

# ARCOT HALL GOLF CLUB

## AGRONOMY REPORT ON THE GOLF COURSE



Date 25 August 2010

JSD

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## **ARCOT HALL GOLF CLUB**

### **AGRONOMIC ADVISORY VISIT TO INSPECT THE GOLF COURSE**

**Date of Visit**  
18<sup>th</sup> August 2010

#### **Present**

Keith Tremble - Chairman  
Barry Dunne - Captain  
Brian Rumney - Secretary/Manager  
Ian Kyle - Course Manager  
Paul Collycott - Greens Chairman  
Jay Dobson – STRI Ltd

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#### **INTRODUCTION**

An extremely difficult and harsh winter was followed by a cold and dry then hot and dry spring, this combination of weather patterns being extremely difficult for many golf courses in the north of England and Scotland. Damage accrued due to long periods of lying snow cover and subsequent disease issues, as well as direct winter kill and freeze injury, were common to see and recovery of this was hindered substantially by the conditions in spring. Despite all these problems some substantial work was carried out by Ian the green keeping team and this is reviewed in this Report along with weeds, disease, green speed, growth regulators, maintenance, nutrition, drainage, tees, trees and rough.

#### **GREENS**

##### **GENERAL**

As noted, these have come out of the winter well and early season growth appeared to be relatively stable despite some extremely dry conditions and overnight frosts. It was reported that they knitted together satisfactorily in early to mid May which would have been earlier than many in your part of the country. The surfaces have remained stable since then, there being full grass cover on all with few anomalies reported.

## SWARDS

As noted, density was exceptionally good and uniformity from greensite to greensite also reflected good management. The current 4.5mm height of cut is as we agreed last year and



has helped retain the surface cover on the greens which has helped with the smoothness and trueness of the ball roll noted at inspection. (☺) Although annual meadow grass (*Poa annua* sp) is still seeding, this is primarily down to the late spring and stress carried over from the winter. The verticutting programme however seems to be dealing with this well and it does not appear to affect uniformity or playability to any degree.

Canopy closure was excellent and apparently earlier than we would have hoped on the greens this year and

subsequent sward refinement using the verti cut units at 1mm to 2mm below roller level has been excellent in refining the sward, keeping the plant/soil interface clean and removing a potential vector for disease infection. At inspection, we noted that this was true of all the greens including some of the wetter surfaces (e.g. 15) where generally there is some level of infection in this area. Continuance of the verticutting programme on a 14 day cycle should therefore be supported.

Bent grass (*Agrostis* sp) showed some slight variability, the older Highland cultivars being fairly coarse and clumpy as is common with this species. The newer brown top bent grass cultivars were however much better in this respect showing good colour, good density and some positive lateral growth and increase of populations. There is still some degree of variability built in to the greens due to the lack of good mixing or blending of the bent grass and meadow grass but, where these two contributing species are found well mixed together, generally the surfaces are also excellent.

No evidence of issues with traffic could be noted and in fact clean up cuts were somewhat improved over previous inspections. The only exception to this was the front of the 10<sup>th</sup> green which we would suggest can be brought in to help protect this area, returning it to approach height of cut. (☹) Some aeration and top dressing here would also help with recovery, as would some over sowing.



## PROFILES

The general condition of the greens' profiles was classifiably good, even known problem areas such as the 9<sup>th</sup> green are substantially improved over previously and given the preceding wet weather, this green has coped exceptionally well. Although there was some notable softening in the top of the profile, water being likely to be held here, this was less noticeable than previously and there was no evidence of saturation as we have noted in the past. Some anaerobic condition could be seen here and there (9<sup>th</sup>, 15<sup>th</sup>) however this was relatively uncommon on greens seen.



As a comment, we would suggest that some extra aeration work be carried out on greens where this problem is noticeable and more common, the use of needle or pencil tines and even combined with sarel rolling can be positive in helping to keep these open and aerated, reducing this potential for anaerobic condition.

Rooting depth and density was generally good extending into the mid and lower profiles which appeared relatively well fissured and in many places now diluted well with top dressing. Thatch and organic matter, whilst still noticeable, was notably

diluted by top dressing, this being more sandy and less water retentive on areas reviewed. This also reflects in the firmness of the surfaces despite preceding rainfall, something which in the past would have left us with soft and foot printed greens.

## DISCUSSION

The greens showed excellent density and uniformity throughout with few anomalies to report. Generally they were extremely smooth and true and ball roll appeared unaffected by any surface irregularity. Some issues were discussed with regard to green speed (discussed below) however these were relatively minor and subjective rather than objective in their nature.

## WEEDS

The use of Greenor (clopyralid + fluroxypyr + MCPA) for daisy control appeared to work slightly variably as has been common this year. Generally the cold and dry spring has been the main reason for this as growth rates have been somewhat slower than would be optimal for a good result from the application of a selective herbicide. However we would continue with this program to help clean out these areas where daisies are problematic and the use of an alternative selective herbicide such as Spearhead could be supported.

On a similar note, we note that Himalayan Balsam (*Impatiens glandulifera*) is one of the



common invasive weeds which we find on golf courses now. (☺) The stand that we noted and that is seen in this photograph should be treated using a selective herbicide (either of the two mentioned above would be satisfactory) however when in flower they can be slightly more difficult to control. We would suggest cutting the area back and removing the arisings in the winter and retreating with a selective herbicide in spring as growth re-establishes as the best way forward. Please re-assess this next year.

## DISEASE

We discussed the potential for disease infection last year and noted that there had been a general reduction in the amount of infection on the greens. Having said this, we still had some issues possibly with infection due to the grass species composition and potential stress at certain times of the year. In addition, continuance of the verticutting programme has been positively removing one of the vectors for spread, however debris and build up of debris in the plant/soil interface can be problematic at certain times in the year. To this end, we recommended the use of a preventative program and this appears to have worked well, a combination of the Fusion (x 2) and Chipco (x 1) being positive in keeping infection at bay. No evidence of the yellow tuft that we noted last year was seen at this inspection and apart from some individual meadow grass plants being affected by anthracnose, nothing else was seen of note.

On a slightly different vein, we discussed the snow cover issue during the winter and its effect on the surfaces. As we noted, pink snow mould (*Microdochium Nivale*) is the same causal fungus that produces fusarium patch. It is generally incubated under snow cover and can be quite damaging. However there is no way of treating this except for reactively as the amount of infection and damage is unknown until the snow cover melts. We would reiterate our point about not removing snow cover on surfaces, as this acts as an insulating blanket, the removal of which exposes the grass plants to loss of radiated heat and to subsequent low temperatures which can result in direct winter kill. It is therefore sensible to leave snow cover in place, allow it to melt as temperatures rise and then treat any issues accordingly subsequent to this.

## GREEN SPEED

We discussed this extensively at inspection and the following points are important and cogent in our discussions:

At no time have we noted an issue with green speed on the greens at Arcot Hall. Review of Ian Kyle's record showing green speed over the course of the season indicates that the greens run at between 8½ feet and 9 feet (and in excess of that during competitions) which is fast for normal play and medium fast for tournament play as assessed by United States Golf Association's standard. While green speeds have risen over the last few years, this is generally down to improvements in maintenance and management practice, the purchase of equipment such as turf irons (it is positive to note that you have already done this and it will be in use for next year) and the changes in sward refinement allowed by improved verticutting units etc. One of the main improvements has been that no longer are green keepers forced into reducing heights of cut to unsustainable levels in the search for pace. Generally surfaces that are dense and uniform will have reasonable pace anyway as there is little to deflect the ball. We have noted in the past at Arcot Hall that reduction in height of cut generally opens out the sward, reducing density, increasing the amount of deflection on the golf ball and therefore reducing pace not increasing it. We feel the way forward for the club is as you have done, purchasing a turf iron which can be used in tandem with your standard green keeping techniques to help improve pace. You should note that verticutting also helps with this as it takes debris out of the sward, reducing grain and nap and also helps with uniformity of roll.

In short, there is little to concern yourselves with in respect of pace on your greens. They are already faster than many we have assessed, and will be improved further by the introduction of the turf iron for competitions etc next year.

## GROWTH REGULATORS

We discussed the benefits of growth regulation (Primo-Maxx) on particularly shaded areas such as tees but also on greens. Dealing with the greens first, in tandem with the green speed issue above, we have found that improvements in density and uniformity can be brought about by the application of this to greens within the growing season, regrowth issues during the day, which affect green speed for those who play later, being less of an issue and there also be a slight improvement in general density with positive impact on ball roll. We would suggest that you consider this for 2011.

- Ø Primo-Maxx for greens – May to September at 0.4 litres per hectare every two to four weeks.
- Ø Primo-Maxx for tees – May to September at 1.6 litres per hectare every four to five weeks.

As per discussions, it is worthwhile applying liquid nutrition, tank mixed with the Primo-Maxx to help with initial uptake and also with any potential discolouration issues.



This could be seen on a couple of tees where sward density had been improved by the application of the Primo-Maxx but there had been some discolouration due to initial application. (☹) Low level liquid N applied with the Primo-Maxx will prevent this occurrence.

## MAINTENANCE

### GENERAL

As per discussions, we are recommending a continuance of the existing programme. We note that the planned maintenance week in September could be moved into August and we would support this as the over sowing of bent grass within this operation will take at least 28 days to germinate and establish. This means that by the time you get to the end of September/ beginning of October, you should be getting some impact from your over sow as heights of cut rise and golf impact reduces.

The purchase of the ProPass spinning disc top dresser has been extremely positive and has helped Ian and the team in their quest to increase top dressing input and help produce firmer, truer and better surfaces. The following operations should continue within the growing season as part of your programme.

- Ø Verticutting on a 14 day cycle between 1mm and 2mm depth below roller level is to be supported.
- Ø Aeration using pencil or solid tines should be carried out regularly during the growing season, particularly on greens where there is known likelihood of saturation and potential anaerobic condition. The 9<sup>th</sup> and 14<sup>th</sup> greens would be good examples of this.
- Ø Verti-draining in November, December and March was positive this year as was the coring in April although this has recovered slowly due to the cold weather. We would further recommend this is carried out.

- Ø Top dressing targets should be 120 tonnes per annum.

As per discussions, the arisings from verticutting can be composted easily as they contain sand and cellulose from the grass cuttings which break down quickly. This can be used for divot mix.

## **NUTRITION**

No issues with the fertiliser program were noted nor reported. The greens were started using 8:0:6 which worked slowly but surely and helped the greens knit back together. The use of the 14:4:7 and then the summer magic liquid has been positive in keeping them stable. Please note our discussions on making sure that sufficient moisture is available within the profile to solubilise any application of granular fertilizer in the early parts of the growing season. We note that there were no issues with moisture within the profile, the wetting agent programme apparently working well, using a combination of Aquagro pellets and Osprey wetting agent.

## **DRAINAGE**

Ongoing work around the golf course to improve drainage issues has been positive, and the area associated with the 10<sup>th</sup> fairway and pond has now settled well. The areas where the work was carried out have recovered almost completely. Some further light top dressing and over sowing following aeration work here would be positive in helping with this continued recovery.

The work to the furrows on the 11<sup>th</sup> carry has also been positive this year and has helped dry up the front of the green and the area on the approach which was extremely wet previously. There are still some discussions regarding the wet area to the hollow behind the 7<sup>th</sup> tee and we feel if this remains a wet area, it would be better taken out of play and turned into wetland rather than have to continually maintain it. Please consider this next year.

## **TEES**

The discolouration noted in the section on Primo-Maxx associated with its use on tees, we feel, can be addressed just by applying some more N. We noted that the sward on the shady tees although discoloured, had better density and had coped with wear and tear better. This should be continued. The comment that the 11:5:5 fertilizer didn't work particularly well this year would appear to relate primarily to the extremely dry and cold conditions in the early parts of the growing season. This has left many clubs with "spotty" tees due to the poor breakdown of the prills associated with controlled release products. We would suggest that you use a product such as Scotts 25:5:10 with the Primo-Maxx growth regulator and make sure that all products are thoroughly watered in on tee areas if conditions remain cold and dry.

## TREE MANAGEMENT



Continued management of poor specimens within the woodland and on woodland margins around the course has been positive and the attendant photograph shows that the removal of the Leyland cypress around this tee has improved the environment for growth substantially. However the shadow in the foreground remains in place because of a further Leyland cypress to the left hand side and we feel that this should be removed this winter along with the other specimens to the rear. (☞) This will help to substantially improve the environment here and allow a

better, drier and more dense surface of play.

## EXTENSIVE GRASSLAND



The introduction of rough to the golf course has been positive and should continue. We note that further mowing and removal of the arisings from this in September on these areas should continue to help drop fertility, reduce rank and fertile growth and get back to the finer grasses. Those seen in the attendant photograph are already returning to fine bent grass and fescue and removal of the some of the bio mass here will further help this and other areas of rough on the golf course. (☞) Please continue with this over time.

## SUMMARY

The golf course has had a difficult start this year due to the harsh winter and dry spring. However having said this, it has provided good surfaces for play almost throughout. Important items from our discussions are:

- ☐ Swards continue to show excellent density and uniformity at the currently 4.5mm height of cut. They were extremely smooth and although there were some issues with meadow grass, this has been controlled primarily within the verticutting program.
- ☐ Profiles remain improved with better dilution of organic matter within the thatch and some better root growth and extension into the mid profile. There are still some anaerobic areas where the water is inclined to hold in the tops of the profile and this should point to extra aeration and top dressing.
- ☐ It may be that you require as many as two applications of herbicide to deal with the daisy issues where they are more prevalent. As to the Himalayan balsam, the use of

selective herbicide here next year following cut back and removal of arisings this year, will be of benefit in helping to control this issue.

- Ø No disease issues were noted nor reported at inspection and we would continue with a preventative program of fungicide applications. Please note our points previously and at this inspection about changing the active ingredient on systemic products from time to time.
- Ø Green speed we feel is not an issue at Arcot Hall Golf Club. Review of records kept by the head green keeper show there is a good level of uniformity of pace throughout the year, affected only by rainfall, wetting down of the surfaces and differentials in growth response due to weather conditions. Outside of this generally pace was uniform and appeared to be between 8½ feet and 9 feet. Further use of the turf iron next year for important competitions etc will increase this and help with this issue without looking to change the maintenance and management of the surfaces, something which we feel is now optimal.
- Ø Growth regulators have worked well on the tees, increasing sward density, however there has been some discolouration which can be addressed by applying liquid nitrogen with the initial application. We would suggest you extend the programme to the remainder of the tees and to the greens for 2011.
- Ø Verticutting should continue on a 14 day basis at between 1mm and 2mm depth dependent on growth, the amount of debris in the sward base and general condition of the sward.
- Ø Top dressing targets should be 120 tonnes for 2010/2011. We would further reiterate that applying this with the spinning disc spreader, following any sward or soil engaged operation, is to be supported.
- Ø Change of the tees fertilizer to a 25:5:10 in tandem with the Primo-Maxx and some liquid nitrogen at its application in 2011 is to be supported.
- Ø Continue with the management of poor or badly placed tree stock within the golf course.
- Ø Continue to experiment with roughs and manage the bio mass and fertility in some of your existing areas.

**Signed:**

**J S Dobson, NDTs(Dist), MBPR  
Turfgrass Agronomist (Scotland)  
STRI Ltd**