

Surrounds and walk-off area management

The challenge

The Scottish climate is changing. A fact that Scottish golf clubs confirmed in 2011 and 2012 when a combination of unusually high annual rainfall (up to 2200mm in the west of Scotland compared to a 30 year average of 1700mm and 230 rain days compared to 190 days average), along with periods of intense rainfall and flash flooding resulted in unprecedented course closures across the country.

(stats. courtesy of STRI)

The low sunshine hours and lack of fast natural drying has had a severe impact on the playing conditions of our courses. This has resulted in a variety of issues including foot printing, ball plugs and increased thatch and organic matter layers and disease pressure on greens and tees.

Fairways and bunkers also suffered from increased drainage problems with many existing drainage systems unable to cope with quantities of surface water causing waterlogging and potential pollution and erosion issues in watercourses.

Soil moisture levels and temperature changes are also causing disease and pest outbreaks resulting in physical and visual damage to turf.



Anthracnose scars



Snow Mould damage to green surrounds



Crow damage after fever fly infestation

Rounds of golf are often increasing as playing seasons lengthen along with the use of trolleys and buggies. Traffic flow is dictated by the design and natural and imposed features of the course. Narrow entrances and confined walk off areas due to bunker positioning can focus wear along certain routes. In certain parts of many golf courses there are areas of intensive golfer traffic resulting in damage to the turf surface with direct abrasion of the leaf tissue and loss of turf density creating unsightly areas of bare soil which are easily eroded. Increased traffic results in compaction of the soil which can affect turf growth and impact of drainage in certain areas resulting in localised waterlogging. These problems are more acute in the winter period due to limited grass recovery and increased vulnerability of the soils to compaction.

Expansive course layouts are able to spread the traffic over a much wider area and potential “bottlenecks”/cross over routes are easier to avoid. Small greens and tees will succumb more rapidly to the effects of wear.

Golf trolleys have limited flexibility for moving around obstacles when compared to golfers who carry their clubs increasing the degree of turf wear, notably the powered machines due to wheel skid and increased weight.



Wear and tear in high traffic areas

The resulting remedial turf maintenance and drainage works to combat the disease, pests and erosion all combine to have an impact on club maintenance budgets and staff resources and income streams are affected if the courses were unplayable. Members satisfaction can be affected if areas are designated ‘Ground Under Repair’ too often.

So club committees are making some serious long term decisions about how they are going to adapt the management of their courses and what infrastructure investments are going to be needed. Failure to adapt will mean reduced course quality and playability and may result in loss of members and visitors in an ever more competitive Scottish golf sector.

The Solution

In addition to managing greens and tees, many clubs are now finding they have to manage approaches, surrounds and walk off areas more than previous years to counteract the damage that is being caused by golfer traffic especially as the climate change impacts are being seen on the course.

The green surround is the mown area forming a band some 5–10 metres wide around each putting green. Layout will vary according to the architecture and strategy of individual holes, so within surround we may include fringe (fairly close mown collar and apron), fairway and semi-rough. Indeed, in some cases, deep rough may be part of green surround. The surround will certainly include the approach run-up to the putting surface, the walk-through, and the line of walk-off to the next tee.

A survey was carried out with a variety of clubs across Scotland with different types of courses to ascertain the impacts they were finding in high traffic areas and what they are doing to alleviate the problems. Of those inland clubs surveyed rounds played per year varied from 16000 up to 37000 a year with Links courses surveyed having 24000 to 41000 rounds played per year.

Distance walked between holes and the next tee varied from 350 to 1000 additional yards resulting in approx. 4.7% up to 13.8% additional yardage of non-paying surfaces walked over by golfers.

For some clubs these areas were tarmac / shale paths which were erosion resistant and required little or no management. Others however found the walk-off routes were having to be managed to combat effects of climate change and golfer traffic. Additional management to approaches, surrounds and walk off areas in total resulted in 3500m² up to 35000m². This can contribute to a large proportion of a maintenance budget depending on what type of management is used in some cases up to £6-8000.

Traffic management of surrounds and walk off areas

Monitoring of the weather enabled all surveyed clubs to make informed decisions about course management and timings. Restricting trolleys and buggies is the first cost free method in combatting wear and tear in surrounds and approaches. The pressures imposed by golf trolleys are particularly acute during the late autumn and winter months and are aggravated by the lack of natural turf recovery and vulnerability of the 'wet' soils to compaction forces. The use of wide-wheeled trolleys that have replaced narrow-wheeled versions has eased the pressure to a degree, but the ever more popular heavier electrically-driven trolleys could increase the scouring effect on the turf, especially under wet surface conditions.

Enforcing a local rule that clubs must be carried will help break the pattern and spread the load of the golf traffic more evenly. Where good channels of communication are established and co-operation of the golfers assured, then temporary suspensions, in accordance with prevailing ground and weather conditions, may be a workable compromise. The designation of trolley parks may serve

a similar purpose and dictate an alternative route from the fairway to green and green to the next tee.

Redirecting golfer traffic was also employed by most surveyed clubs with a combination of temporary /winter greens and moving pin positions strategically to encourage walk off in a certain direction with a combination of hoops or ropes to encourage golfers in a certain direction. Some clubs are using temporary / alternate winter tees or tee mats.

Turf Management

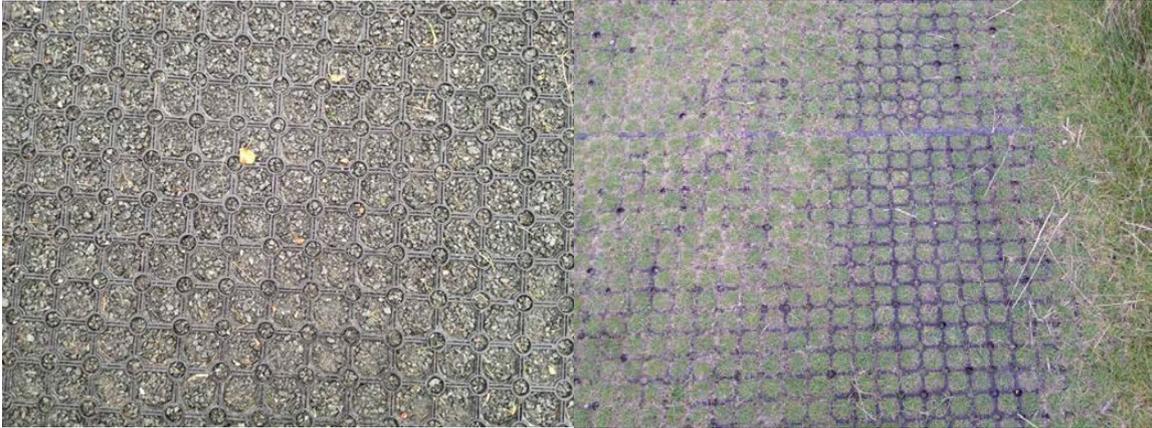
All surveyed clubs have adapted their turf management of surrounds and walk off areas to improve the condition. Cutting heights, frequency of cut and type of equipment used are considered to reduce turf stress along with routine aeration and verticutting and some clubs coring and scarifying. Some but not all of the surveyed clubs top dress their surrounds at least once per year but often the lack of top dressing is down to budgets. Watering is often required to maintain good run-up conditions on longer holes, and occasionally all round greens in dry weather and drainage in place where necessary.



Selective thinning and/or removal of scrub and trees will reduce shade and improve air flow and thus improve turf viability and its ability to withstand wear. Trenching (and insertion of root barrier) will limit tree root competition effects.

Reinforcement materials

A number of reinforcement materials are available with the objective of spreading loads and protecting the underlying soil structure, i.e. green to tee and walk-of areas. Materials available include a needle-punched geotextile and plastic grid tiles. Some clubs stabilise the existing rootzone on traffic routes and tees with rubber crumb, polypropylene fibres or small pieces of mesh.



Rubber mesh mats allowing grass to grow through

Where the above measures fail to provide satisfactory control over wear, then path installation is the only feasible option to provide a stable surface which will support the continual throughput of the golfers. A sound, well drained base is essential with a compatible surfacing material. There are many recycled path materials available that are used by clubs such as recycled plastic astro-turf, recycled rubber crumb materials, or recycled woodchip.



Recycled wood pallets chipped for as path material