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An updated irrigation system at Atlanta Athletic Club delivers savings in water and resources.

Atlanta Athletic Club, located in Johns Creek, Georgia, is a world-renowned private club that has hosted numerous professional golf events. Its Riverside and Highlands courses were designed by ASGCA Past President Robert Trent Jones, Sr. They were redesigned by ASGCA Past President Rees Jones, ASGCA, in 2003 and 2006, respectively. The Highlands course, originally built in 1964, has hosted the Ryder Cup, U.S. Open, U.S. Amateur and several PGA Championships, with the most recent taking place in 2011.

The 2006 redesign included replacing a 25-year-old irrigation system along with other course updates. The 2006 system was a conventional, satellite-type system with sprinklers on valve blocks, meaning two, three or as many as four sprinklers were wired together and activated by a single valve or station. All irrigation pipe and fittings were replaced during the 2006 renovation.

Change is coming

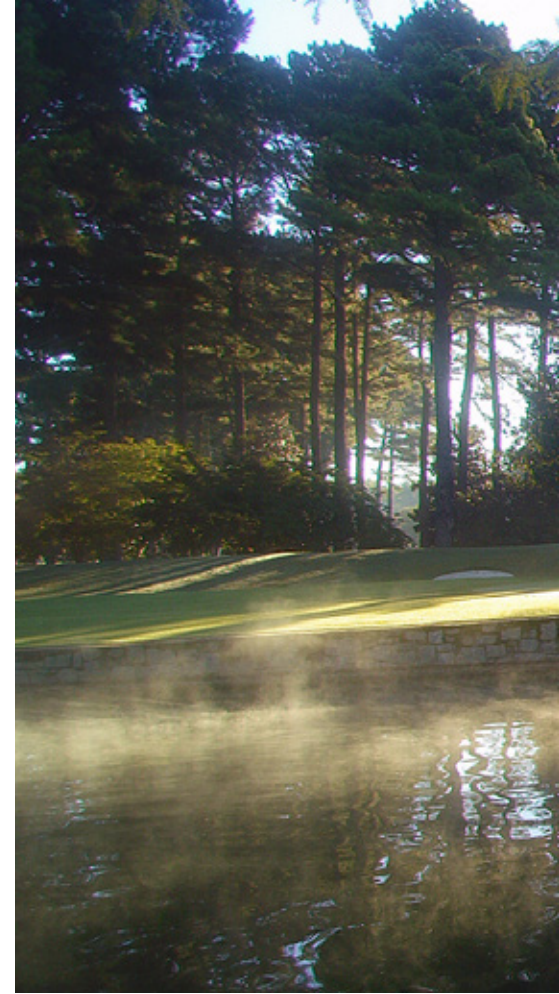
In 2015, Lukus Harvey started in his new role as director of agronomy for Atlanta Athletic Club. Harvey hit the ground running, and following two months of intense due diligence, he presented the club with a proposal to re-grass the Highlands course and rebuild its greens and bunkers. As he waited for the club to approve those updates, Harvey decided to investigate converting from the 'block'-style irrigation system to

single-head control—and fast. He knew he would have to economically justify any system updates, as he would be suggesting the club spend additional money on what could be considered a relatively new irrigation system by modern-day standards.

The club ultimately approved the renovation. In the meantime, Harvey and his staff had decided that they needed the precision control available with valve-in-head sprinklers and single-head control. After much research and fact checking, Harvey and his staff determined that the existing piping network was sufficient to maintain the course after its renovation. The network had experienced few pipe and fitting failures over the past ten years, and it still featured an optimal mainline and lateral size and solid installation. Harvey and the Atlanta Athletic Club

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felt confident that the existing piping network would last for years to come with little maintenance, making it possible to irrigate the course to the tournament-level conditions they wanted to provide their members.



More importantly, they felt the existing sprinkler-head spacing in the fairways and other areas was satisfactory, and, with the new, more efficient sprinklers, they would enjoy increased water and resource savings for many years.

From there, Harvey and his staff began to evaluate the most economic and practical way to convert the existing sprinklers to single-head control. Changing the block-style sprinklers to valve-in-head sprinklers

would require running additional wires from the new sprinklers back to the existing satellite controllers, crisscrossing the golf course multiple times. That's when the flexibility and simplicity of a two-wire system



became a more appealing option. They chose Rain Bird's Integrated Control (IC) System to give them both the single-head control they desired and the most advanced technology and system diagnostics available for golf courses today.

Construction begins

Bidding for the golf course's construction and irrigation opened in September 2015. The club selected Landscapes Unlimited for the greens, bunker and re-grassing work, and Stahlman-England to install the IC System™. Work began in early 2016 under the watchful eyes of golf course architect Jones and his colleague Bryce Swanson, ASGCA.

Construction followed an aggressive schedule with grassing to begin on the greens no later than mid-July of that year. This meant the irrigation system would have to be installed quickly.

During construction, Landscapes Unlimited completely rebuilt the greens with new drainage, soil mix and TifEagle bermuda grass for the putting surfaces. The tee tops, fairways and greens surrounds were

also re-grassed, but the contractors first removed the top four inches of native soil and replaced it with an all new soil mix. Tees and fairways were sodded with Zorro Zoysiagrass and TifGrand bermuda grass was chosen for the greens approaches, which are maintained at a very low mowing height. The roughs also received a makeover and were sprigged with Tifway419 bermuda grass in early September.

Irrigation installation

The different turf types being grown on the newly renovated course had their own unique water requirements and management needs. Thus, it was important that the new irrigation system could apply water to them independently of other areas and with precision and flexibility. To accomplish this, Harvey and his staff selected the most efficient nozzle and sprinkler combinations. They also added part-circle rotors to feature perimeters, allowing them to apply water uniformly and only when and where needed.

Another benefit of the new two-wire system was its easy, fast installation.

The IC System manages power and communication protocols over a single-wire path, making field controllers unnecessary. It features the largest capacity of sprinklers/intelligent modules per wire path in the industry, decreasing the number of different wire paths and interfaces needed for lower upfront and long-term maintenance costs. The simple, streamlined installation process results in minimal course scarring, with conditions back to normal in a matter of days.

Ground-penetrating radar and tracking equipment located existing drainage, underground utilities and buried tournament infrastructure before installation began. This preventative measure kept existing equipment safe from the vibratory plow that would be used to lay in the new communication wire. The existing block system's electric valves also had to be addressed. With the new valve-in-head system, these old valves would be obsolete. The team decided to leave the existing valves in the system but remove their internal diaphragms. This saved unnecessary labor costs associated with removing the entire



The irrigation system was updated in 2016, giving the club greater control and saving water and resources

valve from the pipeline. The existing satellite controllers were also now obsolete with the new system, so they were removed from the course.

To install the two-wire system, Atlanta Athletic Club's staff seamlessly installed new communication cables to every sprinkler head location with little to no golf course impact. With the new IC System, the existing satellite controllers became irrelevant and were removed. This also provided many advantages, including lower maintenance costs, no above-ground equipment to maintain and no visual obstructions to mar the course's natural aesthetics.

Realizing the long-term benefits

The new, state-of-the-art system on the Highlands course came in at a one-third of the cost of a complete irrigation system replacement, and its benefits are numerous. With the new system, Harvey was able to exceed all of his goals and expectations for a fraction of the price.

Along with increased control and cost savings, Atlanta Athletic Club has already experienced the anticipated water savings they were promised. Harvey and his staff are taking advantage of advanced features available with Rain Bird central control, including RainWatch™ and AutoET. Using data transmitted through the IC System wire path

and from rain catchment devices throughout the Highland course, the central control software automatically adjusts runtimes based on natural precipitation received during irrigating hours. Staff also use onsite weather and soil moisture data to program irrigation daily. All irrigation decisions are automated based on real-time inputs from the field, allowing for the most efficient system scheduling possible. This proactive water management strategy has reduced the amount of irrigation water being applied to the Highlands turf by 30 percent while improving conditions and playability. Atlanta Athletic Club pays for a reclaimed water source, so its return on investment will add up quickly. The club has also noticed a 50 percent reduction in the amount of labor hours spent hand watering.

For the next phase of the project in Spring 2017, the club installed a Rain Bird pump station to replace the inefficient, 23-year-old station on the Highlands course. The new pump station will be able to communicate with the central control software and allow the course and its staff to benefit from SmartPump™ software. This software effectively compares the pump station's actual flow and pressure with the theoretical flow in central control. The intelligent, two-way communication recognizes pipe breaks and motor failures as well as

soft and hard power shutdowns and reacts in real-time to save water and energy costs, notifying the staff when there is an issue. The software will also allow them to maximize pump station capacity and reduce their water window even more.

When asked if he would do anything differently, Harvey replied confidently: "We achieved all of our goals on this renovation, including getting a new, state-of-the-art irrigation system that gives me the ability to apply water in the most efficient manner possible at a fraction of the cost. I can't imagine doing anything differently". ●



Ian Williams

Ian Williams is the National Specification Manager for the Golf Division at Rain Bird. He helps golf clubs across the United States to develop optimum irrigation solutions for their courses.