

# Long Reef set for **self-sufficient** future



Situated on Sydney's northern beaches, Long Reef Golf Club is a spectacular golf course established in the early 1900s on a headland surrounded by ocean on three sides. Over the past five years club management has put in place numerous initiatives which have given several options to provide a reliable source of good quality irrigation water without having to rely in any way on Sydney's potable water supply. In doing so this has ensured that the club is totally self-sufficient in its irrigation requirements now and into the future.

Long Reef Golf Club is also well known for its environmental stewardship of this unique area. The course is very exposed to the elements and water management along with environmental management is a very important part of the overall management of the Griffith Park area.

A Plan of Management for the entire headland has been established and has been in use for many years, as Griffith Park, as it is known locally, is a very important breeding ground for many rare and endangered migratory and local bird species. The headland also has many rare and endangered plant species which are protected under the plan.

In 1996 Long Reef Golf Club was successful in its application for a NSW Government grant to redirect stormwater from local roads and houses on to the course. Patterson Britton and Partners was appointed to design a wetland and pond system which was integrated with the reconstruction of a number of new holes.

This pond system consists of nine ponds with natural reed filtering allowing for irrigation and habitat purposes. The system which has been in place for over a decade has proved to be extremely successful. Each pond is interlinked with individual pipes which can be adjusted accordingly.

Originally flowing directly on to local

Together with his club directors and staff, Long Reef Golf Club superintendent Peter Donkers has worked tirelessly over the past five years to ensure that the NSW course is self-sufficient in its irrigation requirements for now and years to come.



PRINCIPAL PARTNERS

**RAIN BIRD**

**TORO**



**An aerial view of Long Reef Golf Club. The club is currently in the process of redirecting a 600mm stormwater outfall, which directly exits onto the local beach, back on to the course**

**Just five years ago it was not uncommon for Long Reef Golf Club to budget and spend over \$50,000 a year on potable water if or when required. Thanks to a proactive management and the efforts of course superintendent Peter Donkers and his staff this is now nil**

beaches causing severe erosion and pollution, this water is now naturally treated by the wetland and is substantially cleaner as it leaves the course than when it first entered.

The entire system has created a means for reliable irrigation as well as a means to encourage and increase fauna habitats for native frogs, birds and aquatic life. Studies show and prove that migratory bird numbers have increased markedly over the past decade and that all native fauna is constantly on the increase.

## FUTURE IN MIND

Although the wetland system is very successful, in summer or in drought conditions it could only supply water for the course for 8-10 weeks without rain, so it was still necessary to depend on Sydney's potable water supply to keep greens and tees alive.

The past five years have put increasing pressure on the industry to reduce its usage of potable water for irrigation on golf courses and although the original wetland system, created through the insight of past superintendents and directors of the club, has been instrumental in giving Long Reef Golf Club a secure future, some changes still needed to be made for future requirements.

In 2004/05 a complete new irrigation system was installed, with particular attention paid to system design and sprinkler placement due to the prevailing winds which can be constant at Long Reef. All green and tee irrigation installation was done in-house. Our local knowledge ensured that even in windy



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this point the water exits the 8th fairway and will flow into a new 40 megalitre storage dam at the current site of our maintenance facility. The DA for our new maintenance facility is in council and should be built in the next 18 months if all goes well.

Further major works are planned when the new storage dam is built as all the excavation material must be used on site. Thomson Perrett has redesigned a number of new holes in the master plan to accommodate all this material.

## SECURE TIMES

I am proud to say that over the past six years and more, many different initiatives have gone into place to ensure Long Reef Golf Club is totally self-sufficient in its water needs. The club is very proactive in its approach towards environmental issues which gives me great personal pleasure, as my staff and the club have worked very hard to ensure the future of the club is secure in these constantly changing times.

Griffith Park is a very important part of our local community for all who wish to enjoy the unique area. There are many volunteers, local community members and work groups who have put so much into re-establishing Griffith Park as a habitat corridor for many endangered species and our golf club works very closely with these groups to ensure the area stays as it is intended – a treasured gem shared by all for sporting and recreational use.

**Editor's Note: Peter was rewarded for his environmental management efforts at the 22nd Australian Turfgrass Conference in Brisbane (2006) where he was bestowed the AGCSA's Claude Crockford Environmental Award.** 🏆



As part of the stormwater re-use project one of the existing wetland ponds is being refurbished while a new 40 megalitre storage dam is also in the pipeline

conditions the sprinklers supplied water where it was required.

All fairway irrigation and main lines were installed by Hydro Technics Irrigation. A third pump was installed in the main dam to allow our watering window to be reduced significantly which gives substantial savings in electricity and water by sprinklers being less affected by wind during what can sometimes be only a short calm period at night.

In 2005 I fought hard with directors to allow me to sink a bore and search for underground water. A number of directors felt this would be money wasted as previous attempts had failed, but when pushed to show me details of previous attempts very little information came forward apart from a study done using a backhoe and placing 44 gallon drums in the ground to see how much water seeped into them. I organised meetings with hydrologists to discuss prospects and finally approval was given to test drill.

Since then two bores have been drilled with great success. No.1 bore was drilled to a depth of 105m supplying a constant 230,000 litres of water per day. No.2 bore was drilled to a depth of 85m and will be commissioned in the coming weeks (December 2008) after testing results showed this bore will supply around 180,000 litres of water per day. This gives us a total of over 400,000 litres per day.

Long Reef Golf Club is now totally self sufficient in its water supply for all its irrigation needs. Only five years ago it was not uncommon for the club to budget and spend over \$50,000 a year on potable water if or when required. This is now nil.

## UNTAPPED RESOURCE

But there was still more to come. Being located near the coastline, it was noted that major stormwater outlets running directly onto local beaches produced huge amounts of water,

even with the smallest of downpours, that were going to waste every time it rained.

In early 2006 the club, through the hard work of director and life member John Mullins, was again successful in an application for a \$240,000 Federal Government Community Water Grant providing for a major stormwater re-use pilot project. This grant is now being used to redirect these local stormwater outlets off the beaches and on to the course.

The project, which started in early November 2008, has stage one diverting major stormwater outlets from Anzac Avenue including houses in the immediate area and all runoff from the six-lane Pittwater Road. A 600mm concrete stormwater pipe has been installed from Anzac Ave through the club's car park to the course behind the 18th green.

Stage two will bring the pipe work into pond No.1, the start of the original wetland system. This stage is being completed as I write (late November 2008). Pond No.1 is currently being totally refurbished. The original pond level is being lowered by over one metre as the levels we are working with from Anzac Ave to the wetland have very minimal fall.

Stage three of the project will split the water diversion into two separate pipes – pipe one going to pond No.1 and pipe two flowing behind the 18th green to an outlet at the start of the 9th fairway. From this point the water will flow into a new wetland system which is currently being designed and incorporated into our new master plan put together by golf course architects Thomson Perrett. Dennis Jeffers from OzeEcoManagement will be used as consultant on the new wetland design.

The wetland will run through a number of holding ponds in front of the 9th tee block before flowing into an open rock swale drain which will cross the 8th fairway around 40m short of the green adding quite a degree of difficulty to what is currently an easy hole. At