



Royal County Down Golf Club

Newcastle, Northern Ireland

Guarding the resource, together

Links Manager:

Eamonn Crawford,
Royal County Down

Secretary:

David Morgan,
Royal County Down

Designer and consultant:

Adrian Mortram,
Adrian Mortram Associates

Contractor:

Jim Price,
MJ Abbott Limited

Distributor:

Robert Jackson,
Reesink Hydro-Scapes

Product Manufacturer:

Simon Squires,
The Toro company

Products chosen:

Toro Lynx LSM, Infinity &
Flex B Series Sprinklers

Championship course (18 holes)

688 Toro INFINITY 35s and
34 INFINITY 55s on greens,
approaches and surrounds

297 FLEX35-6B Series on tees

160 T5 stainless steel riser
sprinklers

947 590GF rotors on the
walkways

36,000m Toro jacketed
Polyethylene decoder cable

Annesley course (18 holes)

460 INFINITY 35s on greens,
approaches and surrounds

171 FLEX35-6B Series on tees

40 T5 stainless steel riser
sprinklers

345 590GF rotors on the
walkways

10,000m Toro jacketed
Polyethylene decoder cable

The club

Royal County Down Golf Club is in one of the world's most naturally beautiful links settings in the Murlough Nature Reserve. Considered one of the best courses in the world, the preservation of the traditional links conditions is of paramount importance to Links Manager Eamonn Crawford and his team who adhere to a strict links maintenance programme to provide a highly rated Championship course and keep the greens and approaches as firm as possible.

Deliverables

The club recognised the need to update their irrigation system to take advantage of modern technology and to accurately re-define the areas to be irrigated.

The legacy system was designed in late the 1990s and featured a Toro CDS control system. The system had served them well over the last 20 plus years, but in order to better support the needs and requirements of the club, the design needed to be reviewed to incorporate more accurate water delivery. New control system technology needed to be implemented

with the design to maximise efficiency and precision of water application. David Morgan, Secretary, says: “We have a social responsibility to manage our water usage, as well as an obligation to the course and our members to present it as a traditional links course. This requires a certain level of irrigation control and precision to keep it alive but not green.”

Specifically, Crawford, who has worked at the club for 49 years and been Links Manager for 14, wanted a system with pinpoint accuracy. He knew he needed to provide an irrigation solution that future-proofed the club, ensured its longevity, retained its position as one of the best clubs in the world, and in the process left a legacy for the next generation.



Being ranked as the number one golf course in the world comes with great responsibility. There’s an environmental and social responsibility, while respecting the traditional maintenance of a links course and providing members with the ultimate golfing experience. Effective irrigation is integral to that and being seen to be guarding the resource as we achieve these things keeps the club where it should be: at the forefront.



David Morgan
Secretary, Royal County Down

Challenges

The design and system needed to be brought up to date and in line with modern industry standards. The need for a strong focus on water conservation needed to be at the forefront of the project deliverables.

The existing design featured a classic 90s double row fairway sprinkler layout, and the inherent inefficiencies within that layout meant that water was being applied to roughs and unmanaged areas where it was not wanted or needed. The system did however feature Polyethylene mainline pipework, which was in excellent working condition. This was able to be retained and incorporated in the new system design.

Three new holes had been built on the Annesley Links in the ten years previously, and the irrigation system had been extended to cover these areas. In creating a new design, the club had the opportunity to properly integrate these course developments within the overall system revision.

MJ Abbott’s team, led by Jim Price, had some significant tracing and location of services work to undertake as they planned their installation schedules. This was imperative to prevent disruption to the client and minimise the impact on golf course operations.

Installation ran simultaneously on the Championship and Annesley courses, starting in October 2023 and completing in Spring 2024 ensuring the club was able to prepare for the Irish Open in September 2024. The Championship course completed in January 2024 and the Annesley course in early April 2024.

Winter 2023/24 proved to be the wettest and hardest in 25 years and the impact of the weather conditions the installation teams were subjected to cannot be overstated. The terrain of this links course with narrow fairways threading through sand dunes and combinations of mixed ground conditions including sand, stones, bedded shale and stones meant that the mole ploughing operations encountered were challenging to achieve the high level of finish demanded by the project.



This is now a fully connected course in real-time. To deliver a project of this magnitude in some challenging conditions on time is a huge success story for all involved.



Jim Price
MJ Abbott Limited

Solutions

Crawford and Morgan had done their due diligence in terms of brand comparisons before specialist irrigation designer and consultant, Adrian Mortram from Adrian Mortram Associates, tendered for the project and Mortram was instructed to gear the irrigation system specification plans entirely towards Toro.

Due to the extensive scope of the irrigation renovation, Mortram spent a considerable period at the club completing a comprehensive design to ensure that the exact location of the retained pipework, connection points and existing sprinklers were carefully surveyed and recorded. The new components of the system needed to fully connect with existing to achieve the project goals.

The design specified a Toro Lynx LSM control system. The capabilities and capacity of this 21st century technology gave Crawford the level of control and accuracy demanded to operate the new design to its optimum level. The ability to control run times +/- 1 second, high speed communication and diagnostics being at the core of Lynx LSM ensured the client had the flexibility and precision to irrigate effectively and selectively. The field control of the system is distributed throughout the courses from Lynx Smart Hubs, each providing upto four cable paths and able to operate up to 250 Lynx Smart Modules [LSM] per path. The ability to maximise the watering window on any given watering cycle is achieved by the ability to operate a maximum of 50 stations per path simultaneously.



Reducing the watering window and reducing the impact of irrigation servicing and maintenance on golf courses which attract so many overseas visitors was a key factor in the overall scheme design and product choices.

Toro Infinity valve in head and Flex Series sprinklers were specified for the project. While both models offer the exact same nozzling, drive assemblies and therefore distribution uniformity, the club could easily see the benefits of using the Infinity sprinkler in key areas. These sprinklers are fully top serviceable, meaning ongoing maintenance in years to come is far less impactful on the golf course. The LSM module, solenoid and calibrated pressure regulator are accessed directly beneath the top cover. Importantly the pilot valve can not only be accessed in the same way, but it can be completely removed for service/cleaning without the need to drain the lateral pipework.



I believe we all found this to be an enjoyable project to work on despite its challenges. Everyone was invested in a successful outcome and had the best interests of the customer and club in mind.



Adrian Mortram
Adrian Mortram Associates



Outcomes

The irrigation industry and the products and services now available have come a long way since the 1990s. The new design and system components feature the most current design practices and cutting-edge manufacturers technology. This enables the client to address the challenges faced in the past as well as being able to look to the future with confidence knowing there is capacity and capability for the system to expand as the course demands.

This system, its design and installation are a classic example of how to redefine the areas of irrigation to act as a guardian of the resource. Through technology, the club has increased its areas to be irrigated but uses less water and fewer wetting agents. The watering cycle is accomplished within a shorter watering window giving much improved flexibility during peak demands of the course for summer play.

Water application rates can be executed to the second, and with revised sprinkler locations water is only applied where it is required. Water wastage and excess power consumption are eliminated and course conditions are improved.

The scale of this project in the UK was about as big as it gets says Mortram and the conditions could not have been worse for installation says Price, but the project was delivered successfully and on time. Now the club has total and full responsibility for its resources.

Morgan says: "Overall delivery met expectations. All parties came together seamlessly to deliver Royal County Down with an irrigation solution to the budget and timescale set."

Crawford comments: "Now, we have full control in managing the system and water application. There's no wastage and we only use what is needed where it's needed. Irrigation really is made easy with Toro and this is the best system at this time and the process has been well worth it."

Customer training and support was provided by all parties, MJ Abbott, Reesink and Toro. Toro NSN provides an ongoing 24/7 customer support service which covers any software related queries as well as a comprehensive hardware warranty for the control system and peripherals. Future Lynx software updates will be provided directly to the client via NSN as they are released.



Having the best technology and resources available is essential to ensure we deliver our links maintenance programme effectively and efficiently and to the best of our capabilities. There was never any doubt that Toro and Reesink were the partners for us in that respect.

Eamonn Crawford
Links Manager, Royal County Downs

