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

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.
Braving 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, particularly 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 was restored 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 Davide. "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 returfed, 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...
bundling 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 tour-
ament."

The decision was taken to carry
out a complete upgrade of the irri-
gation 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' popup
sprinklers had been renewed
between 1990 and 1995, top priori-
ty 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 63,000 gallons. Water is sup-
plied 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
water to 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
calculations rise above a pre-set
level. The mains water feed is then
switched on, automatically, to rep-
fill the store until the bore hole
monitor allows the flow of water
from below ground to be restored.
A second conductivity monitor fit-
ted 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 qual-
ity and quantity are now of a consis-
tently high standard.

Maximum water usage on the
course over 24 hours has been esti-
imated at 35,000 gallons, although
David said this was a worst case sit-
uation in the most trying of condi-
tions.
"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
level had risen from a normal read-
ing of 200 milligrammes per litre to
almost 600 milligrammes per litre,
causing tremendous stress to the
grass."

To overcome the water supply dif-
ficulties, David arranged for the
installation of a new above-ground
butyl-lined store with a total capaci-
ty of 63,000 gallons. Water is sup-
plied from the bore hole via a small-
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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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