

**Michael Bird discovers a course where the weather is less than kind when he pays a visit to Royal Porthcawl...**



# Braving the elements

**Recognised as one of the finest links courses in the British Isles, Royal Porthcawl Golf Club's location on the South Wales coast places it in the front line of a virtually continuous battle against the elements.**

Founded in 1891, the club has hosted many notable tournaments during its distinguished 107 year history.

These include the Amateur Championship, held five times between 1951 and 1988, the Home Internationals, British Boys' Championship, Dunlop Masters and Coral Welsh Classic.

However, it was the preparations for the club's centenary year in 1991 and the Walker Cup in 1995 which posed probably the greatest challenge on the links, triggering a series of events which have occupied Course Manager, David Ward, and his greenkeeping team for the whole of the present decade.

"The course is laid out on a coast which faces directly into the prevailing south-westerly winds," commented David.

"As a result, course management decisions and actions are influenced greatly by the weather and the sea. The close proximity of the shoreline means that we are under constant threat of flooding. At the same time, the wind is continually drying and eroding the natural dunes and grasses.

"Our rainfall is also well below the average for Wales. Instead of dropping their contents as they cross the coast, the storm clouds that sweep in from the Atlantic tend to wait until they reach the Welsh mountains. Average yearly rainfall in Brecon, 40 miles away, is four times that of Porthcawl."

These annually recurring problems were exacerbated by the exceptionally dry years during the late

1980s. So, when David was appointed Head Greenkeeper in August 1990, his immediate task was to restore a parched course to the best possible condition for the club's forthcoming centenary year. At the same time, he put in place a five year plan to renovate and improve the course ready for the Walker Cup in 1995.

"Although it was evident that the irrigation system needed upgrading and extending beyond solely the tees and greens, this was not my only concern," David pointed out.

"Over the years, conditions had taken their toll on the whole course and there was pressing work to do on the greens, tees, bunkers and rough.

Improvements were also required to the sea defences and drainage, principally alongside and on the second and third fairways. During the winter storms of 1990, we suffered salt water flooding to a depth of 12 feet on the 3rd fairway, which played havoc with grass growth and soil conditions."

The programme instigated by David in the autumn of 1990 commenced with intensive hollow coring and sand top dressing of all the greens to eliminate the thatch that had become established. The treatment was accompanied by a scarifying action followed by overseeding with a fescue/bents mix.

"The response was excellent and we have continued to verti-drain, hollow core, top dress and overseed every year since," said David.

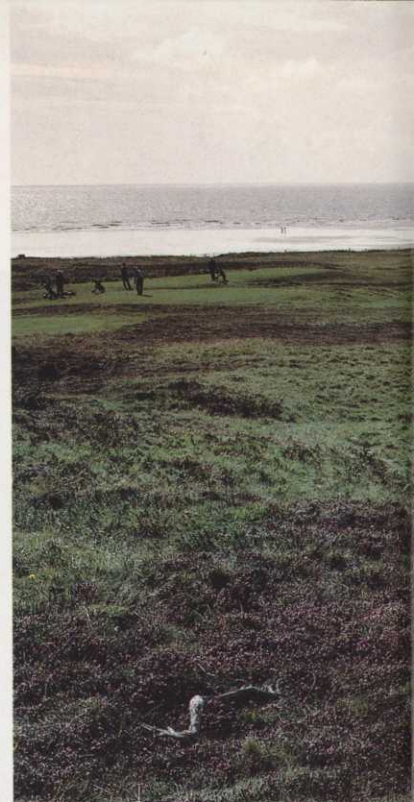
"Nothing fancy, simply regular treatment during the late summer and autumn applying plenty of sand which is brushed mechanically into the core holes."

To assist the renovation of the greens, work began on upgrading the adjacent sprinkler heads to provide better and more even distribution of irrigation water.

The essential works carried out during late 1990 and early 1991 by David and his staff ensured that Royal Porthcawl's centenary year is remembered for the right reasons by club members and the many visitors from Britain and overseas who played the course during 1991.

However, there was plenty still to do to get the course ready for the Walker Cup four years ahead.

Working in conjunction with the greens committee and specialists



appointed by the R&A, David started on a programme of rebuilding tees and bunkers, renovating fairways and controlling bracken in the rougher areas.

Between 1992 and 1994, every one of the 96 bunkers on the course received some attention, ranging from complete revetting of the front and sides to the installation of drainage systems and bunker sand renewal.

A particular problem had been created by the use of fine dune sand which had become compacted over the years by feet and rain, restricting the free downward movement of water. As well as laying pipe drains and constructing drainage sumps in many of the bunkers, the club decided to replace the dune sand with locally dredged sand from the Bristol Channel.

Slightly coarser than the original, it provides the stroke-making characteristics of a good bunker sand, yet drains freely and does not blow so easily.

At the same time, around half of the tees on the course were either being rebuilt and reseeded, or renovated using a similar aerating, top dressing and overseeding programme to that employed for the greens.

To improve drainage and grass growth, regular verti-draining and slit or spoon tining was introduced for the fairways. These treatments were accompanied by application of a green mulch compost to the thinner areas to add body and reduce erosion, encouraging re-establishment of the native bents and fescue grasses.

With the co-operation of Mid Glamorgan County Council, a formidable barricade of huge boulders and shingle banking was placed along the foreshore in strategic positions between the first tee and third green. This has since been complemented by a soil and sand flood



Above: David Ward, Head Greenkeeper at Royal Porthcawl GC

Below: The greenkeeping team at Royal Porthcawl GC





bunding on the course to protect the low-lying parts of the third fairway.

"The course was in pretty good all-round condition as the Walker Cup approached," commented David.

"However, 1995 was a very dry and difficult year, highlighting the urgent need for controlled irrigation across the whole course. Although we fared better than many other clubs, the fairways and tees suffered badly prior to and during the tournament."

The decision was taken to carry out a complete upgrade of the irrigation system over the next three years, with completion of the main work planned in good time for the Home Internationals being held at Royal Porthcawl this September.

As most of the greens' pop-up sprinklers had been renewed between 1990 and 1995, top priority was given to laying new pipework and providing new sprinklers for the tees. There was also an urgent need to improve the storage capacity and the quality of the water being applied, as David explained:

"Prior to the Walker Cup, we had relied on two 12,000 gallon tanks supplied by a bore hole on the course," he said.

"To prevent the irrigation pumps running dry, a control system had been installed which switched off the water long before the tanks were empty, giving us a total available capacity closer to 16,000 gallons. It was clear that this was a long way short of the actual requirement which would be needed for watering all the greens, tees and fairways.

The second problem was the quality of the water being pumped onto the course. Because the borehole is only 170 yards from the beach, the water had always been slightly brackish. However, it was analysed monthly and had not caused any real concerns until the drought of 1995. Measured a week or two before the Walker Cup, the sodium

level had risen from a normal reading of 200 milligrammes per litre to almost 600 milligrammes per litre, causing tremendous stress to the grass."

To overcome the water supply difficulties, David arranged for the installation of a new above-ground butyl-lined store with a total capacity of 63,000 gallons. Water is supplied from the bore hole via a smaller capacity pump with a lower extraction rate. Although taking longer to fill the store, sodium and calcium concentrations are reduced.

As a safeguard in drier periods, the club also budgeted £7,000 a year for a mains water feed to the store. A conductivity monitor constantly measures the chemical composition of the water supply from the bore hole, turning it off the moment salt concentrations rise above a pre-set level. The mains water feed is then switched on, automatically, to replenish the store until the bore hole monitor allows the flow of water from below ground to be restored.

A second conductivity monitor fitted within the pipe between the store and the pumps ensures that calcium or sodium concentrations in the irrigation water never approach danger levels. As a result, water quality and quantity are now of a consistently high standard.

Maximum water usage on the course over 24 hours has been estimated at 35,000 gallons, although David said this was a worst case situation in the most trying of conditions.

"However, we can refill the new store from empty in 15 hours and can still call on the two existing 12,000 gallon tanks if needed.

The new store and pumps feed a pair of water pipes running out to two different parts of the course to supply the various sprinkler heads," he explained.

"We have two small jockey pumps to maintain an equal and

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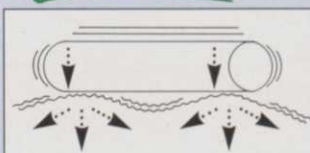
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# Braving the elements



consistent pressure in the system. If needed, a third pump kicks in. We also have a fourth pump in the shed ready for the day that the irrigation system covers the whole course, including all of the fairways."

The complete Watermation system is controlled by an automatic timer in David's office. It also has a remote control unit enabling individual sprinkler heads to be

stopped and started from out on the course.

Having reached a position from which he can exercise precise control over the fresh water being pumped onto Royal Porthcawl's turf, David is now looking to achieve a similar status with sea water and drainage run-off.

A new green has been built on a higher-lying area behind the existing second green to minimise the

risk of flooding, with the adjacent dune system providing additional protection against stones or water being blown from the beach. Currently growing in, the new green will be assessed by members this season.

The 3rd fairway, notorious for flooding from both the sea and the surrounding higher ground, now features a 1,000 gallon underground collection chamber with

pump. All water finding its way into the chamber is quickly pumped out to sea.

"The course will be all the better for the improvements being made," concluded David.

"Although we are situated in a very harsh environment, it is most important to work with the elements. After all, it is the weather and location which give Royal Porthcawl its truly great character."

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