

HESWALL GOLF CLUB

IRRIGATION **AND** DRAINAGE UPDATE

EGM

19TH MARCH 2024

REPAIR v REPLACE EXISTING SYSTEM

- Even when working, the current system is inefficient and fails to supply water at a rate required and in the required location. Many of the sprinkler heads including those on holes 5-9 have been poorly positioned and spaced leading to inadequate coverage.
- Countless leaks and faults have been reported previously leading to diversion of staff time away from essential course management and presentation and resulting in reduced morale.
- Course Manager has produced a two page fault list on the existing system, this is before it has been primed for use in 2024.
- Ineffective borehole and water tank coupled with countless leaks resulted in £14k spend on mains water during 2023. Water tank takes 15 hours to fill.

REPAIR v REPLACE EXISTING SYSTEM

- *“I anticipate this year the need to spend a lot of man hours on irrigation issues that should be spent on the golf course. The irrigation system currently fails us with our agronomic plans, with poor uniformity of water distribution, which makes moisture management difficult. It holds us back from carrying out essential maintenance during maintenance days, with the fear of not getting the recovery required due to the lack of water inputs. To move the golf course forward the irrigation system is unquestionably essential to achieve this.”*
- *“It is a worry that we will not make it through the season without the loss of turf areas on the golf course. We will do our best with the resources at our disposal”*

Liam Lewis Course Manager March 2024

REPAIR v REPLACE EXISTING SYSTEM



REPAIR v REPLACE EXISTING SYSTEM

- *“ Patching up the existing irrigation system would be a waste of money and time and to be honest could cause more problems than it solves. If any part is upgraded it will likely influence the delicate balance of the current system which will cause further problems.*
- *The financial dilemma of any new irrigation system is one faced by many clubs and for certain it is better to spend money wisely than throw it away. In reality the club is going to be faced with replacing the system in the near future. As mentioned previously any new system will provide efficient, uniform irrigation with water application being related to evapotranspiration and the ability to target water precisely where it is required”.*
- **Adrian Mortram 2013**

REPAIR v REPLACE EXISTING SYSTEM

- *System is worn out and increasingly failing.*
- *Spare parts are in increasingly short supply.*
- *Mixing old with new will adversely affect any available guarantees from new equipment manufacturers and installers.*
- *There is little if any scope for reuse of any existing components.*
- *Replacement of almost all components in a relatively short timeframe is inevitable as they fail but piecemeal replacement on failure:*
- *Probably involves extended periods without irrigation.*
- *Is costly as it offers no economies of scale.*
- *Does not enhance system performance even when complete.*
- **Adrian Mortram 2024**

REPAIR v REPLACE EXISTING SYSTEM

- *“ We strongly believe installing the irrigation system in a single phase is the correct solution for HGC”*
- *“One overall comment we would make is that everything in life has a lifespan. The lifespan of an irrigation system is 25 years depending upon levels of ongoing maintenance, original design and installation quality. The irrigation system at HGC exceeds 40+ years with the majority of the infrastructure being installed in 1981 (some prior in the 1970’s).*
- *From our understanding the golf club also do not have any accurate as laid records of the older irrigation system. We therefore do not know how the hydraulics (main line pipe work) and electricals (central control system) are installed under the ground. This makes it extremely difficult to design a phased system installation.*
- *With the age of the existing system and the lack of records etc we therefore do not believe a phased approach is the correct solution for HGC.”*
- **Adrian Mortram 2024.**

REPAIR v REPLACE EXISTING SYSTEM

- Adrian Mortram Associates – longest established irrigation design and consultancy practice in UK and Northern Europe. Collectively have more than a century of experience both nationally and internationally. Philosophy is to provide impartial, practical and cost effective advice to enable the client to achieve their goals.
- Responsible for design and irrigation consultancy at most of the top golf clubs throughout the UK and at all Open venues.

REPAIR v REPLACE EXISTING SYSTEM

- *“Review the costs of maintaining and improving to current irrigation system”.....*
- *....”by chasing and curing leaks and installing new electrical control systems. Spending around £30k, repairs to leaks done in house and electrics by contractor. We have the skills required within the membership”..*

DRAINAGE - Context

- Wettest July to December since records began
- Wettest February recorded since records began in 1836
- Heswall recorded 10x more rainfall in February 2024 than 2023
- Heswall recorded 6x more rainfall in July 2023 than 2022
- Every month since July 2023 to March 2024 has seen significantly more rainfall than the corresponding months for the preceding year.
- Winter 2022 there were windows of opportunity to cut the course throughout.
- October 2023 was the last time we were able to cut rough/semi rough
- February 2023 we were cutting the entire course daily.

DRAINAGE - Context

- Winter 2023 has been exceptional and unprecedented.
- Anomaly or the norm??
- Met office predict ' hotter drier summers and wetter milder winters'.

DRAINAGE – Work to date

- Installed new drains to majority of redesigned greenside Ecobunkers.
- Laid new drain to right of 9th green
- Installed drainage to front of 4th tee
- Cleared outfalls and drains from WW to left of 9th fairway
- Laid new drain and backfilled right of 11th green
- Installed new drains on 2nd, 14th and 18th greens.
- Commissioned a Land Drainage Consultant. Site visit 28th/29th February.
- Detailed 67 page report.

DRAINAGE – Commentary from Drainage Consultant

- Upper Course – Slowly permeable seasonally wet slightly acid soil but base rich loamy and clayey soils with impeded drainage
- Lower Course – Slightly acid loamy and clayey soils with impeded drainage
- Soil analysis silt plus clay plus sand
- Open ditchwork variable some free flowing and some which require maintenance and cleaning
- Water run off from farm land adjacent to 1st and 2nd holes severely affecting drainage
- Inadvisable to use same installation systems as previously laid on the course e.g 2nd fairway
- Surface water infiltration rate test on 12th hole water drained at a rate of 9mm/hour, normally should be in excess of 100mm/hour caused by backfill with top soil.
- Moisture content for each hole ranged from 49%-78%. Content greater than 50% considered excessive. Only Hole 6 was below at 49% and Hole 4 the worst at 78%.
- Topsoil will be prone to compaction especially when wet

DRAINAGE – Commentary from Drainage Consultant

- Must adopt a staged approach to drainage activity, assess impact and then agree next steps.
- Without fairway irrigation, piped drainage can be very noticeable in summer as too can secondary drainage.
- Any work would be best carried out during drier months of late spring and summer with an aim for completion in autumn whilst good growing conditions remain.
- ...”it would be inadvisable not to instal the new irrigation system in preference to installing drainage”.
- Much of the piped drainage can be installed in house with external contractors being used where necessary to assist with main carrier drains.

DRAINAGE

- Summary recommendations include:
- Commence ditch, culvert and outfall clearance and maintenance programme
- Consider new ditch to left 1st fairway (in OOB)
- Consider application of lime to fairways
- Consider application of sand to fairways
- Commence soil aeration works with use of shockwave aeration and verti draining early spring and Autumn

DRAINAGE

- Camera Survey of large carrier drains and outfalls
- In house commence piped drainage system on selected holes to ditches
- In house instal Slit drains/gravel/sand bands tbd and with use of hired in machines.
- Topographic survey of course
- **All the above to be progressed during 2024/5**

DRAINAGE

- Future consideration :
- Consider need for a detailed design of new drainage system
- Assess whether there is a need for work to be contracted out to drainage contractor