



**CLUBHOUSE**  
A view of the King's House at Royal Bled



**SPRAY LINE**  
The putting green being irrigated

# Royal Bled taps into Rain Bird expertise

As Ellie Parry recently discovered, Rain Bird has delivered one of Europe's most advanced irrigation systems at Royal Bled, a system that course superintendent Steve Chappell, can be justifiably proud of.

If the strapline on its website, 'Heaven on earth', isn't a bold enough statement to convince you that you're poised to experience something both special and memorable, then your arrival at Royal Bled surely leaves you in no doubt.

There cannot be many finer backdrops to any game of golf. The majestic rise and fall of the Julian Alps give way to the picturesque tranquillity of the destination's courses, the King's, the oldest and largest in Slovenia dating back in its original design to 1937 – renovated by Donald Harradine in the early Seventies – and complemented by the addition of the Lake's Course two decades ago.

Vistas from both take in the iconic precipice-perched Bled Castle.

Established golf architect Howard Swan had worked at Bled for some ten years for a Slovenian conglomerate which owned and operated a number of hotels in the town, but it was when the Šolak family acquired the club that the long-planned renovation got underway in 2015.

Over the next three years, William Swan and his father directed the design process to revolutionise what had been laid out beforehand, leading a project team of foresters, earthmovers, shapers,

lake lining specialists, drainage experts and constructors from 17 nations in total, in addition to local specialists.

The redesign resulted in a changed layout, extending the course to Championship length – some 6,563 metres from the tournament flight off the five tees on each hole, redesigned and reconstructed tees and greens, and ten new lakes to create a dramatic and spectacular design.

Key to the design principles practiced by the Swans in the rebirth was a focus on protecting the natural environment and important habitats as the holes were built.

Fundamental to this was comprehensive planning in the management of water for the courses; where it came from, where it was to be stored, how it was to be used and how its quality could be sustained. This was embodied in the system design specification developed in collaboration with Rain Bird Europe and its Zagreb-based Authorised Service Partner, In-Aqua, to provide Royal Bled with one of Europe's most advanced irrigation systems.

The design concentrated on conserving, harvesting, recycling and optimising the use of water on the golf course.



**FIRST PRIORITY**  
Course superintendent at Royal Bled, Steve Chappell



The comprehensive and long-term strategic plan drew together these inter-dependent elements of best practice and related them to the wider environment of the course, given its adjacency to the nationally important Triglav National Park.

One of the requirements set out by the architects was to create a system to encompass the wholesale King's Course renovation and the future development of the Lake's Course.

This was reflected in the pump station sizing and design as well as mainlines and cables. Royal Bled pays for irrigation water supplied from a lake at the hydro-power plant some 5km away, but supply pipe limits the daily volume available.

Consumption reaches 1,500m<sup>3</sup> per day at peak, so In-Aqua was also asked to prepare a water management study proposing options for supplying water from a nearby river and for the movement of water through lakes at the course.

They also installed temporary flow measurement at a nearby spring to establish its capacity. The irrigation system proposal included water sourcing and lake management, in addition to irrigation system design, pumping and pH control, central control programming, advanced weather and soil sensing features, and other adjacent systems.

Critical to In-Aqua being commissioned for the project alongside its ability to provide wider water management support and a comprehensive programme for the King's Course, was Rain Bird's capacity to deliver the requirements and its consistent commitment to its systems.

Slovenia is prone to lightning strikes, recorded as often as three or four days of the week, so a Rain Bird IC System was specified, eliminating the use of satellites and decoders and providing multi-function real-time response along with powerful diagnostics and end-user control.

With so many heads on the course, it enables the course manager to run a status poll and voltage check of the whole site in three minutes – invaluable for fault detection and rectification after a strike. Having the IC System in the ground during construction also provided an invaluable way of monitoring the site, flagging up if machinery hit cables.

Once the system was integral again, contractors could move on to the next hole. This time-saving, problem solving monitoring wouldn't have been possible with a decoder system.

A Rain Bird Stratus II Central Control operated via PC at the facility and on a mobile device from anywhere in the world is enhanced with the largest Rain Bird soil sensing system in Europe, with two sensors per green for soil monitoring.

Other features include a weather station and a Rain Watch rain gauge all feeding data to the control system in real time.



**AERIAL VIEW**

A hot air balloon takes the scenic route over the King's Course at Royal Bled

Golf contractor All Golf Services Ltd was sub-contracted for the physical installation.

The new system is under the experienced stewardship of course superintendent Steve Chappell who said: "Irrigation is essential for sustained plant health, and that's my priority.

"Last year was an evaluation season for us, learning as much as we could from our readings to ensure optimal turf health and playability and reduce water costs. With unpredictable weather and evapotranspiration rates as significant as they are here, it's a leap of faith letting technology make those decisions.

"In order to fully understand the characteristics of the greens we've had to programme the sensors – train them, by saturating each green then draining and evaluating it, seeing how long it takes to hydrate the profile and drain it down.

"I varied the placement and depth on the front 9-holes, while they're set at a depth of 150mm and 250mm on the back 9," continued Chappell.

"It's essential that we can monitor moisture levels throughout the profile. When hand-watering, readings are very different in the top 50-70mm to those further down, hence the varied placement.

"Rainfall can be sporadic so our weather station and the system's Rain Watch feature, where rainfall is measured and deducted from the irrigation programme, ensures the course only receives what it needs. We now know that moisture content of 13 per cent at 50mm is optimal for performance.

"Below ten per cent, the surface is drying too much and we're back to hand-watering. At 250mm depth, we're aiming to keep it at 15 per cent. The sensors keep us at that optimal point. Data feeds into my course management reports, detailing our water needs and usage.

"It also helps with other turf management decisions, such as when to apply nutrients when coming out of winter," concluded Chappell.

Commenting on the project, In-Aqua partner Damir Ćizmek said: "The architects looked to the long-term future in all aspects of the project and were prepared to advocate to the client for being 'future-ready'. They really understand irrigation and put forward robust proposals."

Owner Gordana Šolak likened the skillfully remastered King's Course to Sleeping Beauty when it was revealed to the golfing world in 2017.

Reawakened after years of neglect, the stunning new jewel in Europe's golfing crown was opened by HRH Princess Jelisaveta Karadordevic of Serbia and instantly tipped as a future Ryder Cup host venue. Furthermore, Royal Bled is also a member of worldclass.golf.

The project's success is testimony to the talent of all those who worked under the Swans' direction and guidance, and was underpinned by the owners, with the architects taking a long-term view to masterplan the development to eventually comprise 27 holes.

Their vision for the Lake's Course remains to be put on the ground in the years to come. **GMé**