

Intelligent, efficient and sustainable use of water on golf courses

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Credit: AI-generated image ([disclaimer](#))

A wireless system capable of optimally irrigating golf courses promises not only better-cared for greens and fairways but substantial savings in water usage as well. In fact, the EU-funded WaterGolf project, which kicked off in January 2013, could end up saving golf courses one third of their annual water budget.

Water is perhaps the single greatest challenge to golf's sustainability. This is why the sector urgently needs to find ways of optimising its [water consumption](#) by increasing efficiency and utilising innovative technologies. This also makes good economic sense, since water costs will most likely rise in the near future.

Indeed, [recreational water](#) takes up a growing percentage of total water use, and golf courses have often been criticised for using excessive amounts of water. This has certainly been the case in drier regions of Europe, such as Portugal and Spain. Furthermore, a recent report from the European Environment Agency (EEA) suggested that Europe has so far concentrated on increasing the supply of water rather than exploring ways to limit its demand.

WaterGolf seeks to address these issues, and represents a considered change in approach to water preservation. By integrating underground sensors capable of measuring underground humidity, salinity and temperature along with surface sensors to measure colour, wind speed and direction, the project will help clubs know exactly when and where they need to apply water to their course.

The system will work by feeding regularly updated measurements via wireless technology into artificial intelligence-driven software. This software will then suggest parameters for irrigation in different areas of the course, taking into consideration other inputs such as 3D golf course mapping, drainage and [weather forecasts](#).

All measurements will be transmitted by means of low [energy consumption](#) ZigBee technology, with a bespoke antenna design. ZigBee is used in applications that require a low data rate, long battery life, and secure networking. The decentralised nature of this wireless ad hoc network makes it suitable for applications where a central node can't be relied upon, such as coverage over a golf course.

The technology can also be used to inform the user of any existing or potentially looming turf diseases, thus helping golf courses to remedy any problems quickly and efficiently. WaterGolf users will also have internet access to experts in the field, should they have any questions.

More information: WATERGOLF www.watergolf-project.com

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