Making great sport happen

# WARKWORTH GOLF CLUB

## Advisory Report on the Golf Course

Report Date: 2nd September 2021
Consultant: Gwynn Davies

# Warkworth Golf Club

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| Date of Visit: | Thursday 12th August 2021 |
| Visit Objective: | To assess the condition of the course focusing on all the improvement initiatives particularly on drought damaged fairways. |
| Present: | John Glass – Greens Committee member<br>Steve Arnott – Head Greenkeeper<br>Michael Lucas – Chairman (in summary)<br>Gwynn Davies – STRI Ltd |
| Weather: | Dry, bright warm and breezy, 18°C |

## Headlines

- Greens conditioning is excellent with some of the best surfaces seen this year dominated by fine grasses. Considering the climatic challenges faced by turf managers over the last few years the Club are to be commended for a proactive approach that has created these surfaces.
- Adjustments to mowing practices and heights of cut appear to be working favourably especially in outfield areas. Presentation levels have reportedly been raised following these changes and have benefitted conditioning levels too.
- Wear and tear in high traffic areas needs addressing and an improvement strategy was discussed and agreed in principle to restore turf cover. Historic damage from the 2018 drought has continued to affect playability due to the inconsistent and ever changing weather patterns that are becoming more frequent and affecting recovery.
- Droughted soils on fairways are also restricting turf recovery because moisture is integral to growth processes. Re-establishing soil moisture levels can be achieved through diligent cultural practices appropriately timed to achieve maximum effect. The use of wetting agents will accelerate this process ahead of the return of autumn/winter rainfall.
- Targeted investment will be needed moving forward to ensure improvement continuity. Areas will include equipment, resources and infrastructure like bunkers and irrigation.
- Utilisation of volunteers should be enhanced to enable multiple tasks to be completed and support the Greenkeeping team. As a valuable resource, volunteers can ensure attention to detail and peripheral operations are maintained.

## Key Actions

- Maintain current mowing strategies on all surfaces including greens to retain health, coverage and performance. Make protective adjustments to the greens when winter conditions return.
- Increase the volume of aeration into greens throughout the year with narrow gauge tines, whilst focussing on outfield areas through the winter when soils are more receptive.
- Raise seed inputs into greens, tees and fairways to accelerate restoration of coverage with immediate effect and retain the current fescue dominated seed choice.
- Implement periodic refinements on tees, surrounds and greens via brushing to address coarse growth and surface debris. Raking of fairways and roughs will help remove the organic crust and expose the underlying soils.
- Investigate possible mechanisms for cutting and collecting rough grassland areas to reduce productivity and soil nutrient levels.

# Photo Observations and Comments

Figure 1: Green swards are healthy with bentgrass and fescues in excellent condition aided by the 4mm cutting height and recent fertiliser input.

Figure 2: Anthracnose seen in meadowgrass populations on some greens. Where possible plug out the offending areas or tine and seed localised thinning patches with finer grasses.

Figure 3: Greens profiles are in very good condition with rooting depths exceeding 150mm. Moisture distribution is uniform throughout.

Figure 4: Surrounds offer greater potential for improvement with areas prime for swale creation to improve playability. Enlarge these areas gradually to retain turf health and cover.

Figure 5: Tee profiles are excellent with native sandy soils found to depth. Moisture content is uniform to depth and is promoting turf health across all platforms.

Figure 6: Tees show fine grass dominant surfaces that need refinement to manage coarse grasses. Encourage recovery via regular divotting and autumn aeration.

Figure 7: Fairways exhibiting historic drought damage would benefit from the introduction of seed, fibre removal and dune sand to protect seedlings.

Figure 8: Fescue populations dominate outfield areas indicating low moisture environments. Making soils more receptive to rainfall will improve health and condition levels.

Figure 9: Bunkers require high resource allocation so any that show potential for removal or redevelopment (4th) need investigating further to maximise playability.

Figure 10: Grassland roughs are very productive and would benefit from cut collect and raking to lower productivity and growth whilst encouraging native wildflower populations.

Figure 11: Regular low level inputs of seed during hole changing can accelerate the botanical improvement of localised areas.

## Recommendations

### Greens

- Dominated by finer grasses the putting surfaces were in excellent condition. The recent warm dry weather has encouraged strong growth within the fescues and bentgrasses which together with the 4mm cutting height are producing uniform density.
- Ball roll characteristics were very good with not much visible chatter seen. Refinements of periodic verticutting are helping sustain smoother surfaces. Speed expectations should be managed because consistent surfaces perform better overall than those that fluctuate.
- Localised meadowgrass (Poa sp.) populations were exhibiting evidence of Anthracnose disease activity (Figure 2) likely due to the elevated stress levels the Poa has been experiencing during the dry weather.
- 2021 has been a particularly challenging year for maintaining consistent growth and with extreme fluctuations becoming more frequent, patron expectations will need realigning to accommodate the associated challenges, namely stresses that weaken the turf.
- Within the bentgrass populations lengthy leaf growth was noted. increasing the frequency of brushing ahead of mowing is advised. Addressing this will open the surface and make it more receptive to topdressing inputs.
- Topdressing should be used at low rates to address surface imperfections and maintain performance. Aim to apply 20 tonnes per year via very low rate applications (3 tons per cycle) between April to September and renovations.
- Regular applications should be timed to coincide with aeration operations. Following discussions during the visit, recommend using 8mm cross tines throughout the summer and 12mm solid tines through the winter as required.
- During renovations look to re-establish soil structure and create a receptive environment for the bent/fescue seed through deep aeration. This method is proven and should be continued as it is a necessary process.
- Where disease activity prevails, look to introduce seed into these areas to raise resilience levels of the greens. Modern seed cultivars are better suited to disease tolerance and maintaining the excellent botanical composition will help reduce the impact of future outbreaks on surface integrity.
- As part of this strategy, advise dressing around the turf plugs with a mixture of dry sand and seed during hole changing exercises. Not only does this offer an ideal environment for seedling establishment, but also helps protect the plug from drying out in the prevailing winds.
- Being a windy site flexibility is required regarding nutritional inputs via foliar applications. The current input plan appears to be working and the advice would be to continue with seaweed inputs throughout the year rather than in summer only.
- During winter months when conditions may not allow spraying, recommend using lawn sand at very low rates to maintain turf health whilst reducing the potential for moss ingress. Thin localised areas where Poa dominates are most prone to this, hence the need to introduce finer grasses.

### Green Collars, Surrounds and Approaches

- The reduction in cutting height to 8mm has reportedly raised the quality of these surfaces which were found to be healthy, well grassed with a uniform coverage of fine grasses. Historic evidence of traffic wear will need managing through sward re-establishment via overseeding as often as possible.
- Deployment of the brush would aid refinement processes and help produce uniform surfaces that consistently perform at the expected level. Trial adjusted cutting heights from 10mm to 8mm to allow a seamless transition into the greens collars. Be mindful of high traffic areas and associated impact on turf density especially through dry periods.

- Weed populations within these areas will need controlling going forward through an application of an appropriate selective herbicide. Being a windy site, advise relevant precautionary measures to ensure target species are affected.
- Around some greens like 8th exists the potential to create swales and runoff areas commonly associated with links golf. Where severe slopes and mounds exist, look to soften the contours as part of the winter project work.
- Stripping the turf for reuse would ensure continuity of surface quality over imported turf from an external source. Recommend carrying out these works before December to maximise the recovery time for the turf. Ensure seams are protected via use of a sand/seed mixture which will also promote complete coverage once back in play.
- Active swales surrounding greens (Figure 4) would benefit from being manicured and presented as part of the wider surrounds with adjustments to the mowing widths made to incorporate existing slopes. The creation of catchment areas around greens offers some protection whilst promoting the challenge of links golf.
- Where swales need cutting heights reduced (8th), recommend the use of a pedestrian rotary mower to collect clippings and reduce stress on the turf. It is vitally important that decreasing cutting heights be done gradually to avoid die back and loss of turf cover.
- Suggestions and discussions about the validity of certain bunkers on the course revealed that by removing some redundant hazards, their overall maintenance requirements and resource allocation could be reduced and diverted elsewhere onto the course.
- Figure 9 shows the bunkers behind the 4th green which offer potential to create a low runoff area behind the green and create the impression of an "infinity green" with the valley beyond? With 33 bunkers on the course the annual resource requirements are significant and costly. Recommend opening discussions internally to identify potential areas where resource reallocation could occur through redevelopment strategies (see Resources section below).

Tees

- Overall tee platforms were in very good condition with healthy turf dominated by finer grasses. Reparation work via divotting was evident and should be continued at current levels using the 'homemade soil mixture'.
- The 8mm cutting height is promoting uniform density, however, recommend using the ZigZag brush periodically to help refine these surfaces further. The aim is to address any coarse lateral growth that may be detracting from expected standards and also remove any surface fibre debris that would contribute to organic matter content accumulation.
- Historic use of coarse ryegrasses for divotting has resulted in many tees showing patches of unsightly stems that are difficult to maintain through cylinder mowing alone. Advise use of a rotary mower to remove them.
- Continue using fescue dominant seed mixes for divotting. In the absence of irrigation on the tees except the 1st, use of drought tolerant grasses can help retain quality surfaces that require very little nutritional inputs.
- Recommend the combination of aeration (slitting) and a wetting agent application in early autumn to improve receptiveness of soils during high rainfall periods. Rewetting soils to depth through the winter will aid long term turf health retention during the main playing season.
- Slitting is an excellent way of promoting deep root systems that in turn raise overall resilience levels. This is especially important considering the impact drought conditions can have on turf health and quality.

- Resident weed populations should be managed via herbicide applications as appropriate, whilst aiming to reduce their impact on turf coverage. Target them prior to the flowering stage to prevent seeding and for maximum efficacy. Divot the vacant gaps to limit the return of future weed populations.

## Fairways

- Recent years have been very challenging climatically and the drought damage suffered by turf in 2018 remains widespread especially within traffic areas and landing zones. Natural recovery has been sporadic due to extreme weather events since the initial damage occurred.
- Closer inspection of the surfaces revealed an organic matter (thatch) layer/crust in the surface (Figure 7) that is restricting moisture ingress into the soil beneath. These are confined to the gaps in the surfaces where meadowgrasses have died off during the droughts resulting in some moss ingress.
- The current strategy of bi-weekly mowing at 19mm height is supported and is creating a stronger sward, better able to tolerate the rigours of dry weather and increased volumes of playing traffic.
- Accumulations of thatch not only restrict moisture infiltration but retain it in the surface thus creating conditions that favour moss establishment. Raking the surfaces would break up the offending layer and create avenues for moisture to travel through away from the surface into the underlying soils.
- Areas around greens where such conditions prevail could be managed by localised hollow coring, deep tining, overseed with fescue and apply topdressing. Protecting these areas is important to enable seedling development and use of ropes is highly recommended.
- Cores inspected during the visit confirmed how dry soils were with surfaces retaining any available moisture within the organic matter layer. Planned autumn aeration using external contractors is supported to open up the surface and create channels for moisture ingress. Support this with monthly slitting when conditions allow through the winter, but do not continue beyond January when the risk of gaping in dry spring conditions increases.
- Advise making multiple applications of an appropriate outfield wetting agent prior to and following the aeration operation. For maximum effect advise making applications during rainfall episodes to allow introduction of product into the soil.
- Recharging the soil moisture deficit incurred over recent years may require multiple cycles over the coming years. The long term aim here should be to utilise winter rainfall to the best effect and raise turf resilience levels during dry weather.
- Localised manual irrigation operations appear to be consuming volunteers time which would be better served helping Steve on other areas of the course. Recent investment into a travelling sprinkler should be used more frequently, especially in high traffic areas and where renovation works have been completed.
- Maintaining moisture inputs during seedling growth will improve the chances of full establishment. Continue using the pellet applicator during manual watering to introduce wetting agents into very dry areas and readdress soil chemistry.
- The ambition every year should be to strengthen the surfaces ahead of and during the winter months. Creating denser swards through targeted inputs will raise their playability however fescues are slow growing and therefore strongly advise not forcing them with excessive fertiliser inputs, which should target seedling establishment too.

## Resources

- To illustrate how beneficial focused redevelopment can be to the wider course, the following aims to highlight the possibilities available by identifying examples that may be beneficial to the Club.
- Although being a small Club, machinery inventory is very good with all surfaces catered for. Some equipment should be utilised more often across all playing surfaces (Zig-Zag brush) to aid refinement and work dressing material into the surfaces following applications.

- Targeted investment into additional implements like a spring tine rake would allow for regular operations in specific areas on fairways. This would also accelerate refinement processes in grassland rough areas.
- Frontline mowing equipment maintenance would be more efficient if all machines were from a sole manufacturer. Spares inventory would be reduced in the event of a breakdown together with having the ability to utilise identical machines on other surfaces.
- Having the same model of ride-on mower on greens and tees would enable continuity if down-time occurred. Future replacement plans should consider this in order to streamline maintenance costs and processes.
- Explore options of using dune sand for divotting and localised dressing of fairways and tees as an example of maximising resources and being more cost effective. Reportedly historic use saw regular inputs into playing surfaces and raised performance overall.
- Retaining native sand use is preferred over imported, however if this is unsustainable then ensure that dressing aggregates are suitably compatible with the existing profile composition.
- Fortunately, the Club have access to some loyal volunteers who should be utilised more efficiently to achieve desired outcomes and maintain standards. Currently used to assist with watering duties, they could be instrumental is accelerating recovery of damaged surfaces via divotting tees and fairways.
- Continue with the divot bag initiative and wherever possible look to explain to the patrons the importance of good practice to allow year round play.

Signed

Gwynn Davies - BSc Hons, MBPR
Regional Turfgrass Agronomist
t. +44 (0)1274 565131
e. gwynn.davies@strigroup.com
w. www.strigroup.com