



BULLETIN

2009-10

Irriplan Ltd.

Consulting Engineers

Irrigation ♦ Drainage ♦ Water Resources ♦ Reservoirs

Survey • Feasibility • Planning • Design • Implementation

Water engineering
Water resources
Irrigation design site survey
reservoir design
project management

Irriplan completed projects in 2009

Royal Lytham & St. Anne's Golf Club



Photo courtesy of Mackenzie & Ebert



Prince Edward Playing Fields

A sign of the times; Irriplan were given an extremely tight budget to deliver an irrigation system for a stadium pitch and 6 hectares of training pitches for the Prince Edward Playing Fields in North London on behalf of Football First. Irriplan met the challenge by undertaking a value-engineering exercise during the design process. Phase 1 of the works are now complete.

Glamorgan County Cricket Club

For cricket lovers, 2009 will be remembered as the year England regained The Ashes in spectacular style at The Oval. This was enabled by a resilient effort to secure a draw at the first test at Glamorgan County Cricket Club's SWALEC Stadium in Cardiff, where the Irriplan-designed irrigation system enabled a quick knitting and establishment of the washed turf that was laid over the winter.

Gloucestershire County Cricket Club

Similarly at Gloucestershire County Cricket Club's county ground, Irriplan designed the irrigation system for the pitch renovation on behalf of **TGMS Ltd.** working for the **English Cricket Board**. The irrigation system features a water storage tank buried under the outfield, as there is limited space around the ground.

Irriplan completed projects in 2009 continued

Heythrop Park Resort

The irrigation system at Heythrop Park Resort was completed in the spring and having had a successful grow-in, the course designed by Tom Mackenzie of Mackenzie & Ebert is now open for play.

The system features a multiple-row sprinkler system with part-circle rotors on the perimeter of playing surfaces to reduce water consumption. The system is fed by two separate hydraulic zones to overcome the elevation differential across the site.

6th green, Heythrop Park Resort.
Architect; Tom Mackenzie, Mackenzie & Ebert

Walton Heath Reservoir



Photo courtesy of Charles Briscoe-Knight

Walton Heath

During 2009 construction of the 27,000m³ winter storage reservoir was completed at Walton Heath Golf Club in Surrey. the project was engineered, designed and planned by Irriplan and was constructed by the club's greens staff under Irriplan's direction, with a specialist company brought in to supply and install the liner.

Our congratulations go to Ian McMillan and his staff for having the ambition and enthusiasm to take on the project and for successfully constructing the reservoir to Irriplan's high standards.

gWest, Scotland

Installation was completed during 2009 of the irrigation system at **gWest in Perthshire, Scotland**. The **David McLay Kidd** designed course is part of a 180-bed hotel and 170 plot real-estate development. The site is a natural, rolling heathland with spectacular views of the Ochil hills.

Five Lakes

Phase 1 of the irrigation works were completed during spring of 2009 at **Five Lakes Golf Hotel & Country Club in Essex, England**. The works comprised a new irrigation system for the greens, tees and approaches of the lakes course, with a pipe and network designed to facilitate extension of the system to the fairways in phase 2.

Our congratulations go to Ian McMillan and his staff for having the **ambition and enthusiasm** to take on this self-build project.

Irriplan projects in construction



Irriplan were commissioned by **Hilversumsche Golf Club** to devise a long-term plan to upgrade their irrigation system over a number of phases, whilst maintaining the integrity and functionality of the existing system. Installation of a new main pipe and cable network and a new greens and surrounds sprinkler system is programmed to start in December 2009.

With 9 holes originally designed by **H. Burrows** and later extended to 18 holes by Harry Colt the course is in the Berkshire/Surrey heathland style. More recently the course has been lengthened and benefitted from some renovation and remodelling work by **Kyle Phillips**. The European tour returns to the venue in 2010 for the Dutch open.

5th Hilversumsche Golf Club, Holland

The European tour returns to the venue in 2010 for the Dutch open.



Renovation works at Golfclub Essen-Heidhausen. Architects; Städler Golf Courses

Following a recommendation by **Städler Golf Courses** Irriplan were commissioned to design the new irrigation system for **Golfclub Essen-Heidhausen in Germany**, where Städler Golf Courses have designed and are supervising the substantial renovation and remodelling works.

The course has in excess of 100 metres difference in elevation across the site and so Irriplan have designed an irrigation system with 3 separate and distinct hydraulic zones each with their own pumping plant and pipe network. Phase 1 of the works is being installed over the 2009 winter and comprises irrigation to the greens, greens surrounds, approaches, tees and selected fairways.

2010 Irriplan construction projects

The anticipated golf development boom in Cyprus has failed to materialise over the recent years, the reason... lack of water! In this aspect Minthis Hills (formerly Tsada Golf Club) is very lucky indeed to have its water storage reservoir. Nevertheless water is still at a premium and in 2009 Irriplan undertook a water resources study to investigate the requirements for the proposed development of the resort to irrigate landscape areas and extend coverage on the golf course. Tom Mackenzie has produced a landscape plan utilising plants with low water consumption and by moving from cool-season grasses to Bermuda on the golf course more water has been made available to extend the coverage on parts of the golf course that have suffering for lack of water.

The anticipated golf development boom in Cyprus has failed to materialise in recent years; the reason... lack of water!

14th hole, Minthis Hills, Cyprus.
Architect; Tom Mackenzie, Mackenzie & Ebert



Presented with this challenge Irriplan have designed an eco-drainage system which will be the first of its kind in the UK.

The Peak Resort. Golf architect; Jonathan Gaunt, Gaunt Golf Design.

Irriplan has completed the design of the irrigation, drainage and reservoir for The Peak Resort. The proposed ecological golf and leisure resort near the Peak District National Park in Derbyshire is programmed to start construction in Spring 2010. Irriplan have provided a comprehensive design service for all water-related elements of the proposed 27-hole golf course designed by **Jonathan Gaunt**.

The client's brief is to have the best-drained upland golf course in the UK whilst utilising ecologically-friendly and environmentally-sustainable materials wherever possible. Presented with this challenge Irriplan have designed an eco-drainage system which will be the first of its kind in the UK. Secondary drainage will consist of dual-medium, sand-slits at 1m centres with 4-8mm Lytag® recycled aggregate in the base of the slit for high hydraulic conductivity, topped with an enviro-sand made from recycled, crushed and washed glass.

Irriplan have also designed a dual-purpose reservoir which will act both as a drainage attenuation lake and irrigation storage reservoir, filled with harvested water from the site drainage scheme. The irrigation system features 3 separate hydraulic zones each with distinct pumps and pipe network to overcome the site elevation differential of 78m.

2010 Irriplan construction projects

Hankley Common Golf Club

Hankley Common Golf Club was granted planning permission for the Irriplan designed 29,000m³ irrigation lake and heathland regeneration scheme with works scheduled to be completed over two winters. Planning work has involved our experience of environmental management to ensure a net benefit to the heath and acid grassland of this sensitive area.

Saunton Golf Club

A detailed design has been completed and a planning application submitted on behalf of Saunton Golf Club for a 5,000m³ irrigation balancing reservoir fed from an artesian borehole. This project is the product of three years of Irriplan's hydrological input and environmental negotiation and will provide much needed irrigation water to the two eighteen hole courses on an internationally important habitat site.

Photo courtesy of David McLay Kidd



Herdade da Comporta, Portugal. Architect; David McLay Kidd

It is hoped that permission will be granted for the Herdade De Comporta golf course on the Atlantic coast of Portugal. The **David Kidd**-designed golf course is set in a dune system within a mature but sparse pine forest, with many Umbrella pines. The irrigation system has been designed in the "desert-style" to avoid overthrow into the natural surroundings of the pine forest and reduce water consumption.

Gocay Golf Resort, Turkey. Architects; PGA Design Consulting

Installation of the irrigation system at Gocay Golf Resort in Dalaman, Turkey is programmed to start in Spring 2010. The golf resort designed by **PGA Design Consulting** includes an 18-hole course and 6-hole academy.

The irrigation system at Gocay has been designed as a "desert-style" system with part-circle sprinklers on the perimeter of a multiple-row system to reduce water consumption and also to be appropriate for the golf course that has large sandy waste areas.

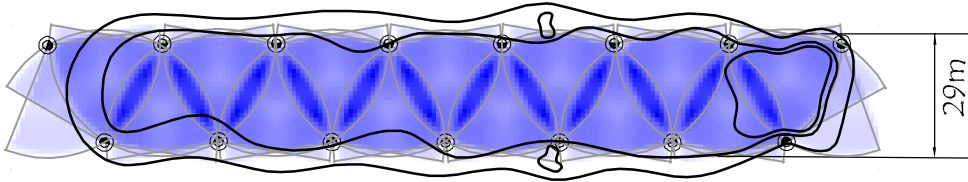
The irrigation system at Gocay has been designed as a "**desert-style**" system.

Photo courtesy of PGA Design Consulting

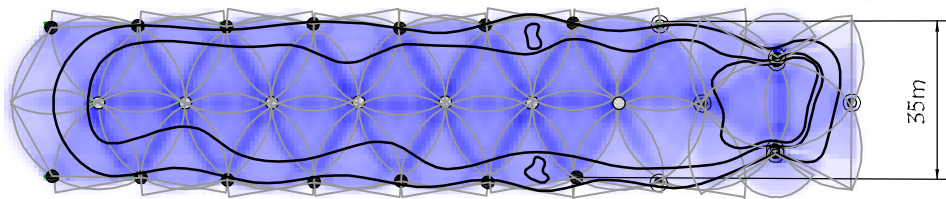


Some thoughts on value engineering

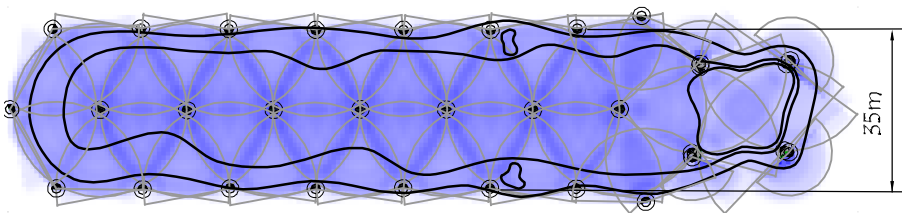
Economy system



Value-engineered system



Best practice system

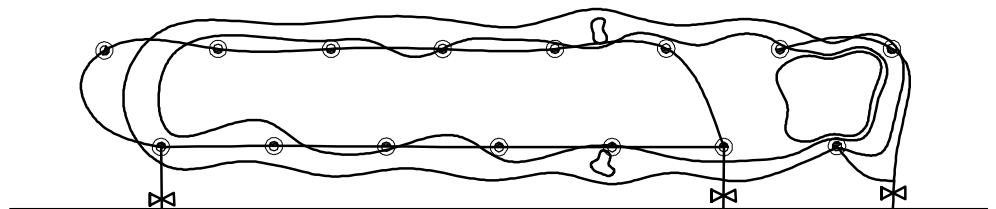


Following this year's financial crisis Irriplan produced a document on "Affordable irrigation for golf: how to save costs and avoid false economies". The article has been well received and is available for download from our website.

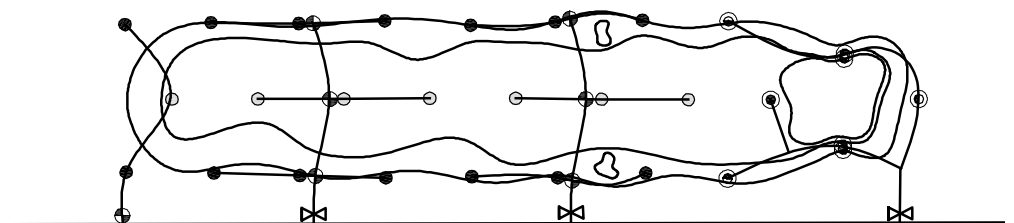
It's worth considering the meaning of the, often misused, word "value-engineering", which is not the same as cost-reduction. Its real meaning, in engineering, is a process to improve the value of something by examination of its function. Improving value can mean either increasing the function of something at no additional cost or reducing the cost of something with no significant loss of function.

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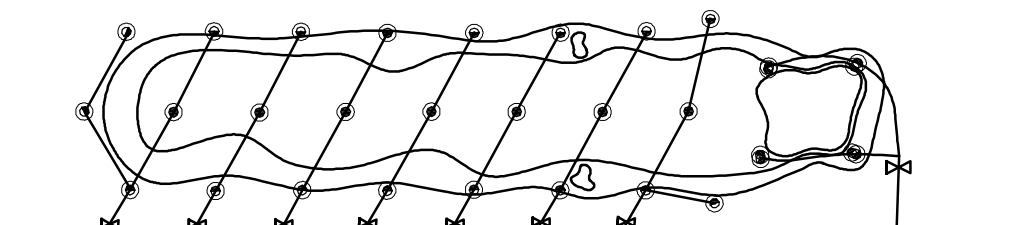
Economy system



Value-engineered system



Best practice system



Independence is a pre-requisite to value-engineering, because only an independent engineer can value a system objectively. A designer working for a manufacturer/supplier will have a conflict of interest, when assessing the value of certain components. This often results in a system that is over-specified and under-engineered. Essentially this is one of the fundamental differences between a mere designer and an engineer.

Irriplan are one of a minority of firms who never do designs or consulting for manufacturers/suppliers. Our independence means that we have the freedom to innovate and be creative in our designs to engineer solutions that are in the best interest of the client, the golf course and the environment (not in the interests of the suppliers).

Irriplan also offers a comprehensive service that includes all soil and water related aspects of a golf course construction including soil survey, site hydrology, water supply, drainage, reservoir and irrigation design. By offering several functions to our service we add value to our involvement. Moreover this comprehensive services means that we can optimise our designs in an integrated fashion.

18th green, St. Andrews Castle Course. Architect; David McLay Kidd



Giles once again enjoyed meeting all the EIGCA Diploma students in the Algarve to give a seminar on water resources and irrigation for golf. It was good to see such an international mix of students not just from Europe but from other continents; testament to the global reach and stature of the EIGCA. Marcus was pleased to attend the EIGCA conference this year in Amsterdam in our capacity as Bronze Industry Partners.

What does Irriplan do?

Since 1994 Irriplan has grown from an irrigation consultancy business into a firm consulting engineers offering technical and design services in all aspects of soil and water engineering for golf course construction and resort development.

Our services include;

Geotechnical site appraisal:

To evaluate the suitability of a site for golf construction and identification of problems and opportunities by investigation of the site geology, geomorphology, soils, hydrology

Detailed site investigation

Geotechnical investigation, hydro-geological investigation, site survey, digital terrain modeling

Sustainable water resources

Feasibility study to determine a water resources strategy for a golf resort including; modeling of resort water balance of supply and use, rain-water harvesting, water recycling, groundwater abstraction

Engineering and design;

water supply, water storage, irrigation & drainage

Procurement

Tender documentation, bills of quantity, tender administration

Implementation

Construction supervision, contract administration, as-built survey and drawings

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