”

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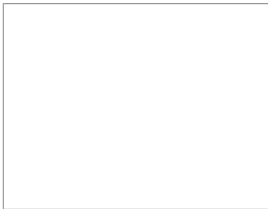
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