



3 Year Agronomy Update and Future Plans

News has finally broken on my impending departure for Saudi Arabia, and I thought it was a good opportunity to give the membership on update on the team's progression made over my 3-year tenure, and what the expectations and goals should be for the club in the years ahead.

After accepting the role back in early 2021 it was apparent that there was a need to make changes on how the course was being maintained agronomically, and to give the team a modern outlook, building confidence and working on morale so they can take this into their day-to-day work.

We have been working off a 5-year plan since the day I came in. Thankfully with the club's support and backing we are well on our way towards reaching this and I believe that we are ahead of schedule in some areas of the plan.

Greens

The 5-year plan remains the same in terms of our end goal. EU regulations which we are still governed by are indicating another reduction in the use of available pesticides in the immediate future. I truly believe that in 3-4 years we will have zero pesticides available to treat fungal infections that affect our greens, reducing the standard and playability of them long-term. To tackle this threat, we need to try and create an environment that finer and more robust grasses thrive in and start introducing grasses that are less susceptible to these fungal diseases. This is where our aeration and sand come in.....

Our OM starting position peaked at 26% and this is what made the greens lose their grass cover and become soft and spongy, increasing the use of temporary greens especially in Winter. The application of 150T of sand per annum has allowed us to reduce/dilute the Organic Matter (OM) down to 6-8%, creating firmer putting surfaces all year round but also restricting the use of temporary greens in Winter. We are due to carry out testing this month and hopefully we will be ahead of schedule, hitting the desired 5-6% target and be able to consider overseeding greens this coming year at some point. It is important to highlight that these robust grasses need OM to be down at 5-6% in order to be successfully grown from seed.



Pic 1- Black layer develops due to a loss of oxygen levels in the soil when it becomes saturated, and an over reliance on the use of Iron “to green up” the turf.

Pic 2- Resulting loss of grass cover from suffocation and fertiliser issues.

We have worked hard over the years constantly aerating, top dressing and applying fertiliser in a more sustainable and biological way, helping us to improve the issues that we see above. This should be maintained over the years in order to ensure continued progress. Sand volumes should reduce in the coming years as the growth and OM accumulation is now under control, allowing staff to focus on refinement and introducing finer grasses. It is key to maintain aeration practices moving forward as this will help to move moisture away from the surfaces, circulate air, creating favourable growing conditions and help the finer grasses to establish.

Drainage is still required on the 11th/13th greens and the aim is to address this once bunker works are complete, although the weather will more than likely play a role in whether this is achievable or not. Its not uncommon to experience snow in February and if this is the case then bunker work may slow down. If the greens at 11 and 13 aren’t drained down before the start of the season, then I would suggest it should become the priority project once the season finishes in October this year. Phase 2 of bunker works should then continue once the green’s drainage has been installed.

As mentioned above it is key to begin the introduction of fine grasses for improved performance, but it is also important to provide the correct environment needed for them to successfully grow. This year we started overseeding the Putting Green with these sturdier species and the results so far are encouraging. This green receives little wind and light because of the clubhouse, but during periods of high disease pressure this green outperformed the others and was far less susceptible to disease attack. I was given huge support both financially and vocally with the council fully believing in the process involved. However, I can’t reiterate how important it is for the club to continue with this program and not revert back to missing/skipping greens maintenance. It’s also important to remember that my successor will need the same support if BKGK is to keep on improving and remain on course for having some of the best greens in the Edinburgh area.

There is no doubt that the Summers of 2018 and 2022 had a huge impact on the quality of the fairways. Thankfully once the tax case was resolved and the help of an insurance claim after storm Arwen, we committed to our long-term Fairway overseeding program. Annual Meadow Grass is the most common grass found on Parkland golf course fairways. It grows quickly, but unfortunately does not like the heat and requires a lot of water to keep it alive. This means as a grass it struggles in the Summer, drying down to the point of wilt and then eventually dyeing off in periods of drought. I had a series of meetings with various seed experts and the advice given was to begin seeding as soon as possible with a more drought tolerant grass that was less reliant on water. On this basis we went with a mixture of Fescue grass which is more commonly found on Links Courses but has an ability to “bounce back” quickly when we do receive rainfall. It was a slow burner in all honesty to start with but after nearly 2 years of overseeding, we are starting to see a vast improvement in our fairways.

As well as the seeding work, we started fertilising Fairways too and we found especially last year, that if we apply a decent granule fertiliser at the start of the growing season it gives the grass a much-needed boost early on and helps build plant health, encouraging a sustained growth. The plan is to continue with this in March and in the summer commit to another year’s worth of seed (2x applications). This in my view coupled with regular applications of fertiliser will help to deliver the lush, soft green fairways that are normally associated with Parkland Golf Courses.



10th Fairway 2018



10th Fairway 2023



12th Fairway 2023

The improvement is clear to see from these pictures but not restricted to the 10th hole. There have been notable improvements in the 3rd, 4th, 12th, 13th and 14th too.

I have noticed this year that although we still suffer from worm issues, it does not seem as bad as previous years and this could be down to a build-up of sodium in the soil from the fertiliser but more likely that the grass density is thicker, and it is harder for the worms to break through.

I would like to add that last year in May/June we bought multiple hoses and travelling sprinkler heads to irrigate fairways with slopes and areas severely hit by drought. It would cost a fortune to install Fairway irrigation but perhaps a more cost-effective measure moving forward to is to continue with the running of hoses and try to do everything we can to help these areas from drying down.

One of the first things I introduced early on to the course was an increase in definition. Previously, Fairways, Approaches and greens collars were all cut with the same machine and at the same height, with very little definition between the 3 areas. After 2-years of overseeding and an increase in fertiliser applications we soon started to see an improvement and an increase in density of grass cover. We began hand cutting collars last year and feedback has been positive watching the new grasses outcompete the old stocky Ryegrass and Yorkshire Fog that was becoming quite noticeable, with most golfers enjoying being able to put from in and around our greens.



2023 hand-cutting in and around the 7th green.



2021 Old stocky Ryegrass around 7th green

It's hard to imagine the golf course like this in the depth of Winter but better weather isn't far away, and it won't be too long before everything starts to heat up with the grass coming out of dormancy and springing to life again.

Sand Harvesting

We have treated Fairways and Approaches much the same since I came in as they are closely linked, and both equally important areas of the golf course. Like our greens they require similar regimes in terms of maintenance (fertilising, spiking and scarifying). I would have liked to of improved these areas a lot quicker, but as the majority of our annual operating budget was spent focusing on trying to improve greens, sometimes other areas had to miss out. Thankfully as previously mentioned, the tax case turned out positive, so we started making long-term plans that would allow us to improve these areas in terms of their playability and firmness.



I mentioned seeding which has given us better grass cover, but there is still a long way to go in order to get these areas up to the required standard. Most of you will have remembered the sand harvesting machine working away for a week in August last year. The idea was to create our own top dressing so we could apply it to our Fairways, Tees and Approaches in an effort to dilute the thatch we have accumulated over the years....much like our greens.

I should still be here to see this put into practice, but it will take multiple dressings long after I'm gone to dilute and firm up these areas. The ball is rolling though, and with increased aeration practices, sand dressings, and selective fertiliser applications Broomieknowe will see a definite improvement in these areas.

I touched earlier on EU regulations, pesticide removal and what the consequences will be. Unfortunately, we are already seeing what this looks like as we no longer have a chemical available to us for controlling worms. We used to be able to reach for a bottle and take our sprayer out to either kill off or drive the worms down away from the surface. That is no longer an option, and we are forced to look at improving cultural practices to deter or improve the worst hit areas. Again, this is where the sand comes in. If we can apply heavy dressings of sand and work it deep into the soil profile, we will help drive the worms down as the sand is abrasive to their skin, and at the very least start to see sand casting rather than the soil we currently do. I don't know about yourself, but I don't often see many wormcasts when I go out to play on a Links golf course...It is certainly food for thought.

There were many stories circulating about the volumes and associated cost savings from the sand harvesting. I will list what we harvested and the associated cost to us if we were to buy this and bring it in. You can decide for yourself if it was a worthwhile venture.

Total sand harvested circa 2500T – Cost to buy and deliver this @ £38 P/T £95,000
Total Topsoil Harvested circa 1000T – Cost to buy and deliver this @ £20 P/T £20,000
Total 10-20mm Drainage Gravel harvested circa 80T – Cost to buy @ £30 P/T £2400
Total 20+ mm Gravel Harvested 40T – Cost to buy @ £30 P/T £1200

We have managed to harvest £118,600 worth of raw material to improve our golf course for a total sum of £5500. This to me is a great example of sustainable land management, utilising land that we didn't have the budget to support the purchase of these materials, meaning that we couldn't afford to physically tackle or improve these areas. This initiative has allowed us to start the process of improvement but ultimately equip future turf managers with the necessary materials to deliver improved playing surfaces.

As we are currently working towards completion of phase 1 of our bunker renovations, the ability to use sand, soil and gravel that we produced on-site has helped to keep costs down. This can and will remain the case as the development moves into phase 2 later on this year.



Tees

Tees are an area that will require time to improve. Its normal for tees to change over a period of time with an increase in play and divots especially affecting how level the tee can play. Broomieknowe GC is built on old coal mines, and we can see evidence of this with sink holes or areas of grass that have collapsed and fell in (14th Fairway for example). This also happens on other areas like tees. We have started the levelling process already building new tees on holes 1,2,3 and 11. The CSG have a plan of what tees are in need of renovation and over the next few years I'm sure you will see a notable improvement again. Some tees have needed major reconstruction work but there are others who require minor levelling which is encouraging. Our Tees are an area of turf that we treat exactly the same as our Approaches. The process of seeding, top dressing and aeration should continue and again there is no reason that after a period of time we should see an improvement in them too.



Medal tee at 2nd



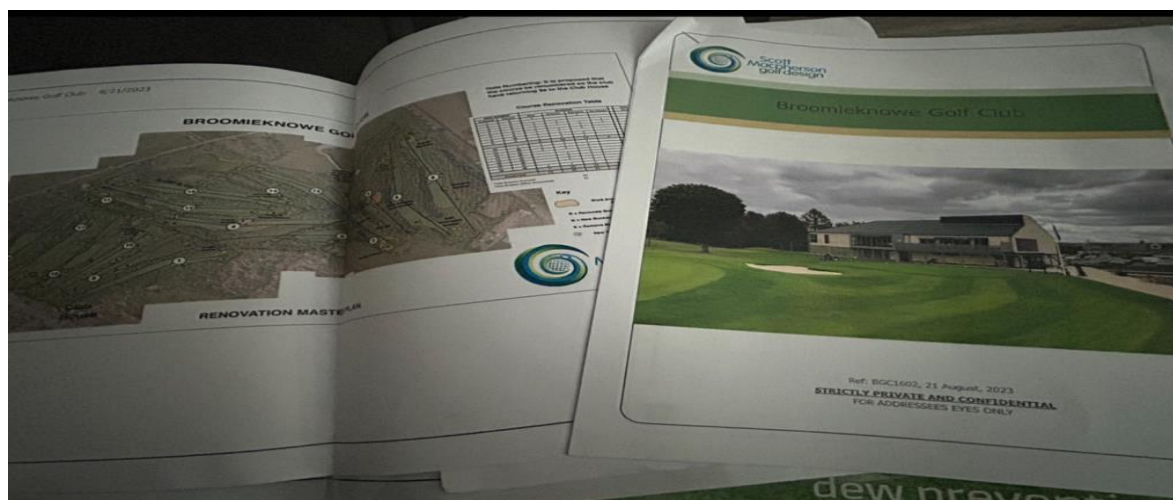
11th tee renovation

Golf Course Strategy Group

The whole purpose of me coming over here to work was to be involved in the renovation and development of Broomieknowe GC. I always had a time frame of 5 years in mind before I thought it would be time for me to start looking for a job closer to home and cut down on the travel. I have been here 3 years now, and in that period, we have worked on areas that have needed change or adjusted for various reasons. The new Putting green and 3rd tee were successfully built to finalise and complete the reinstatement works from the building of the Clubhouse.

We then had to wait on the confirmation of the result of the tax case which took a little longer than expected, but eventually we got the news we were waiting on. The CSG re-assembled and we started pulling thoughts together to improve the golf course on the back of the results from the survey issued by the club.

Bunkers were the no.1 priority for the membership and rightly so. We had 4 or 5 different styles of bunkers with different types of sand across all bunkers, emphasising the need to develop a full bunker renovation plan.



Fast forward to October 2023 and the plan began, re-engaging with Course Architect Scott Macpherson to create a golf course bunker masterplan and bring a focus on developing the top field first. The plan involved removing 'X' number of bunkers, redeveloping some and totally building new ones that would bring a fresh outlook and create better opening and closing holes.

Part of the design was to reduce the number of bunkers, something that many golf courses are doing across the world. Instead of a standard fill in and turf, it was advised to create a couple of run-offs at greensides to allow a bail out from the more penal new bunkers we had built. Its early days but feedback has been really positive, and most members agree that it has changed the top field quite a bit, but for the better.



Notable change at 16th



Greenside R/H 18th.



Fairway Bunker at 1st

We are on schedule for finishing phase 1 on time provided we don't get any prolonged adverse weather. Even now as I spend time writing this the team are out turfing the 11th tee in minus conditions and aiming to kick on again next week with bunkers again.

The CSG results highlighted a few other areas that required updating or attention. Better Fairways, drainage in the bottom field, improved paths were all on the list along with the ditch at the 4th. Personally, I liked the open ditch but recognised it had its flaws. The filling of the ditch has made the hole more playable and less penal. We filled it in last Summer before it became too wet to support the heavy machinery needed to carry out the task. Drainage pipe and gravel was installed, and then back filled with sand and topsoil before seeding. It has grown in well and we need to tidy up the 2 ends before the season starts as we ran out of time with staff starting to take annual leave and the grass growth starting to increase. Once temperatures climb again and the grass starts to move, we will finish off this area and have it complete.

Staff And Volunteers

The work the volunteers put in should not be underestimated and represent the equivalent of 1 extra member of staff per week. I sometimes hear throw away comments like “just get the volunteers to do it” Something that is mentioned without any real thought. They have the club deep at heart and want to see the golf course benefit from all their hard work. Throughout my time here they have been dependable and always made themselves available when we were about to take on large scale tasks like we have done this Winter. So, on behalf of the whole club thank you!

During my time at the club there has been a change in staff personal a couple of times. I look at both Steven Henderson and Steven Thomas who were both here when I arrived and have taken on board some advice given, used it, and went on to better things. It would have been great to keep them here at the club as they were fantastic workers who gave their all every day, but that's not realistic, and some people just need a little push in order for them to realise they are not reaching their full potential.

As one door closes another one opens and we have seen us add to the staff with Matty and James, making it somewhat of a mini-Fife takeover. They have been a great addition to the team bringing with them experience and their own skillset, which the club has benefited from. Let's not forget Paul though....The golfers pal! Paul is a trusted and dependable member of the team, being here a long time, and seeing many changes of staff over the years, especially the big change from Hamish's style of management to my own.

It was a big change when I came in, after working with Hamish for so long. The changes that were made in the transition were positive and the volume of work put into greens for example was something that took time for them to understand. Early on, due to the volumes of sand we were applying, I think they thought they were working at the beach at one point. However, they pulled together and believed in the process required to make the progression and the course has reaped the benefits of their hard work. I have no doubt the club are in safe hands and I'm sure the boys will relish the opportunity to potentially work with someone new and further enhance their skill sets, whoever takes over from myself.

The Challenges We Face Today and Tomorrow

As well as the positives there is always negatives, this normally gives people time to reflect and consider what could have been done better. Sometimes we are at the mercy of the weather and there's very little we can do about that. We are also restricted by budget and not always having the required cashflow, number of staff or machinery to tackle certain things on the course. I always see my job as a balancing act and prioritising what's most important to the overall membership with what's at our disposal. The tax money is there, and we could have done 'X, Y or Z' to help short-term but once it's gone it's gone, and we then have to revert back to what the annual operating budget can support. Hence the need for us to explore long-term sustainable initiatives, ensuring we still have a golf club here in 30 years' time.

The bottom field was an area highlighted that needed attention. I haven't managed to do much about this unfortunately, as it needed an investment of money to improve the drainage issues. It's only now that the tax has been resolved that we can look to make significant improvements. I did bring in the Earthquake machine as a short-term fix to help open the surfaces and let the moisture move away, which it did. The downside to it was that it worked too well, and we didn't expect the drought of 2022 to be so impactful. Fairways in the middle & top field began to crack from the lines created by the earthquake machine and under the drought conditions they began to open too much.... lesson learned! It's no secret that Fairway drainage would significantly help the playability of the golf course in the Winter, and it's something that should be considered once the bunker project is complete. The flip side of this is that installing these drains raises a potential issue with these fairways in the Summer. The soils' ability to retain any moisture would be lost and drain lines across these areas would be very apparent and possibly start to crack again unless we can get water to them. The 6th Fairway and 8th tee are a good example of this.

Tree plantation rough was an area that had a long-term strategy of being aesthetically pleasing but not penal. This would have created long thin wispy rough helping definition. It had its downside as it would have taken 7 years to achieve the desired rough, and the period up until then was deemed to be too difficult. It slowed play from lost balls, and members generally just found it too tough to play from. We decided to shelve the wispy rough in these areas and compromised on cutting it every 3 weeks (when we didn't have machinery breakdowns or damage). Some areas remain left untouched, like in between 6,7 and 8 due to the time it takes to cut it all, and the potential damage to machinery from the roots protruding out from the grass. We could strim these areas or try something else, but it then takes the member of staff away from cutting more important areas. Which again takes me back to prioritising.

Stones in bunkers were an issue and I agree that it was far from ideal. The problem was that we could have spent money on sand for a quick fix, but the next band of heavy rain would wash the sand to the bottom and push the stones to the surface again. We were also aware at that point last year, that the tax case was resolved, and it didn't make sense financially to spend £1000's on sand from an already tight operating budget, to then dig it all out when we began the bunker development. Thankfully the club are investing in bunker liner now and it will stop the contamination of stones popping through and into the bunker sand.

Expectations

Climate change is here and there is an increasing pressure on golf courses and greenkeepers to have the course open 365 days a year. Spring to Autumn brings an increased pressure to ageing irrigation systems, unable to deal with the volume of water required to keep the grass alive. Pipe bursts, joint breaks and pumps fail all costing money for repairs that previously wasn't budgeted for, and the cycle continues until it becomes too much, and the systems fail completely. At £300,000 for a new system not many clubs can afford to replace, so naturally expectations need to be lowered. Again, we can go back to the reasons gave for introducing certain drought tolerant grasses.



18th fairway July 2022

Winter brings a different challenge for Parkland courses predominantly built on Clay soils. I have touched on drainage re bottom field but reflect again to almost 10-15 years ago when it was common practice for grass mowers to be sent away in October to get sharpened and serviced due to lack of grass growth brought on by weather conditions. We currently cut greens right up to December and encounter less snow and frost, so courses are shut less and the desire to be open and playable is increased.



I touched on EU regulations and what it will eventually look like in circa 5 years. The picture above shows what we will be left with when pesticides are withdrawn. Expectations will need to be lowered and this will be a common picture on Parkland golf greens during periods of high disease pressure (July-December)....If we don't start acting now.

Closing Thoughts

I can't reiterate enough how hard our dream team of greenkeepers work. There is no one more disappointed than staff when the course is forced to shut, or holes are closed due to adverse weather. The boys work their ass off every single day in all conditions for the benefit of the whole membership and sometimes are unfortunately questioned or criticised why we do certain things. It's part of the reason, staff are leaving this line of work to do something else. Who can blame them? Alarm clocks at 3.30am sometimes earlier, and a need to work 2 weekends a month for not much over minimum wage brings things into perspective. This isn't a rant, and I'm sure most of you appreciate the effort put in by staff. It's maybe just a heads up and something to consider before sometimes passing judgement. They are incredibly honest and hardworking, deserving far more respect than what they get sometimes.

It's been an incredible 3 years at the club and something I have really enjoyed. The support given to me and my team from Council and most of the membership has been amazing. The Directors in place right now deserve huge credit for how they conduct themselves when representing the club. They believed in the project put in front of them during my interview process and have more than fulfilled their end of the bargain in providing the team with the necessary tools to push the club on. I have no qualms in saying that with the people in charge of the club right now Broomieknowe GC can only continue to prosper and grow.

I would have loved to be able to tell the membership more on my new opportunity, but with the volume of money being spent on the project it must remain low key. Perhaps once it's open most of you will understand my reasons for accepting the role and the opportunities this move will bring for me and my family, but for now all I can say is it's an incredibly special project that I could not say no to.

It's unfortunate timing that this opportunity for me has come around now, as it was always my intention to deliver on the necessary improvements needed, to set the club up in a better long-term position. As I said before, "as one door closes another one opens". I am 100% confident that my successor will continue the hard work pushing the project on and give the club the golf course that it deserves with everyone's support.

I hope everyone enjoys the changes already made and have a great 2024 golfing season.

Best Wishes,

Allan Duncan
Course Manager
18th January 2024