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# Keeping up with irrigation technology

Today's computer systems can cut irrigation chores as never before

Efficiency and economy are the buzz words in irrigation today.

Irrigation technology has improved tremendously in recent years and any golf course with a system that is more than 10 years old should seriously consider updating it to take advantage of these advances.

Today's systems are much more

efficient and waste much less water. Irrigation manufacturers have responded to the demand for conservation by producing sprinkler heads and controllers that conserve not only water, but also time, labour and energy.

Computers incorporated into irrigation systems is one example of the advances. Computer and software capabilities are



continually expanding and computerised control systems can be updated to reflect that.

Things are moving so quickly that some people are calling for a slowdown so that operators can catch up. But greenkeepers who are worried about buying a hightech system need not be concerned. Many are actually getting easier to operate. There's one we saw earlier this year at the

## GREENKEEPERS: Have you booked your place on the

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# No more remembering numbers: just

#### **Water** point

Saudi Arabia's first all-grass golf course opened earlier this year - and at least three more projects are being planned. The first is the Dirab Golf Club, about 30 minutes drive from the Kingdom's capital, Rivadh. As you'd expect with a development where grass is being grown in a desert, irrigation is vital. Dirab has valve-in-head Toro 730 popups, an LTC controller and satellites supported by TENA back-up services. Incidentally, it's too hot to play golf on the course during the day, so it's floodlit and the golfers go out after sunset.

GCSAA's show in Dallas where you can pull up a graphic illustration of one of your greens and activate one of the heads by moving your mouse to it on the screen and clicking. No more remembering numbers.

With this software, the whole irrigation system is digitally scanned into the computer as it is built. This has other advantages: in the future when you need to locate a pipe you can just print out this illustration.

Most of today's products are quite sophisticated, offering a range of features that enhance and simplify water management. A modern central control system can record the irrigation run times of individual stations, project the irrigation usage for a defined period and efficiently manage the flow to reduce wear and tear caused by hydraulic surges.

Here are some of the benefits derived from features available in

most top-of-the-line computer controllers, such as multiple repeat cycling, individual-station programming, flow management and two-way communications.

• Multiple repeat cycles apply the water needed by the turf in short cycles, which helps to reduce runoff and improve infiltration rates.

• Individual station programming is used to evaluate each station and determine the appropriate application rate with consideration of such factors as slope, pH and soil type. An appropriate irrigation schedule that will prevent flooding and runoff is then assigned to the station;

• Flow management also improves efficiency by monitoring the flow throughout the system and ensuring that the volume of water for each flow zone does not exceed its optimum capacity. The goal is to reduce strain on the system by not overloading it and at the same time maximise the pump station's potential;

• Two-way communications give operators assurance that the commands they type into the computer are actually being implemented out on the course. A response from the satellites will appear on the screen to indicate when the system is activated. Some controllers have the additional capability to display a message that relays malfunctions and pinpoints where in the system they occurred.

A weather station, although optional, is another feature that many course managers/head greenkeepers consider to be a necessary addition to the modern setup. Weather stations gather weather information and upload it to the computer controller which uses it to calculate the ET rate. Sensors measure wind speed and direction, air temperature, solar radiation, relative humidity



AD REF

## point at the screen and click INTERNATIONAL OUTLOOK

## Watei

Remember, dirty water kills turf. Actually, it's not the water it is the bacteria-laden mud particles that does the damage. Warning signs are patches of green algae or "bloom" on the surface of your lake or reservoir. If this goes unchecked, it can consume all the available oxygen near the surface. Starved of its lifeline, the algae dies and sinks, repeating the process deeper in the water. If you apply chemicals to solve this problem, remember the water cannot be used for irrigation purposes for some time afterwards.

When was the last time you read the small print in your water abstraction licence? The NRA is tightening up and has imposed some severe penalties on clubs which have failed to observe the rules. "Licences only allow for watering at specific times during the day," warns Robin Hume of TIS Sandbach. For example, if you are licensed to abstract water for, say, 20 minutes each 24 hours, you cannot add another ten or 15 minutes just because there's a heatwave.

and rain. Compatible software enables the user to store daily and historical ET data, monitor and display current weather conditions and graphically display weather parameters.

Not only have the manufacturers loaded the systems with hightech capabilities, but they've made them more accessible, too. Major irrigation manufacturers offer multiple communication options, including hard wire, telephone and radio, or a combination of all three. Wireless communication by radio transmitters appeals to designers who are retro-fitting a course because it eliminates the need to dig trenches for wire.

Another control option becoming more popular is the hand-held radio remote controller. Designed to give a greenkeeper more freedom, a hand-held unit can turn on and off individual stations, groups of stations, start flow management programmes and advance/pause irrigation functions from almost any location on the course

A hand-held radio remote still must access the central computer, but field units also can be computerised to become independent controllers of a group of stations. Computerised field controllers have an added advantage in that they can help alleviate costly damage caused by broken pipes or a defective valve by measuring flow in gallons per minute and reacting to excessive flow. One new system we've seen has an alarm threshold and when the flow exceeds that threshold, the system assesses

## Modern way to take a rain check

How much did it rain? You can now check from the comfort of your office with the battery-operated Rain-O-Matic. Described by distributor Modern Measures as "one of the world's most accurate pluviometers", it comprises two units - the collector gauge and the LCD

readout display. The collector unit is put outdoors, up to 8m away in a convenient position at least 1.5m above the ground, and the LCD display is placed indoors. The collector gauge accumulates rainfall until the equivalent of 1mm is reached, when an electronic signal is transmitted to the LCD dispaly unit via a thin cable included. The collector automatically empties after each mm is signalled. Price is £33.84. For further details call 01753 889831.



each individual valve to detect the faulty one. When it has isolated the bad valve, it will shut it off (but the rest of the system will remain running), report the incident to the central computer and then notify the greenkeeper of what has occurred.

But no matter how much you fine-tune the controller or the original design, how you place your heads and how well they distribute the water will have the most impact on your system's effectiveness.

Uniformity is the goal of a good head design and that's not always easy to achieve. But, again, tremendous improvements have been made in recent years and if vour budget doesn't stretch to a new controller your irrigation system may be improved by installing the latest heads.

• Parts of this article are reprinted by permission of Golf Course Management, official publication of the GCSAA.

An £80million golf complex is being built in east Germany, in the grounds of a hunting lodge where the East German defence minister used to live... The Golfpark Schloss Wilkendorf, about 30 miles east of Berlin, includes an 18hole championship course designed by Sandy Lyle. another 18-hole course, a PGA teaching academy layout, a driving range and three practice holes for beginners. Jointly financed by German and Swiss investors, it is being built by British firm Southern Golf and is due to open next June.

First they blamed the greenkeepers for their missing balls - the grass was too high! Then the golfers at Virvik in Finland thought it might be the ghost of a one-legged farmer who was spiriting away up to 40 balls a day. Then they discovered it was actually a fox making off with thousands of pounds worth of balls. A big search is now on to find the foxhole!

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## NEW PRODUCTS



## Jacobsen lays claim to lightest greensmower on market

Jacobsen has unveiled some exciting developments, including new power for its GreensKings and a new truck that will compete against compact tractors.

We're all familiar with Greens-Kings in their Kubota diesel or Kohler engined form, but now there is a GreensKing IV with a Briggs and Stratton Vanguard engine. The result, according to Jacobsen, is the quietest and lightest powered greens triplex.

Features of this £13,480 machine include an 11-blade unit that gives 220 cuts per metre, units that steer to allow follow into all the undulations of a green, a roller base that is 1in shorter than rival machines when the groomer is fitted, a Turfgroomer with intersecting knife and roller and spiral pattern to the blade reel, individual reel control to give handmower-style finish by turning off the centre unit, and variable speed backlapping.

Jacobsen claim the Greens-King IV Vanguard is the lightest greensmower on the market.

Another new product for greens is the 418 Pedestrian Greensmower. This unit is pictured with the existing 422 PGM and the new 426 greensmower for larger areas and tees. (The numbers refer to horsepower and width of cut, eg the 418 has a 4hp Honda engine and an 18in cut.)

The 418 has been designed for very undulating greens and has a clip rate of 253 cuts per metre. Prices start at £3,850.

Jacobsen's other new product is the Workhorse SV (systems vehicle), a top-of-the-line fullspec truckster with tractor power and robustness and truckster manoeuvrability. Two models are available, the SV3422 petrol and the SV2322 diesel. As with all Jacobsen products, the first two numbers give the product horsepower and, with trucks, the second pair of numbers give the truck's total payload, eg 2,200 lbs.

The 3422's power comes from a front-mounted 34hp, four-cylinder Ford petrol engine while the 2322 uses a 23hp, three-cylinder Kubota diesel engine.

Features include an 8-speed gearbox, allowing greenkeepers to mount a full-width topdresser with 18 cu ft capacity, 200 gallon sprayer, or full-width slitter. It will tow a 3 drag gang mower on any course and a 5 drag gang mower on a flattish course, says Jacobsen. But they reckon its best feature is its manoeuvrability – rated as 30in internal radius between rear wheels and an external radius of 17in. Prices start at £13,230.



Sisis has upgraded its Hydromain tractor unit to 32hp with a Kubota diesel engine and added a four-wheel drive model to the range.

■ H Pattisson & Co Ltd has a new driving range brochure, featuring products that offer "durability and reliability at a competitive price." Turf grass scientists created a term to describe the unique mechanism they identified whilst examining the performance of *Netlon Advanced Turf* plots.

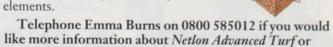
## Self-cultivation

Self'-cultiva'tion (n. the effect of small polypropylene mesh pieces as they flex within a free-draining rootzone material to create and maintain voids and to resist soil compaction. The mechanism takes place as the surface is compressed during play, maintenance or by other activities.

#### Maintaining health and minimising damage

You will not find the term selfcultivation in any dictionaries at the moment, but you will find evidence of its effect on tees, greens

and paths. There will be deeper root penetration, higher infiltration, greater divot resistance and faster recovery rates due to the stability and root anchoring provided by the

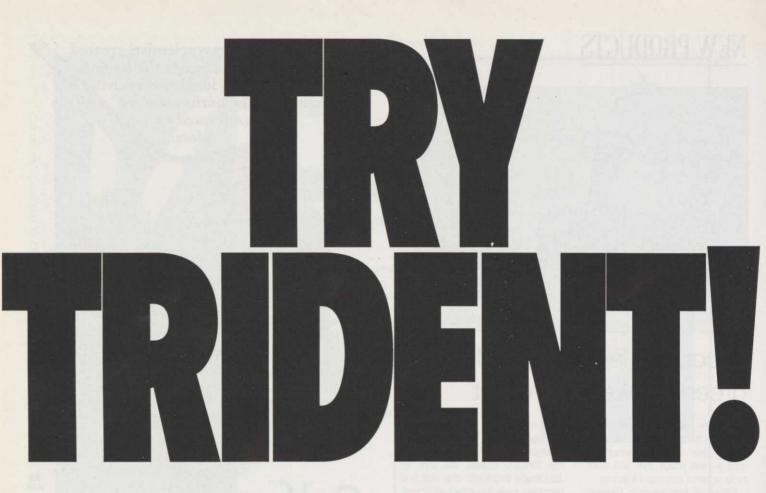


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# Next stop America

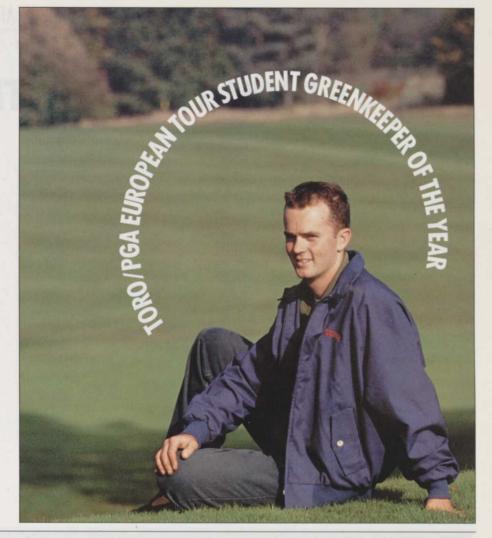
**O**riginally Euan Grant went to university because he wanted to manage a gym or leisure centre. He could end up managing something much more impressive – a championship golf course.

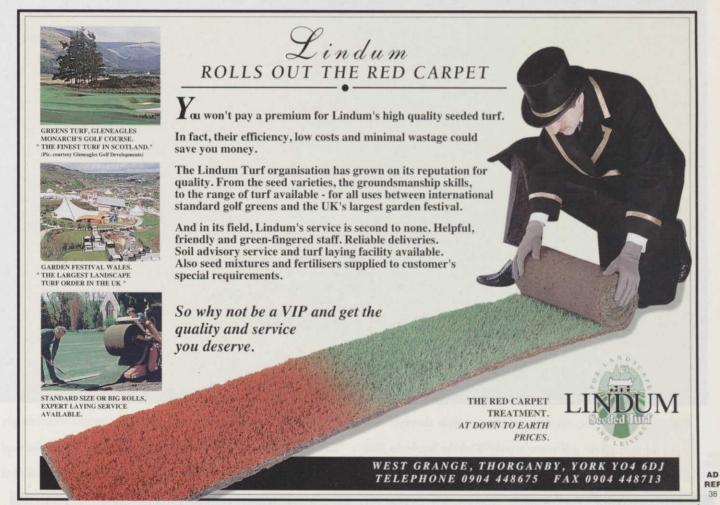
Euan, 24, pictured right, is currently working at Effingham Golf Club, Surrey. He has been there two years and says he is very lucky: "They are a very forward thinking club regarding education, sending me to Plumpton College to study City and Guilds phase II greenkeeping and sports turf management, PA1 and PA2, plus basic health and safety seminars, and an irrigation course at Watermation."

His parents and friends were surprised, to say the least, when Euan, who has a honours degree in sport and leisure management from the University of Leeds, said he wanted to be a greenkeeper.

But it's a job he loves. "I look forward to each day and each new challenge," he says. And he has big ambitions. "I want to manage a championship course or become an agronomist to the European Tour."

He is definitely on the right tracks and his





# Judge's praise for tomorrow's course

career has just received a major shot in the arm. He has been named as the Toro/PGA European Tour Student Greenkeeper of the Year. His prize is a Toro scholarship – a sixweek residential turf management study course at the University of Massachussetts in the USA this winter, plus visits to Toro's headquarters in Minneapolis and the Toro Irrigation Division in California, plus, if there is time, a trip to the GCSAA's show in San Francisco.

Euan is very excited about his prize, but is quick to praise his club. "They have been brilliant," he says. Brilliant is an understatement. Effingham Golf Club have promoted Euan to first assistant and will pay him this increased wage for the two months he is away, even though they know they may lose him next summer when he seeks to move up the ladder to a deputy's post.

His course manager, Peter Broadbent, says Effingham GC believes in education and is very proud of Euan's success.

#### **Hard decision**

Judging panels always say choosing a winner was difficult because of the high calibre of the

#### THE FIVE JUDGES

- Graham Dale, managing director of Lely (UK) Ltd
- Ted Riley, Toro sales and marketing director for Europe
- Bruce Jamieson, PGA European Tour's director of agronomy
- Neil Thomas, executive director of BIGGA Dean Cleaver, chairman of BIGGA's education sub-committee

#### THE OTHER REGIONAL WINNERS

- Simon Heppenstall, from the Outlane Golf Club, Huddersfield
- Vincent Lee from the Great Barr Golf Club, Birmingham
- Ken Moore from Shandon Park, Northern Ireland
- Stephen Pellatt from Lee-on-Solent Golf Club, Hampshire

candidates. Having sat in on some of the interviews at Aldwark Manor, I know how difficult a decision the five judges had.

Graham Dale, managing director of Toro

distributors Lely (UK) Ltd, believes all seven of the regional winners who were invited to the national final will one day go on to make excellent course managers or head greenkeepers.

But, in the end, they had to pick an overall winner and two runners-up. The runners-up were Margeir Vilhjalmsson, who is currently working at Gleneagles on their Excellence in Golf Award Scheme (see page 3), and Byron Thomas, the first assistant at Morlais Castle Golf Club near Merthyr Tydfil.

Their prize is provided by the PGA European Tour. Margeir and Byron will attend the Tour's greenkeeping conference in La Manga in January and then help out at two PGA events, one in the UK and one on the Continent. "They will help with the preparation of the course each morning and evening," said Bruce Jamieson, the PGA European Tour's director of agronomy.

They are both delighted with their prize. "I'm looking forward to working with the European Tour, it's going to be a good experience," said Byron, who completed City and Guilds phases I and II in greenkeeping and sports turf managment at Pencoed while



Whatever time of year, this busy greenkeeper needs the right tools behind him to keep the golf course superb. With the Workman 3000 Series which boasts a large flexible carrying capacity, four-wheel

stability and three-wheel manoeuvrability, that's precisely what he's got. Toro attachments or those of our keenest rival can be mid or rear mounted in almost any combination. It's another example of how we've worked to