



DRAINING HEAVY LAND COURSES

Golf courses built on land which contains a high proportion of clay usually have drainage problems in the wetter times of the year. Unfortunately, it is the periods when the 'course closed' notices go up that the members recall with disgust and for which the management is reprimanded. But heavy-land courses have some good points!

Clay, by its very nature, holds moisture considerably longer than a sandy soil. When irrigation has to be applied to the sandy fairway to keep it green, the heavy land fairway will often go for weeks before it shows signs of stress due to water shortage. This fact will be increasingly important as the price of water soars, and its availability becomes limited particularly in southern areas.

So, how can one best 'manage' the heavy land golf course? If the sward remains very wet or waterlogged for periods of several days then the roots drown and cease functioning. When active growth restarts in the spring the shallow root system struggles to cope with more frequent mowing and more player activity on the course. Where water logging has not occurred and the grass root system is considerably deeper the sward grows away with vigour.

Instead of thinking negatively about the heavy clay soil let's think positively! When one inch of rain falls on an acre it amounts to 22,625 gallons of water. That's money! In the spring, summer and autumn much of this moisture is lost through evaporation, hence the course remains playable. But when the winter comes losses through evaporation virtually cease and the water content of the soil builds up.

It is widely accepted that a good land drainage system is a requisite on heavy land golf courses. This drainage system must allow play to continue in all but the heaviest periods of rain, but of equal importance it must stop the grass roots from drowning.

In compiling drainage plans thought must be given to where this drainage water is to go. Can it be used for irrigation of the course in the summer months? Can the course be enhanced by significant water features? Can it be sold? It must be appreciated that even when well drained a heavy land course is not going to have the same characteristics as a

sandy one, but as climate change accelerates the heavy land course may have distinct advantages over the sandy course.

ENGLISH GOLF UNION (EGU) SPLASH OUT ON DRAINAGE

The EGU at Woodhall Spa built the Bracken Course on heavy land in the early 1990's. Last year they invested in land drainage in several areas of the course. So what has been their approach and what has been the outcome?

Land drainage works on established golf courses conjure up scenes of rutted turf, big tractors digging big trenches, gravel spillages and fairways out of use for weeks on end.

So why last year did the EGU start draining fairways on the Bracken Course at Woodhall Spa just four days before the Golf Medal Competition in August? We went to talk with Richard Latham, Director of Golf, and the Courses Manager, Sam Rhodes, to find out.

Richard Latham set the scene. The Bracken Course was built in 1995-96. Its construction entailed the removal of many trees and moving considerable quantities of soil. A land drainage system was installed at this stage but the spacing of the lateral drains has been such that on the heavy clay soil excess soil water has been slow to clear.

Furthermore, visitor numbers to the Hotchkin and Bracken courses have grown considerably in recent times and it had become imperative to improve the speed of drainage on the Bracken course to prevent damage to the sward.

So for the big question - when should it be done? The EGU hosts numerous tournaments during the spring, summer and autumn. Many corporate days are held also and they must be given consideration for they bring in substantial income. So it would seem that at this time of year drainage activities cannot be contemplated.

But the Course Manager points out that spring, summer, and autumn are the best times for drainage works. Undertake this work in the wetter winter months and the nightmare scenario with which this article opened can be expected.

The grounds staff were charged with getting the drainage improved on four fairways with minimum disruption to the tournament schedule. It was decided to do it in mid August.

It was explained that the very latest drainage equipment in the hands of experienced operators is speedy, clean and causes little damage to the playing surface. They believe it preferable to have equipment on tyres as opposed to tracks for wide low-ground-pressure grassland tyres leave virtually no impression on the ground.

A flag layout was used - as opposed to a herringbone layout - running the main drains at the side of the fairway, possibly just in the rough, and running the lateral drains across the fairway at ten metre spacings. The main disfigurement of the turf occurs where the lateral join the main drain. With the flag layout this is of little consequence, but with the herringbone layout this disfigurement occurs in the most prominent part of the fairway.

In practice this turns out to be easier said than done for one has to transverse irrigation pipes, irrigation control wires and electric cables many of which seem to have moved since plans were drawn up!

The EGU engaged the Contracting Division of Shelton Sportsturf Drainage Solutions to implement the plans for they have the most advanced equipment suited to the specific needs. The First fairway was drained in its entirety in four days and such was the finished job the Gold Medal Competition was played on the following days.

The next week part-drainage of fairways six, ten and 12 was undertaken. In each case the fairway being drained was closed for play for one day only.

For the technicalities. LYTAG was used as the permeable fill over the pipes and this was brought to within 50-75mm of the surface, topping-off with Aitkens Sportsturf Pro sport Rootzone. The drain runs were

then lightly rolled and a matching grass seed mixture spread by hand. No debris whatsoever was left on the grass for fear of damage to the precision mowing equipment.

LYTAG is a manufactured product originating from the pulverised fuel ash from selected power stations. Being spherical it flows readily and almost eliminates entirely the possibility of voids occurring when backfilling narrow trenches. Using 4-8mm Lytag provides a hydraulic conductivity of 2323mm per hour.

It weighs around 800kgs per cu metre and has the advantage of absorbing water hence improving the micro climate. It is available in 2 grades, 4-8mm and 4-14mm. Its relatively light weight has appeal when transporting the material over fine turf surfaces. Furthermore it is not subject to the Government's Aggregate Levy.

Richard Latham stresses the importance of working closely with the contractor to minimise disruption to the playing schedule. Speed is all important and this is best achieved by team working and co-operation as opposed to adopting a we/they attitude.

The EGU had already installed secondary drainage on the fairways in question with their Shelton Gravel Band Drainer and these bands have linked into the new scheme.

Reflecting on the busy two weeks of drainage activity both Richard Latham and Sam Rhodes have no doubt in their minds that the drier summer months are the best time to undertake drainage on golf courses. The Shelton claim to be able to 'drain today and play tomorrow' is no idle boast for with the advanced equipment now available, and with a contractor employing skilled operators, it boils down to 'short term inconvenience for long term benefit'.

And for other clubs contemplating land drainage in the summer months perhaps that is best way to sell it to the Club members.



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