



SEASCALE GOLF CLUB

Agronomy Report on the golf course

Report date: 19th May 2014

Consultant: Kath Bentley



CONFIDENTIAL

Date of Visit: 12th May 2014

Visit Objective: The review the condition of the course and make recommendations for on-going maintenance

Present: Mr Robert Temple – Chairman of Green
Mr Alan Jardine – Seascale Golf Club
Mr John Whitham – Head Greenkeeper
Mrs Kath Bentley – Turfgrass Agronomist, STRI Ltd

Weather: Overcast, turning sunny and mild with a light breeze.

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Executive Summary

- This was my first visit to the Club following my return to work from maternity leave. The previous inspection was completed by my colleague Mr Jonathan Tucker in early June 2013. At this time the putting surfaces remained in a weak condition as a consequence of the challenging weather conditions experienced over the course of the previous 12 months. In particular the spring and early summer period of 2013 was very cold resulting in a lack of recovery growth and delaying the preparation of summer playing qualities. These conditions affected many courses across the UK but courses such as Seascale, where the season is generally later, were most severely affected. The main recommendations at this time focused on re-establishing grass cover and alleviating the soil pan within the greens that was restricting the through flow of water.
- As recommended all putting surfaces were overseeded using the Greentek Dyna-tine cassettes and a good quality bent/fescue seed mix. This operation was completed on two occasions in mid-June and early July with very favourable results. Deep decompaction work to penetrate through the soil pan was then completed in mid-September using a large verti-drain machine fitted with 25mm (1in) tines and penetrating no less than 350mm (16in into the upper profile). The results of this work proved to be very successful given the very wet conditions experienced through the winter. During this time play remained on the main putting surfaces with no surface ponding experienced throughout. The verti-draining holes did remain open for an extended period however therefore affecting playing qualities. These were still visible as small patches of stimulated growth at the time of the recent visit.
- The growing conditions this spring have been more favourable than in recent years particularly compared with early 2013. Whilst the weather conditions were very wet from December through to the end of February when significant sections of the UK experienced record rainfall and severe flooding, temperatures have remained mild with growth ticking over throughout. As a consequence the surfaces at Seascale have retained good cover and are much more advanced than they have been in previous years at this time. In the main, all surfaces displayed good density and vigour with the exception of localised patches of weaker growth at the 3rd where canopy closure had not yet been achieved. However the application of fertiliser planned for the next 7 days will no doubt bring about significant improvements in these areas as well as establishing more consistent stronger growth to enable you to commence surface refinement operations.
- The extreme weather conditions experienced through 2012/2013 and the drainage problems associated with the deep soil pan, has also resulted in a loss of fescue grasses within the swards of the greens. Whilst in the main the sward composition remains favourable with a good quantity of bentgrasses present together with annual meadow grass and fescue, the aim should be to increase the fescue element of the sward with the aim of improving their sustainability and playing qualities and providing a more authentic links putting surfaces.
- It would appear that the deep decompaction work completed using the verti-drain machine in September 2013 has broken up the vast majority of the soil pan. However this situation needs to be monitored and you must ensure that aeration completed on the greens is done so at variable depths wherever possible. Deep decompaction work should be completed again towards the end of the year ideally no later than mid-September to ensure good recovery of the sward and maximum fracturing and fissuring of the profile. There are a number of options

available to complete this work although the costs are wide ranging. The chosen method will no doubt depend on your priorities at the time as well as available finances.

Key Observations

Greens

At the time of the visit all putting surfaces were well presented having a good cover and density of grass with favourable vigour in the main. There was a small variation in sward health between the drier surfaces such as the 9th green, compared with wetter greens such as 10, 4 and 3. The drier surfaces had a much more uniform, well blended sward of fescue, bent and annual meadow grass with more differential growth noted at the wetter weaker greens, in some instances associated with the disease yellow tuft (see photograph below). The disease yellow tuft appears as small yellow patches composed of a dense cluster of yellow shoots and gives an overall speckled appearance, usually through wetter sections of greens where bentgrasses are present.

The next application of fertiliser is due to be made in the next 7 days which will no doubt bring about significant improvement within the weak sections, principally in relation to improving canopy closure to provide a more uniform sward.

Indicative moisture readings taken using the Theta Probe moisture meter showed levels to be between 30-35% in the main. This is slightly above our target range of 15-30% but unsurprising given the heavy rain that was experienced over the weekend. Despite the slightly elevated moisture readings, surfaces remained firm.

Whilst the sward composition remains favourable being a blend of bent, fescue and annual meadow grass the proportion of fescue within the sward has reduced since the time of my previous visit to the course in June 2012. Ideally the maintenance programme should continue to focus on maximising the proportion of fine fescue and bentgrasses within the sward to improve their playing qualities and sustainability and to provide more authentic "links" putting surfaces. This should include completing overseeding with an appropriate dedicated seeder on at least one occasion each year, particularly if any significant surface disturbance is completed.

Stimulated growth was visible at a number of surfaces but most notably the 17th green with the effect covering the majority of the putting green. This had been brought about by the verti-drain operation completed in September 2013 providing more favourable growing conditions for the grass and therefore resulting in stimulated growth within the area of the tine hole. This effect should hopefully be removed by the application of fertiliser in the next 7 days and the improvement of growth within all sections of the greens.

As well as the stimulated growth many of the surfaces were affected by differential growth of the bentgrasses as well as seeding on the annual meadow grass plants. This was causing the ball to bobble and chatter to a small degree although the ball roll was very true. Verticutting to refine sward texture and reduce the effects of seed heading should be completed once more established growth has been brought about by the imminent application of fertiliser.



Photo 1 Differential growth and seeding annual meadow grass affecting surface trueness and smoothness

Beneath the surface conditions remain very favourable. All profiles inspected were uniform with no layering or undiluted thatch evident. Rooting too was very strong and a significantly improved on that seen by my colleague Jonathan in June 2013. In all instances root growth was found to be in excess of 100mm with growth extending even deeper into tine holes – see photograph below.



Photo 2 Uniform soil profile and fantastic rooting to depth down a verti-drain hole

Tees

Winter project work has included the refurbishment of two tees at the course as well as the creation of a new competition tee at the 10th hole and the extension of the competition tee at the 5th hole. Work commenced in October 2013 but unfortunately was delayed due to the severely wet

conditions through December to the end of February. Tees were eventually finished off in March with surface levels being perfected before laying imported pure fescue turf.

All work had been completed to a high standard and the new turf had knitted in well at the time of the visit. It is hoped that the creation of the competition tee at the 10th hole will improve the quality of the playing surface given the significant increase in size of this area leaving the existing competition tee to be used on special occasions. Similarly the extension to the competition tee at the 5th will allow wear to be spread more effectively. It is hoped that further work of this type can be extended to other tees at the course with the aim of raising standards.

The introduction of winter mats onto the teeing surfaces will serve to protect the sward when there is no growth.

The 13th tee which was refurbished a number of years ago with subsequent problems in the quality of the sward being encountered was inspected and I was very pleased to see the significant improvement in sward quality that has been achieved here. The creation of a fall along the surface to facilitate effective surface run off and the installation of a herringbone pipe drain system has improved the drainage and growing conditions within this teeing platform to allow the fescue sward to thrive.

17th Teeing Ground

The plans to re-direct paths at the 17th teeing ground would appear to be a sound approach and will serve to raise the standard of the playing qualities overall but particularly to the left hand side. The photograph below shows the current quality of the sward within this area which is thin and patchy brought about by the foot traffic concentrated through this area. The creation of a path within the line of the existing public footpath to the right hand side of the green would reduce foot traffic over this area and allow a more uniform sward to be developed. Similarly the creation of a winter teeing platform to the left hand side of the 16th green to be approached by a new path would allow the main teeing platform to be rested through the winter months and for traffic to be re-directed therefore reducing the wear and tear on narrow traffic routes.

In the short term aeration, overseeding and fertiliser should be concentrated within this area to bring about an improvement in growing conditions.



Photo 3 Left hand side of the 17th tee showing weak, patchy growth

Fairways

The fairways were presented very well in the main having a favourable density of grass providing good definition to the semi rough. The 14th and 16th fairways were significantly weaker and would benefit from an application of a low nitrogen feed. An economical option would be to apply a soluble urea product of analysis 46:0:0 at a rate of 30L/ha which should provide approximately 14 kg/N/ha. This should help to improve sward density without creating too much top growth therefore improving wear tolerance and reducing the vulnerability of the sward to ingress by moss.

Sward cover continues to be lost on crowned areas of fairways therefore resulting in contamination by weeds and annual meadow grass. Ideally these areas should be treated with an economical wetting agent to aid water penetration during dry periods of the year. This will be discussed in the recommendation section below.

Soil Analysis

Soil chemical analysis recently completed by Sheriff Amenities Ltd confirmed the pH level to be between 4.6 -4.8. This is relatively low, although at the present time it is not at the detriment of sward health. Ideally the pH should fall between 5.0 – 5.5, which is ideal for the development of bentgrasses within the sward. Chewings and red fescue prefer a more alkaline pH above 5.5, as does the annual meadow grass element of the sward.

The same analysis also highlighted the low level of calcium within the sward which should ideally be addressed as part of the fertiliser programme.

Key recommendations

Greens

- Make an application of the spring fertiliser of analysis 8:0:0 as soon as conditions allow to promote canopy closure and establish growth to allow sward refinement operations to commence.
- Verticut the surfaces keeping the treatments light and gentle whilst annual meadow grass seed heads are present within the sward. Ideally set the units at ground level to prevent marking the surface and therefore providing a seed bed within which the annual meadow grass seed heads can establish.
- Continue to apply top dressing on a little and often basis and in conjunction with some form of surface aeration to ensure integration of the sand into the upper profile and sward base. Verticutting and solid tining are perfect for this. Aim to apply dressings every 2-3 weeks through the season to establish and retain good surface uniformity. Aim to apply no less than 60-80 tonnes of material.
- Focus localised overseeding work to any stubborn weak areas that remain following the application of the spring feed. Use the hand held surface slitter as a pre-cursor to rubbing a bent fescue seed mix into the surface and top dressing. Ensure that adequate moisture is available within the profile to facilitate germination and establishment of the seed and repeat as necessary until good canopy closure has been achieved.
- Aerate the greens on a regular basis using a combination of shallow star slitting every 2 weeks combined with monthly pencil tining to various depths up to 150mm.
- Maintain sward health with sensible fertiliser and irrigation inputs. Aim to apply between 50-70kg/N to the greens over the course of the season with the majority being applied between March and September when growth is at its strongest. The two applications of lawn sand and a spring feed have provided approximately 48kg/N to date. A subsequent application of fertiliser should be time-tabled for late summer when another application of the Go-green granules or a turf hardener of analysis 3:0:3 plus Fe or similar should be employed to take the surfaces into autumn and winter in a strong condition.
- Continue to supplement the nitrogen inputs with a good quality seaweed and iron as well as trace element packages to minimise stress and maintain sward health without creating too much top growth. Consider making an application of the Calform product available from Rigby Taylor, or similar to increase calcium levels within the soil.
- Verticut the greens as required through the playing season to maintain a uniform surface in conjunction with more regular grooming, as growth and conditions allow. The availability of an out-front brush on the triplex mower would be a good addition to the machinery as it would allow surface refinement operations to commence earlier in the season and be carried out on a more regular basis without being too aggressive to the sward.
- Aim to overseed the putting surfaces on at least one occasion during 2014 using a bent fescue seed mix. Use the turf grass seed booklet provided by STRI to ensure that the chosen seed mix contains good quality cultivars within the upper sections of tables G1, G2 and G3. Ideally overseeding should be completed by a dedicated overseeding machine. The favourable feedback given on the Greentek Dynatyne cassettes would make them the ideal choice however

it is understood that these are unable to be hired in. In the absence of these units use a dedicated disc seeder such as that available from Whitehaven Golf Club. This will also provide good results although the seed will come through in lines and may affect the uniformity of the surfaces for a short period of time.

- Make an application of potassium and iron to the surfaces in late summer/early autumn to keep the sward hardened against disease attack. Alternatively, the liquid Turf Hardener available from Headland Amenity Products (and Sherriff Amenity) contains calcium and magnesium as well as a small amount of nitrogen.

Deep Decompaction

- Further deep decompaction of the greens should be completed in autumn, no later than mid-September. There are a number of options available for completing this work but they do vary significantly in price. The most obvious and straightforward option would be to hire the large verti-drain machine, available from Whitehaven Golf Club using the 18mm ($\frac{3}{4}$ in tines) to penetrate at least 350mm (14in) into the upper profile. Set with a small amount of heave to ensure good fracturing and fissuring of the soil at maximum penetration depth. Whilst very effective this treatment is very disruptive to the surface and leaves large tine holes that can take a significant period of time to recover. Making an application of fertiliser in preparation for this work will facilitate recovery.
- The Air2G2 deep decompaction pedestrian aerator is a new machine for 2014. It is a self-propelled air injector, that uses air to shatter deep compaction created through normal to heavy foot traffic. The Air 2G2 works on the principle of injecting compressed air vertically and horizontally over an area of 1.5m (5ft) to 300mm (12") deep (depending upon probe fitting). This causes a fracturing effect of the compacted rootzone, with no surface disruption. Play on greens and fairways, tees and around bunkers can be resumed immediately following the treatment. The cost of hiring this unit is about £700 per day and is available from Fine Turf Services.
- A further alternative would be the Airforce Terralift machine. This involves a single 37 mm diameter probe being inserted 1 m below ground and compressed air injected to fracture and fissure the soil to depth. Disruption is minimal and is quick and efficient.

Tees

- Given the immaturity of the newly laid turf at the 5th, 10th, 12th and 15th teeing platforms additional work will be required through the season to maintain sward health and uniformity. In particular moisture levels should be monitored closely to ensure that the turf is not allowed to dry out and provide adequate nutrition to enable the tees to cope with the effects of wear and tear brought about by play.
- In the first instance, perfect surface levels with ongoing top dressing inputs before reducing height of cut in line with growth and conditions. Ideally maintain these surfaces using a pedestrian hand mower which will also give you the beneficial effects of rolling.
- Aim to hollow core the surfaces in late summer/early autumn to remove organic matter brought in with the new turf, prior to top dressing and if necessary overseeding to re-establish grass cover. Additional renovation works may be required due to the poorer wear tolerance of the immature swards to these surfaces. In this regard ensure that tee box markers are moved

regularly to spread wear and tear effectively and carry out divoting on at least 2-3 occasions each week.

Fairways

- Consider making an application of low nitrogen feed to the 14th and 16th fairways to improve sward density. An economical product such as a soluble urea of analysis 46:0:0 applied at a rate of 30L/ha would be appropriate and would supply approximately 14 kg/N/ha. Consider this as a one-off treatment to promote recovery and grass cover with the aim of providing a more uniform sward and leaving the grass plants stronger to withstand invasion by moss later in the year.
- Furthermore, consider hollow coring weak sections of fairway leaving the cores on the surface and mattering back in to provide top dressing. Also ensure that all fairways are verti-drained in late summer when ground conditions are at their best to maximise fracturing and fissuring of the soil profile to improve growing conditions and develop a deep rooted sward.
- Consideration should also be given to introducing a wetting agent programme to the fairways or at least to the high sections/crowns of fairways that are prone to burning off and losing grass cover. There are a number of good quality wetting agent products designed for treating larger areas such as Excel by Sheriff Amenity, H2Pro Maximise by Everiss, Excel Fairway by Headland, Despatch by Aquatrols, Breaker Dynamic Fairway by Rigby Taylor and Osprey Sport by Award. The pricing of these products makes use on larger areas far more cost effective than looking to use one of the products designed for greens use.

Signed:



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STRI Ltd

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