

DIARY OF A GOLF COURSE: STONEY GROUND

As the new golf course at Clandon Park takes shape and is prepared for seeding, Peter Jones takes a look, this month, at the construction techniques, materials, and preparation of the rootzone materials to ensure that the course will get off to a flying start and be economical to maintain.

Soil structure (the way particles of soil are arranged together) is just as important as soil texture (the relative amounts of different sized particles) in governing how water and air move in soils.

Both structure and texture fundamentally influence the suitability of soils for growth of grass roots, and the construction methods and choice of materials used to build a new golf course are therefore of great importance to the successful establishment of the course.

In today's financial and environmental climate, a common sense approach and an understanding of practical realities is also required to achieve the required finish.

The topsoil at Clandon Park was stripped from the greens, tees and bunker sites, and put into storage mounds in February for re-spreading at a later date.

Frequent heavy rainfall during March, April, May and early June put paid to plans of screening the topsoil for re-use around the greens and tees, and hence an opportunity for an early seeding date was lost due to weather.

Mid June saw the topsoil screening underway using a 20mm screen to remove the flints from the soil.

Pipe installation

Prior to the re-spreading, the irrigation pipes were installed and water supply connections were made to two on-site boreholes, and a mains water top-up supply. A camouflaged water tank installed, part above and part below ground level.

Drainage pipes from greens and tees were then installed, discharging into deep, vented sump holes, allowing drainage water to find its way back into the chalk.

Deep sumps were also installed into the bunkers and grass hollows and protected from silt by polypropylene membranes. Where the drainage performance of certain bunkers/hollows was



noted to be slow, a discharge pipe was installed to an additional nearby sump hole, away from the playing area.

All irrigation and drainage information was then accurately plotted onto an As-built plan as a reference aid for the greenkeepers.

Tree pits

The locations of strategic new trees were marked, and tree pits of 1m x1m x 1m were dug out of the chalk and filled with topsoil during the respread, to save the disruption of coming back with heavy machinery during the winter months.

Topsoil Management on Fairways and Roughs

With fairways and rough areas constituting by far the biggest area of a golf course, the economic considerations for topsoil preparation can have a major financial bearing on the budget for a new project, especially where stones are a major problem.

Other new clubs around the London outskirts have tackled similar problems in various different ways. At the London Golf Club, all the topsoil was screened out of the topsoil and sand was added to bulk up the remaining soil. At The Grove, the fairways were toppedressed with over an inch of sand during the Grow-in period. Here at Clandon Park, a third method was used with environmental considerations in mind.

A tractor-mounted stone-crusher was to go up and down the fairways and roughs and physically crush the flints into smaller fragments of stone, thus retaining all the natural materials on site, and eliminating the need to import and spread expensive sand materials.

The Kirpy stone crusher required a 190HP tractor with creep gears to operate the machine efficiently, and was a slow, but worthwhile process.

Final cultivation and preparation of the seedbed was achieved by experienced and knowledgeable

operators using stone buriers, cultivators, and specialist compaction equipment. Finally the seed was sown at the recommended 25gms/m² using a drop seeder.

Tees

Preparation of the tees tops began in late June using 60% of screened topsoil and 40% of imported sand, carefully ameliorated so that the proportion (ratio) of soil was greater at the bottom of the profile, and the proportion of sand was higher near the surface of the profile - a system which works well on sports pitches. At 250mm deep, the rootzone profile can produce a sufficient hydraulic head to drain the surface well, yet have the benefit of retaining good soil strength, better water and nutrient retention, and a reduced need for irrigation and fertiliser applications during the summer when compared to a USGA rootzone. Tees were also graded with a 1% fall to aid surface run-off, and a 2m radius on each corner to create ease of maintenance with ride-on mowers.

Tees were sown with the same choice of seed as used on the fairways for ease of maintenance at a later date.

Greens

The use of a USGA rootzone was decided upon as a forgone conclusion to ensure good drainage and a resistance to compaction, albeit that the irrigation and nutrient requirements of a sand based USGA rootzone can leave a bit to be desired from time-to-time. An agronomy plan was proposed for suitable amendments to improve these characteristics prior to sowing the greens, along with the use of Mycorrhizal inoculants.

The proposed seed mixture for the greens was: 35% Chewings Fescue, 35% Slender Creeping Red Fescue, and 30% Brown top bent, by weight, with appropriate bent cultivars chosen for their colour and leaf blade characteristics to blend in with the inevitable invasion of *Poa annua* in five-10 years time.

The contours on the greens were designed and constructed to create interesting borrows and enjoyment for golfers at summer mowing heights of 4mm to 5mm by incorporating a 1% to 2% gradient through the backbone of the green, subtly rising into 4% to 6% slopes running into the surrounding mounds, with ease of maintenance being of utmost importance.

Next month's article will look at some of the Grow-In and Greenkeeping procedures.

