

Maintaining a water balance on the English Riviera

Situated on the Haldon plateau, almost 900 feet above sea level, Teignmouth Golf Club enjoys breathtaking views towards Portland Bill in the east and across Dartmoor to the west. Yet, the unique position of this seaside course brings its own special problems, as Michael Bird discovers.

Spring water pumped 600 feet up an escarpment has literally been a summer life-saver for the greens at Teignmouth Golf Club.

Stored in a below-ground reservoir and applied to the course by automatic irrigation, the water has helped maintain adequate grass cover and growth during times of low rainfall, protecting the turf against the strong, burning winds which are particularly prevalent on the panoramic 18 hole course overlooking the Teign estuary in south Devon.

In winter, however, it's a completely different story, as head greenkeeper, Jack Moore, explained: "The course was designed and constructed under the supervision of Dr Alisdair Mackenzie, opening in 1924. No drainage system was built into any of greens at the time and that situation still exists today.

"Because there was no practical or convenient way of getting water onto the course at the time, it was designed so that virtually every fairway sloped towards a green, allowing rainwater to run to where it was most needed," he said.

"That may have been a good idea 50 to 60 years ago, but we are suffering as a result. The nature of the land, which consists of a maximum four inches of peaty top soil over a layer of flints, and then a layer of shaley clay, has produced a great deal of subsidence and compaction around the course as a result of the traffic over the years."

That situation, coupled with the lack of adequate drainage, meant that the greens became waterlogged quite quickly, resulting in thatchy and uneven putting surfaces.

Although temporary greens are still used occasionally at Teignmouth, there has been a great improvement in course conditions as a result of work instigated and

carried out by Jack Moore and his team of three assistants over the past six years.

"For a start, it was imperative that the greens be kept open to allow the water to escape as quickly as possible," he explained. "So, in addition to slit aeration at weekly intervals over winter, and solid tining every fortnight during the summer, we also Verti-drain each year in October."

Water diversion has also been assisted by recontouring of the surroundings of the most badly-affected holes.

Because the greens were also looking very tired as a result of their water-logging in winter and battering by sun, wind and feet during the summer, Jack Moore initiated an annual programme of turf dressings, starting with an application of lawn sand at the end of March.

The greens are then scarified and top-dressed with sand which, said Jack, had been most beneficial in helping to keep the surfaces open.

This treatment is followed three to four weeks later by BASF's Floranid N slow-release fertiliser, spread at a rate of $\frac{3}{4}$ oz per sq. yard.

A second similar application of Floranid is given in June or July, sufficient, Jack Moore explained, "to take us through to the back end of the year."

In September, every green is hollow tined with a Coremaster machine and top dressed, again with straight sand. Last year, for the first time, overseeding was carried out using an 80 per cent fescue, 20 per cent bents mix.

"This was most successful," pointed out Jack Moore. "Germination was good and the overall results were excellent. We shall definitely be doing the same again this season."

As part of the summer turf maintenance programme, the greens are

lightly scarified fortnightly and a light top dressing of sand is applied each month. "Because of the past history of the greens, we do have a thatch problem," explained Jack. "This treatment, together with regular slitting using the Cushman, has helped no end."

Although the greens are mowed daily in the summer - to $\frac{3}{16}$ in normally, or $\frac{1}{8}$ th inch prior to a tournament - the story is very different on the remainder of the course.

"When I arrived, all areas were cut extremely tight," pointed out Jack Moore. "The result was some pretty horrific golf ball bounces with wind burn soon turning the turf brown in dry spells."

The first action taken by Jack was to increase the height of cut on the fairways, greens approaches and surrounds. He also reduced the frequency of mowing. "We needed more grass cover. It doesn't grow that quickly anyway due to the altitude and the acid conditions, while the surface gets extremely hard due to the drying winds and the flinty soil. We now aim to keep $\frac{3}{4}$ in of grass on the fairways."

To minimise wear on the tees, marker positions are moved daily, while mowing - to $\frac{1}{2}$ in minimum - is a twice-weekly operation.

Because golfers are out early at Teignmouth, due to the extremely high number of summer visitors, Jack Moore and his staff are always on the course at 6am, cutting the greens first thing and moving the hole positions every other day.

However, this operation has become increasingly difficult due to the uneven surfaces of the greens, which were not flat even when constructed.

"Dr Mackenzie liked to build in different levels on a golf green," explained Jack Moore. "This, coupled with the subsidence has left us

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Jack Moore with the rabbit fence erected to protect the 18th fairway. Twelve months ago the land within the fence looked the same as that to Jack's left.

with very few level areas for pin placement."

As a result, a programme of green rebuilding is now underway, commencing with the construction of a brand new short hole which will be ready for use in the spring of 1990, and designed to be brought into play when one of the existing greens on the course is being worked on.

The first green planned for attention is the 16th which has sunk 3 feet since it was built.

With design assistance from golf course architect, Fred Hawtree, the intention is to level and extend the green and install a modern drainage system. The surrounds will also be recontoured so that water no longer flows onto the putting surface. Other badly-affected greens will receive the same treatment in future years.

At the same time as the new 135 metre short hole was constructed, Jack Moore and his team prepared the land for a new fairway and tee for the 18th.

"The aim is to make this a par four

instead of a par three hole, with an interesting dog leg to the right," he explained. "Because of the lack of top soil, it was impossible to plough so, after clearing the virgin gorse and heather, we rotary cultivated and raked instead. Having removed more than 30 tonnes of flints, seeding was completed last September."

Rabbits are a major problem on the 6,142 yard, par 71, heathland course which is bordered on all sides by common land, so Jack has had to completely fence in both the new spare green and the new 18th fairway and tee for protection.

Fencing is one job he has had to carry out regularly in the past, especially on ground under repair or where greens surrounds have been recontoured to minimise the risk of flooding.

"Our biggest hazard is the shallow depth of the top soil, leading to other problems elsewhere," he explained. "Erosion of walkways and the areas around greens and our 74 bunkers was very bad when I came to the course in 1982.

"My first job was to hire in a screening plant which we used to make 3000 tonnes of a soil and sand mix. This was carted around the course, spread out in the most badly-affected areas and then seeded. The improvement is now welcomed by members and the greenstaff."

Jack Moore pointed out that the job had been made easier because he had inherited two superb assistants: "Charlie Woolnough and Nick Stonelake were here when I arrived. They are first-rate lads and can turn their hands to any job on the course.

"Our apprentice, Danny Spencer, is proving to be both enthusiastic and dedicated. I never forget that a head greenkeeper is only as good as his staff."

Although no drainage is present within any of the original greens, the course does possess an effective main system which is regularly being added to.

Drainage channels, about 18in deep, border many of the fairways to catch rainwater running-off from

ON THE COURSE



Jack Moore (centre) with his team in the machinery sheds.



Apprentice greenkeeper Danny Spencer aerates the 18th fairway. Jack Moore is trying fairway aeration for the first time this year in an attempt to open up the extremely hard top surface. Exmouth can be seen in the distance.

the neighbouring higher ground. From these channels, pipes have been laid to carry water beneath the fairways.

"The sub-surface drainage can be

peculiar because of the nature of the soil structure," said Jack Moore. "Although the water can permeate the four inches of top soil, it is not always able to get through the sub-

sequent flinty layer. It then reappears like a spring, without warning."

The poor nature of the soil, while keeping Jack and his staff permanently on their toes, does help in one area - the club has very few problems with weeds.

"We apply sprays preventively," said Jack. "Fusarium patch is our biggest enemy, appearing mainly in spring and autumn when there's low cloud about creating damp, humid conditions."

Unfortunately, this cloud, which drifts in from the sea or the moors, rarely helps in keeping the greens watered. That's down to the automatic irrigation system - installed 20 years ago, updated in 1984 and now applying up to 200 gallons of spring water through four sprinkler heads per green during each irrigation session.

"It's a fine balancing act between the course's summer and winter water requirements," commented Jack Moore. "The secret during the summer is never to let the greens dry out, and by keeping a close eye on the weather we've been able to maintain good putting surfaces, even when drought threatens elsewhere."

Jack Moore said that he had been lucky in his timing.

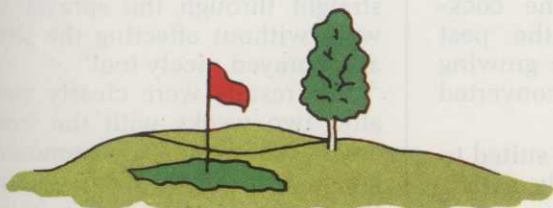
Anyone watching him, and his staff at work, will appreciate that luck has a small part to play compared with the skill, time and dedication that goes into looking after a course that is a delight to golfers, yet provides a constant challenge to those responsible for its year-round care and maintenance.

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