



BALLYBOFEY & STANORLAR GOLF CLUB

Advisory Report on the golf course

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Consultant: Ian McClements

CONFIDENTIAL

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Visit Objective: To review the agronomic condition of the golf course

Present: Mr Tony Carr – Vice Captain
 Mr Richard Thompson – Acting Head Greenkeeper
 Dr Ian McClements - Turfgrass Agronomist, STRI Ltd

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Introduction

A summer course inspection was completed with the objective of reviewing the current condition of the surfaces and to review the current management practices. All matters arising on the day are confirmed in the following report.

Executive Summary

- The recent disease outbreak can be attributed to anthracnose basal rot which has affected the annual meadow grass component of the surfaces where this particular sward component has been subjected to environmental stresses. The focus for maintenance is on promoting surface and sward recovery.
- The green surfaces were considered to be relatively firm underfoot and samples were taken to accurately determine the organic matter content of the upper 60mm of the selected profiles.
- The requirement to adopt more rigorous top dressing programme was highlighted. This is a process that would help to improve better organic matter dilution, a healthier sward cover and more uniform playing characteristics.
- The green approaches would benefit from a programme of hollow coring and top dressing to improve firmness and surface water infiltration rates.
- Tee surfaces have responded well to the recent application of nutrient but would benefit from a programme of scarification and top dressing to remove surface organic material and to improve firmness.
- The quality of the fairways is much improved on my previous visits to Ballybofey yet the potential remains to elevate standards still further. In this respect it is important that the programme of sanding continues to improve surface drainage rates.

Key Observations

Greens

- The putting surfaces generally support a high proportion of bent grasses with a few exceptions e.g. 14th. The desire is to encourage this particular sward component and to increase the bent grass populations where it is less prevalent on sections of green or greens overall. The bent grasses are much more resilient to traffic and require a less aggressive management programme to support good playing characteristics.
- The sward texture was well refined and ball roll characteristics were generally good with the surfaces supporting a uniform grass cover. The main disappointment in the surfaces was sections of greens in which the sward cover has weakened either due to drought stress in the dry summer conditions, such as the front of the 17th or where a recent outbreak of anthracnose has resulted in a decline in the annual meadow grass content, for example through the centres of the 1st or 4th greens.
- Short term maintenance should focus on promoting surface recovery with the objective of closing out the weakened areas with more desirable species i.e. bentgrasses rather than annual meadow grass which will tend to regenerate from the seed bank and exploit the weakening that has occurred.



Figure 1 Anthracnose basal rot , causing sward thinning Figure 2 More general thinning at the front of the 17th green

- The build-up of organic debris at the surface is tending to retain moisture in showery conditions and restricting gaseous exchange, a process that is tending to stifle natural growth and resilience to routine wear and tear. This is also contributing to a slight thinning of the sward canopy. Regular applications of sand and aeration would help to counteract this and promote the development of a stronger more resilient sward cover.
- Core samples were collected from the 4th and 14th greens to determine the organic matter levels within the upper green profiles, helping to benchmark the profiles against ideal levels of organic material and to inform future maintenance strategies.
- The quantities of organic matter present within the profile relate to the firmness of the greens and moisture content. Higher organic matter levels tend to contribute to higher moisture levels, softer surfaces and greater instances of disease outbreaks. The moisture content of the 10th green was assessed and found to be above our target value of 15 – 25% on well drained surfaces. The higher than ideal organic matter levels would contribute to increased moisture retention..
- The profile on the 14th green was anaerobic through the centre indicating a lack of oxygen and a need to improve drainage, water penetration and gaseous exchange. This profile would benefit from deeper aeration to open up the profile to depth but ultimately the inclusion of some supplementary drainage as the current conditions would suggest that moisture penetration is much more restricted through this profile.



Figure 3 Anaerobic conditions in the profile of the 14th green.

Key recommendations

Aeration

- It is important that the aeration programme is placed on a sound footing to encourage better gaseous exchange and water penetration to improve the health of the sward cover.
- The organic matter content in the green profile suggests that aggressive hollow coring practices are not required and that the greens would benefit from a less intensive approach using an 8mm coring tine as proposed towards the end of the summer period. These holes are relatively small and will be quick to heal. This also creates a good opportunity to oversow the surfaces, particularly where the sward cover is weakest. Regular solid tining over the winter and indeed summer months would be beneficial using a small 6mm diameter tine on the recently purchased Toro Procore. These small tines are relatively close spacing and again help to dent the surface and keep the green profiles open and receptive to moisture penetration and gaseous exchange.
- The wetter greens should be spiked with the verti-drain using a 13mm diameter solid tine in conjunction with the proposed September coring. Allow the surfaces to recover and then repeat the deep spiking work with the worn tines in the autumn period before the onset of wetter winter conditions.
- The timing of deep aeration work should be determined by the response of the greens to rainfall events and if the time taken for water to clear starts to increase then take the opportunity to run the verti-drain over the surfaces to help alleviate consolidation.

Top Dressing

- A regular dusting of sand top dressing should be an integral part of the maintenance programme as sanding impacts upon 100% of the surface and is the most appropriate way to dilute organic material that arises. A light dusting every 3-4 weeks over the growing season helps to achieve this objective. The turf canopy can be opened up with a light verticutting prior to sanding to aid absorption. To expedite this process and to achieve the desired uniformity of application the Club should invest in a spinning disc top dresser.

Verticutting

- At the start of the autumn renovation package, verticut the greens to remove a small proportion of the debris prevalent the sward base.

Overseeding

- Thinner sections will benefit from an overseeding programme to help encourage surface recovery and infilling. Use a 100% browntop bent seed mixture comprising one or two of the top performing bentgrass cultivars are included in Table XX of the Turfgrass seed booklet. The section at the front of the 17th green should be oversown and incorporated into the collar to aid recovery. Further overseeding is likely to be necessary and repeated until the sward closure occurs.

Mowing

- The height of cut was considered to be low for the recent competition and contributing to the additional stress to green perimeters and high features where drought stress and Anthracnose activity had resulted in sward cover losses. It would be preferable to lift the height of cut to around 3.5mm or even 4mm and to adopt a regular top dressing strategy for the purposes of producing a healthier and more resilient sward cover that is better able to stand up to the rigours of play. The preparation of firm, dry surfaces at these higher heights of cut will help to retain satisfactory levels of pace and will satisfy regular members.
- All mechanical operations such as verticutting or grooming should only be completed in straight lines, omitting the final clean up cut to reduce stress on the perimeter of greens. Similarly it would be beneficial to periodically omit the clean-up pass when mowing to again reduce stress.

Wetting Agents

- Regular applications of wetting agent help to maintain the receptiveness of the surfaces and profiles to moisture whether it's applied artificially or occurs naturally. Wetting agent applications should commence early in the spring before the profiles start to dry, usually early March and continue through to the end of September. Applications of water through the irrigation system should also be carefully scrutinised to avoid overwatering flatter areas or hollows in an attempt to get water onto some of the higher features. Use the irrigation system to water flatter areas and top off any surrounding higher contours by hand.

Winter Hole Locations

- Ensure that the hole locations utilised during winter weather and in particular under wet conditions are moved out onto green peripheries and higher/drier areas. This will help to reduce the amount of traffic and compaction that can occur around hole locations in lower lying sections.

Turfgrass Nutrition

- The vigour of the sward cover on sections of greens that contained a good grass cover was considered to be spot on and the ideal to aim for throughout the season.
- The key aspects of the nutritional programme are the use of granular and liquid products. Granular products are there to provide opportunities to apply greater quantities of nutrient uniformly and evenly to the surfaces and should primarily be confined to the spring period when there is a desire to initiate growth and to verticut and top dress the surfaces in advance the development of playing quality for the main playing season. Thereafter, liquids are a very effective means of keeping the surfaces healthy without being over stimulated.
- Continue to apply liquid dressing in to the autumn and indeed an occasional application over the winter period can help support recovery from winter wear damage. A light granular feed is warranted to help recovery from the proposed hollow coring programme. Use a product of 5-6% nitrogen applied at a rate of 25-30g m².
- The pH levels of the 4th and 14th greens are suitable for nurturing the desirable grasses. The phosphate values are considered to be low and indicate a requirement to include phosphate as part of the nutritional programme. This will be particularly advantageous in the spring to help stimulate early growth and recovery from winter play. The potash levels are considered to be satisfactory.

Organic Matter Content		
Loss on Ignition (%)		
	Green 4	Green 14
0-20 mm	8.9	8.4
20-40 mm	3.1	4.1
40-60 mm	4.0	2.8
60-80 mm	3.5	2.7

Organic Matter

- The organic matter of the upper 20 mm of the 4th and 14th greens was 8.9 and 8.4%. This is considered high when our target values should be around 3-5%. Regular applications of top dressing during the growing season would help to dilute organic debris as it arises and help to ensure that these target values can be reached.

Green Surrounds and Approaches

- The immediate approaches would benefit from an autumn programme of work designed to improve surface water infiltration rates. Hollow core the approaches with a 13mm diameter

coring tine to help alleviate surface consolidation and to provide a mechanism by which sand can be incorporated into the upper profiles.

- Hollow core each approach to a depth of 5-6m in front of the green and collect cores in dry conditions before following up with a sand dressing to work the sand into the holes to help improve surface drainage rates and firmness.
- The gully pot on the approach to the 1st is important at intercepting surface flows from the fairway above and to protect the green from excess moisture.



Figure 4 Drainage and gully across the 1st to intercept surface water flows

- At the 12th green there is merit in installing a catch water cut off drain on the higher ground with the drainage trench topped off with fine gravel or coarse grit to help maintain its functionality and to help to intercept surface water run off and sub-surface seepage. This will help to improve the quality of the putting surface in the upper section of this green.

Tees

- The teeing surfaces generally supported a decent grass cover and have responded well to the recent application of fertiliser. Promoting growth in this way does necessitate an increased cutting frequency to maintain good standards of presentation and it is also worth noting that excessive succulence and growth also tends to heighten the surfaces susceptibility to wear damage, particularly to foot traffic. It would be preferable to use granular products in the spring to initiate growth and thereafter to use liquid feeds to keep the surfaces ticking over without stimulating excessive growth.
- Leather jacket grub activity was evident on the front of the 9th tee and responsible for the slight yellowing of the sward cover in this section. There is little merit in spraying grubs at this stage as

they are about to pupate and hatch but treatment in late October/early November would be warranted following egg hatch when the grubs are likely to be small and actively feeding near the turf surface.

Fairways

- A programme of top dressing has helped to accumulate up to 50mm depth of sand over the native soil and significantly improved the playability of the fairways during wetter winter conditions. It is important that the programme of top dressing is sustained as there is now evidence of fresh organic build up at the sward base as top dressing applications have been suspended in recent years. The concept of sanding is to dilute organic debris as it arises to help attain a uniform, sandy profile that is much freer draining than the underlying soil which may be unable to accept additional moisture during wetter conditions.



Figure 5 Accumulation of fresh organic matter at the sward base capping the sand applied in recent years.

- The quality of the fairways would be substantially improved if it were possible to cut on two occasions each week rather than the single mowing operation that is currently instigated due to the limited hours available with the current staffing compliment. It would also be advisable to reduce the forward travelling speed to eliminate the slight washboarding that is evident.
- Fairways do contain field wood rush which is adversely impacting on the surface presentation of the fairways and compromises sward uniformity.

1st Fairway

- The drainage across the 1st fairway has been capped off with a turf slightly depressed and prone to drought stress due to the shallow depth of top soil. Shallow hollow tine core along the top of the drains to break up the cores and return these into the sward base with some additional sandy soil to improve levels and the efficiency of the drains intercepting the surface water flows.

7th Fairway

- The start of the 7th fairway is relatively flat and wet due to the underlying impermeable soils. A levels survey would help to inform a proper drainage design for this section. If falls can be achieved to a desired gradient then a main drain along the left hand side of the fairway will serve to intercept and collect discharge from a series of laterals at 5m centres. The lateral drainage would help to lower the water table and a supplementary series of secondary slit drains should be installed at between 1 – 1.2m centres to capture and remove surface water more effectively.
- To improve the playability of the fairways further, ensure that the opportunity is taken to verti-drain the ground when conditions are relatively dry and before the onset of wetter winter weather. This will help to fracture the underlying soils and maintain the connection between the surface and the underlying profile..
- Apply a liquid feed of sulphate of ammonia and iron in the autumn period to help promote recovery to slightly weaker fairways from the summer drought and again in the spring to encourage a little growth as the surfaces emerge from the winter. This will help to discourage moss and favour the finer grass content.

Practice Facility

- The practice facility on the 7th hole should be graded in the fill material to provide contours that will shed water away from the main areas of play. The opportunity can be taken to form a practice green sub base with surround contouring and bunkers at this stage before topsoil is respread. Aim to spread at least 100mm depth of soil but preferably 150mm over the facility to help support a satisfactory grass cover. The sward should be of a premium quality minimal stone content but the option taken to rake and pick stones during the final seed bed preparation phase to leave a fine tilth into which fine grass seed mixture can be sown.

Yours sincerely



IAN McCLEMENTS, Ph.D, MBPR

Area Manager for Ireland and Scotland

STRI is completely independent and has no alliances to commercial products, services or contractors. This ensures that our design, project management and advisory services provide the best solutions for each individual client.

The STRI Programme provides golf courses with measurements and data that help to monitor and assess golf course performance. The R&A has recently developed CourseTracker (www.coursetracker.org), a free, online business management tool for golf courses, to record, review and analyse golf club performance across many areas of your business, including the golf course. STRI believes The R&A CourseTracker combined with the STRI Programme provides the tools you need to objectively monitor and assess your golf course performance.