



## Greenkeeper Education and Development Fund

**BIGGA GOLDEN KEY and SILVER KEY MEMBERSHIP**

Unlock the doors to progress through BIGGA's Education and Development Fund - the key to a great future for greenkeepers, golf clubs and the game of golf.

Golden and Silver Key Membership is available to both companies and individuals.

For details, please contact Ken Richardson on 01347 833800 or via [ken@bigga.co.uk](mailto:ken@bigga.co.uk)

### Golden Key Supporters

**Kubota**



### Golden Key Company Members

Company	Tel: Head Office
John Deere Ltd	01949 860491
Kubota (UK) Ltd	01844 214500
PGA European Tour	01344 842881
Rigby Taylor Ltd	01204 677777
Scotts UK Professional	01473 830492
Ransomes Jacobsen Ltd	01473 270000
The Toro Company/Lely UK	01480 226800

### Golden Key Individual Members

J H Fry; J H Greasley; WJ Rogers; David S Robinson; Stuart Townsend; Andy Campbell MG, CGCS; Chris Yeaman; Iain A MacLeod; Bruce Cruickshank; John Crawford; Stuart Cruickshank; Frank Newberry; Terence Welch.

### Silver Key Supporters



### Silver Key Company Members

Company	Tel: Head Office
Bernhard and Company Ltd	01788 811600
Ernest Doe & Sons	01245 380311
Gem Professional	01254 356611
General Legal Protection Ltd	01904 611600
Hayter Ltd	01279 723444
Heath Lambert Group	0113 246 1313
RainBird	01273 891326
Symbio	01372 456101
Syngenta Professional Products	0041 613 233 028
TurfTrax Group Ltd	01722 434000

### Silver Key Individual Members

Clive A Archer; Douglas G Duguid; Robert Maibusch MG; Elliott R Small; Steven Tierney; Richard Lawrence; Clive Osgood; Roger Barker; David Robinson; Richard Stillwell; Stephen Dixon; Ian Semple; Paul Jenkins; Robert Hogarth; R Steele; Lee Relf; Raymond Warrender; Nichollas Gray; Trevor Smith; Iain Barr; Richard McGlynn; Alex McCombie; Paul Murphy; Tom Smith.

# Education Update



Ken Richardson, in the Education Department, plans ahead for Regional Training and BIGGA's National Competitions.

May has become the planning month in the Education and Training Department when Sami and I look forward to the autumn and winter education and training programme.

## Continue to Learn - Regional Training

Regional training has proved to be even more popular this year, using over 50% of the Education and Development Fund. As courses get more expensive to run and the Fund's income remains static, we have had difficulty providing all of the training requested by Regions and Sections.

The recent Board of Management Meeting, held in March, and the Education Sub Committee, held in April, decided that the Education and Development Fund should not be used to subsidise training courses that were required by law and that the subsidy for all courses, Seminars and Conferences would be a maximum of £500 per day. Unfortunately, this means that some courses, especially those with a limited number of delegates, e.g. Chainsaw Course, would be a lot more expensive but they should still cost less than the same courses offered by other training providers.

Therefore as from October 2005, the cost of Regional Training Courses will be:

### TWO-DAY MANAGEMENT TRAINING COURSES

£160 + VAT (£188)

- Essential Management Skills
- Next Steps in Management Skills
- Communicating with Committees
- The New Supervisor
- Project Management
- Budgets and Finance
- Management Skills for Head Greenkeepers and Course Managers

### TWO-DAY TECHNICAL COURSES

£200 + VAT (£235.00)

- Health and Safety Awareness
- Tractor Driving
- Managing Health and Safety

### TWO-DAY TECHNICAL COURSES REQUIRED BY LAW

£325 + VAT (£381.88)

- Chainsaw Maintenance and Crosscutting
- First Aid Refresher

### TWO-DAY COMPUTER SKILLS COURSE

£150 + VAT (£176.25)

- Basic Computer Skills

### ONE-DAY MANAGEMENT COURSE

£80 + VAT (£94)

- Presenting a Professional Image

### ONE-DAY TECHNICAL COURSES

£100 + VAT (£117.50)

- Woodland Management
- Agronomy and Soil Science
- Risk Assessments
- Integrated Pest Management
- All Terrain Vehicle Driving
- COSHH Assessments
- Grass Identification

### ONE-DAY TECHNICAL COURSES REQUIRED BY LAW

£150 + VAT (£176.25)

- Emergency First Aid
- Abrasive Wheels

Each course includes high class tuition plus lunch and refreshments on each day.

We are now beginning to plan for this autumn and if you want us to arrange education and training courses in your Region/Section, now is the time to put in your request.

The information we require for us to organise a course on your behalf is:

1. Course Subject, e.g. Essential Management Skills, Tractor Driving, Managing of Health and Safety etc.
2. A suitable location for training, e.g. a Golf Club.
3. A guarantee to fill the course.

For further information on the types of course available, the cost of courses and the numbers required for each course please contact Sami on 01347 833800 or [sami@bigga.co.uk](mailto:sami@bigga.co.uk), by 30 June 2005.

Entries have been flooding in for this year's BIGGA Golf Environment Competition, sponsored by Scotts UK Professional, Syngenta Professional Products, Waste2Water and WRAP. There is still time to request an application form, so long as you complete and return it before the June 24 deadline.



**Golf Environment Competition**

There is a range of prizes from £500 for the best new entry up to £2500 and a Scotts Weather Station for the National Winner. So if you are just starting to look at environmental management or if you have had a plan in place for some time, why not enter and see if you could join the winners in Harrogate next January.

## TORO Student of the Year Competition

The deadline for the TORO Student of the Year Award 2005 is Friday May 6. Judging will commence, in Edinburgh, on Monday July 4.

The criteria for the Award states that a student must be on a N/SVQ Level 2 or 3 course or on a National Certificate or Diploma course and must be nominated by their Senior Greenkeeping Lecturer. If you wish to receive further details and an application form please contact BIGGA HOUSE as soon as possible.





## Are you managing your Health and Safety using a Maintenance Plan?

### Tutorial Eleven

How many of us have had what we call a near miss, an incident where there is potential for injury but none occurs? How many of us report the near miss to the Manager and the club investigates it?

I recently visited a club where a vehicle engine was left running while a member of the green staff jumped out the cab to collect a piece of equipment. The vehicle moved slightly knocking the member of green staff to the floor but he was uninjured. The member of green staff carried on as usual without reporting the incident and felt nothing more of it.

#### What went wrong at the club?

- The member of green staff was unaware of a near miss definition.
- The member of green staff had no written or verbal instructions on reporting near misses.
- The Health and Safety policy made no reference to near misses.
- The club management were unaware of learning lessons or carrying out investigations.
- Procedures and training should have been put in place to avoid this near miss happening again where the member of staff may have been injured.

Good health and safety management is about knowing the daily, weekly, monthly and yearly requirements of the club, and ensuring you have in place a system for achieving all of the requirements. A lot is written nowadays about managing health and safety but very little is written as to why and the good reasons for it. I will explain.

Good health and safety management is all about preventing accidents and illness to employees, golfers and visitors to your establishment. Health and safety

management is not about generating endless heaps of paper and endless amounts of checklists that will put you off the real tasks in hand.

A good Maintenance plan is presently operated by many clubs and has taken much of the burden of health and safety work from the club and Secretary/Head Greenkeeper. The plan does not and will not remove any of the responsibility but it does ensure that work gets completed and information stays right up to date.

#### The plan works in two main stages:

- To ensure the club is in full compliance with UK and EU Legislation.
- To ensure all documentation, procedures, risk assessments and systems remain up to date.

Developing your own system or subscribing to a proprietary Maintenance Plan is the easiest way of ensuring your club stays fully compliant with the laws and that Health and Safety becomes a core value in your club operations.

#### A Maintenance Plan will encompass the following key elements:

- Health and Safety Audit annually.
- Update to the Health and Safety Policy annually.
- Updates of the Risk Assessments regularly.
- Regular Legislation Update notifications.
- Annually updates of the Safe Working Practices/Procedures.

To find out more please look at [www.safegolfplan.com](http://www.safegolfplan.com) or call us on 0208 905 7552; email: [info@haztekinternational.com](mailto:info@haztekinternational.com)

# Tip of the Month

Phillip Helmn MG

Course Manager - Overstone Park Resorts



## COMMUNICATION... COMMUNICATION... COMMUNICATION...

In much the same vein as when thinking of buying a home, 'location' is of paramount importance and I believe the same importance should be given to communication in golf course management.

I realise that there are many Managers already using two way radios, I apologise for spouting on about something you already know. For Managers that haven't thought of this form of communication it is well worth considering.

The benefits of being in complete contact with your staff at all times is immeasurable. There are also Health and Safety issues, such as lone workers needing to be able to contact someone in case of an accident. Maybe a machine has broken down and is stranded out on the golf course and

a simple call on the radio can summon the mechanic to the rescue. Radios are a useful tool to monitor progress of specific tasks out on the course without the need to be there in person.

Communication between your staff helps in a more productive and efficient work force (don't worry you can monitor all conversations). The list goes on and on.

No annual licences are needed for most models, they can be bought from most catalogue outlets and the one off cost is reasonable too. For just £50 you can buy a pair of two way radios with battery chargers and you're all set to go.

I am convinced that once you start to use them you won't believe how you managed without them before.

Do you have a tip that has helped you in your day-to-day work on the golf course? If so, why not share it with other greenkeepers. Please send any tips you feel would benefit your fellow readers to us either by post at BIGGA HOUSE or by email to [gareth@bigga.co.uk](mailto:gareth@bigga.co.uk).



Rachael and Gemma from Membership Services would like to welcome 82 new members to the Association.

# Membership Update



## USEFUL CONTACT NUMBERS:

Please be ready to quote your membership number when calling.

### GREENKEEPER MEMBERS ONLY

Free Legal Helpline ..... 0800 068 1893  
 Personal Accident Insurance..... 01277 251000  
 (Ask for Ryan Carter, Ira Mullish or Michaela Edwards)

### ALL MEMBERS

Privilege Platinum Card .....0800 587 8800  
 LEX Personal Car Leasing .....0800 419 930  
 Quote: 'Staffselect - BIGGA'  
 Heath Lambert Affinity Partnerships  
 Insurance Quotation Service .....01603 828255  
 Arco Hotline .....01482 611773  
 20% of Selected Products  
 Europ Assistance .....01603 828255  
 BIGGA Merchandise & Library .....01347 833800  
 Education and Training Advice .....01347 833800  
 Membership Queries .....01347 833800  
 BIGGA Website .....www.bigga.org.uk

## COURTESY GOLF

The majority of members do behave sensibly when seeking courtesy golf however to avoid any confusion here is a reminder of our guidelines:



- Only those with FULL GREENKEEPER membership should seek courtesy golf.
- Courtesy golf is only given at the discretion of the individual golf club and is not an automatic benefit of membership.
- Members wishing to seek courtesy golf at a club should contact the club at least 24 hours in advance of wishing to play.
- On arrival at the club, members should report to the Secretary/Pro Shop and follow normal procedures for playing golf.
- Members should always produce a valid membership card as proof of status to the club.
- Members should make a point of thanking the club for their courtesy on completion of their round of golf.
- Members should not seek courtesy golf at any one golf club more than twice per year.

Golf Clubs wishing to verify membership or requiring further details should contact BIGGA on 01347 833800.

## HAVE YOU LOST YOUR SECTION FIXTURE LIST?



With the Section Social calendars in full swing make sure you don't miss the latest events by going to the BIGGA website, [www.bigga.org.uk](http://www.bigga.org.uk). Look up the News and Events section and you will find a comprehensive list of all the events taking place in your area and across the country along with details of who to contact if you wish to attend.

The pages are continually updated and if anyone has an event they would like to highlight then please contact Gareth on 01347 833800. If you don't have access to the internet then don't forget to read your Section Notes in Around the Green at the back of this magazine which will have details of any up and coming golf days or seminars.

## BIGGA welcomes...

### SCOTTISH REGION

Kenneth Gillespie, East  
 Michael McLaughlin, West  
 Vincent McNally, West  
 Stuart Muir, Central  
 Paul Sheehan, West  
 Ian Smith, Ayrshire  
 Craig Smith, North  
 Innes Tait, Ayrshire  
 Michael Thomson, North  
 Dennis Williams, East  
 Steven Wilson, Ayrshire

### NORTHERN REGION

Edward Ainsworth, North West  
 Anthony Dean, North West  
 Christopher Emsley, Northern  
 Jim Fitzgerald, North West

Stuart Fricker, Sheffield  
 Daniel Gildea, North West  
 Ben Hardwick, Sheffield  
 Dale Harrison, Northern  
 Ben Hogg, North East  
 Sam Hunter, North West  
 Michael Joyce, Sheffield  
 Steven Mason, North West  
 Brian Mccrae, North West  
 Wayne Oldfield, North Wales  
 Tudor Owen, North Wales  
 Steven Robinson, Sheffield  
 John Sellars, Sheffield  
 Billy Thompson, North West  
 Davey Whitehead, Northern

### MIDLAND REGION

Robert Bage, Mid Anglia  
 Jonathan Barr, East Midland  
 Scott Beaven, BB&O  
 Mark Carter, East Midland  
 Stephen Daniel, East Midland  
 Thomas Donovan, BB&O  
 Michael Fahy, Mid Anglia  
 Jack Fairman, East of England  
 Michael Ginger, BB&O  
 Adam Henley, BB&O  
 Frederick Huckin, BB&O  
 Christopher Jones, Mid Anglia  
 Paul Kirwin, BB&O  
 Jonathan Mitchell, Mid Anglia  
 Matthew Newton, Mid Anglia  
 Daniel Randall, Mid Anglia  
 David Smith, East Midland  
 Duncan Smith, Mid Anglia

### SOUTH EAST REGION

Rodney Cassar, Surrey  
 David Driver, East Anglia  
 John Eyre, Sussex  
 Nick Gates, Essex  
 Jacob Jary, Essex  
 Martyn Shacklock, Surrey  
 Alex Stow, Kent  
 Michael Weston, Surrey

### SOUTH WEST/WALES REGION

Daniel Bint, South West  
 Graham Brookes, South Coast  
 Matt Harbottle, South West  
 Anthony Horne, South Wales  
 James Mcentee, South Coast  
 Zeff Neeson, South Coast  
 Brian Pitman, South Coast

Timothy Soffe, South West  
 Calvin Thomas, South Wales  
 Colin Thomas, South Wales

### NORTHERN IRELAND

Gerard Hughes, N Ireland  
 William McCutcheon, N Ireland

### SILVER KEY MEMBERS

Simon Elsworth, East Anglia  
 Bob Richardson, East Anglia  
 Pat Ryan, East Anglia

### CORPORATE MEMBER

Peter Marshall, Northern

### STUDENT MEMBERS

Micah Woods, USA  
 John Millar, East Scotland  
 Greg Haddow, Central Scotland  
 David Murray, East Scotland

### INTERNATIONAL MEMBERS

Mette Glarborg, Denmark  
 Thomas Bailey, USA  
 Robert Ehrler, USA  
 Alberto Quevedo, CGCS, USA

### ASSOCIATE MEMBERS

Paul Long, South Wales  
 Brian Pierson, South Coast

## MAY'S MEMBERSHIP DRAW WINNER

Just introduce one or more new greenkeeping members to BIGGA and your name will be placed into a draw to win a DIGITAL FM SCAN RADIO/ALARM, with a detachable speaker and headphones. Our congratulations go to Patrick Murphy of Shipley Golf Club.





# Course Feature



▲ Adrian Harris

## Water, Water Everywhere...

Scott MacCallum meets Adrian Harris, Course Manager at Hellidon Lakes, where water plays just as big a role as grass in the course management.

If you ever wander into the Pro Shop and see the man whose name adorns the side of the Audi 3 series parked in its own space in the car park indulging in a power nap with a satisfied grin on his face here's what I think he might be dreaming about.

Your man has disappeared off into a world where his pro shop, miles from the nearest golf discount store, is well stocked and well positioned near a 1st tee which is booked solid every day from 6.30am. He is visualising the opening tee shot faced by his members and all he can see is water. Yes, the opening tee shot involves a 300 yard carry over water in every direction! And the reason he's smiling? He's just thinking about how much he's going to make on golf ball sales.

I head off into this flight of fancy after a visit to Hellidon Lakes Hotel and Golf Club, near Daventry, which boasts 17 lakes in total, many of them in play.

And although it isn't the 1st hole the 18th was almost a Professional's dream hole. However, Course Manager Adrian Harris has recently made amendments to ensure fewer Titleists and Dunlop 65s find a watery grave. Until then a 180 yard carry over the largest of these lakes, invariably into the prevailing wind was required before you could two putt and head off to the 19th for a little refreshment.

The alternative was to treat the short par-4 as a par-6 or par-7 and play carefully round three sides of the lake.

"If you could carry the ball 180 to 190 yards into a howling gale then you were ok," said Adrian, employing his droll Midland sense of humour to good effect.

"The only other option was to go around the lake. In golfing terms it wasn't really a hole."

Hellidon Lakes is owned by hotel group Marston who bought the complex five years ago having previously been privately developed.

"A retired businessman bought the land for somewhere to walk the dog and a friend suggested that he should build a golf course on it," explained Adrian.

That was in the mid '80s and the original layout was designed by David Snell, who utilised the land to good effect to produce an excellent undulating test of golf and built the many lakes which provide the club with its name.

"It's a good challenging golf course, not particularly long at around 6100 yards, but if you take on some of the shots you can be rewarded while there is also opportunity for the less able or more conservative to play the course," said the 40 year-old six handicapper.

Unlike Course Managers at proprietary owned or members' golf clubs where the course is the number one priority, a Course Manager at a hotel owned golf course often has to accept that the core business is the hotel and that focus is not always on the golf course.



▲ The Hellidon Lakes team

This can be frustrating but Adrian has turned it to his advantage and his free hand and ability to make strides with minimal investment is much to be admired.

"I've always wanted a golf course where I can work and, within reason, do what I want and here I'm able to put my own little touches to it and people either like them or not. Luckily, people have enjoyed what I've done so far."

That 18th hole with the Kamikaze carry is on such example.

"When I arrived and first saw the old 18th I thought that it was something that we could do a lot better. I discussed it with members and we had committee meetings and walked around the course. I told them what I thought and they told me what they thought and we came to the joint conclusion that something had to be done as it was an unfair golf hole," said Adrian as we sat in the attractive room which acts as the clubhouse in the hotel overlooking the course.

"I produced lots of drawings which I presented to the General Manager of the hotel and he then took them to the Chairman of the Hotel Branch. After I was given outline approval I went out to get some prices and cost the project."

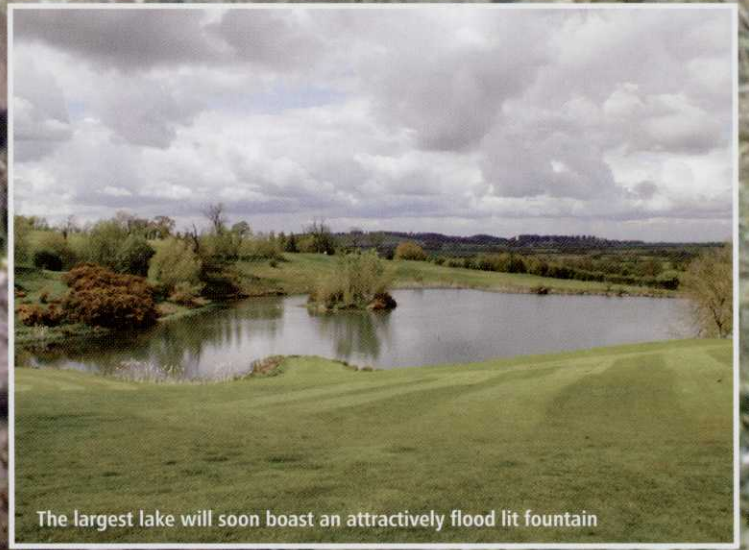
Wherever possible Adrian and his team, he has seven including a mechanic and a gardener for the 27 hole complex, do work in-house as not only is it cost effective but it is an ideal way to motivate the team.

"I always have a winter project and I get the team together to discuss it and share ideas. If the guys put in their own thoughts and they are adopted they feel valued and everyone feels they have ownership of the project."

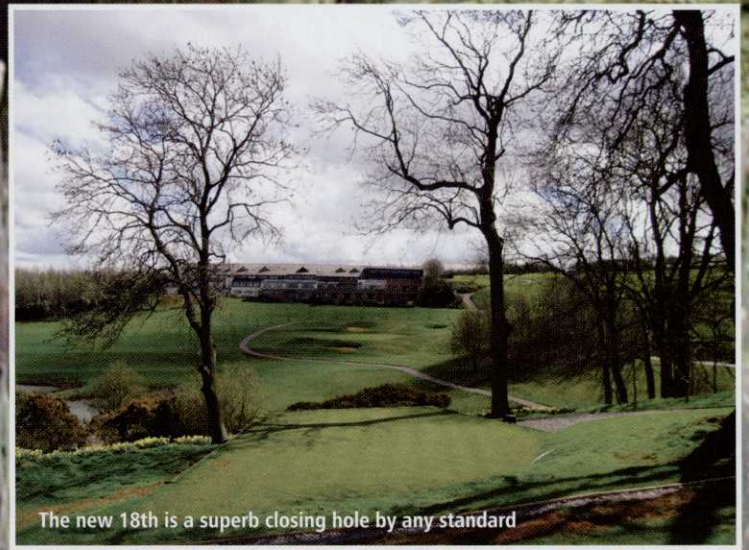




The 7th is a testing par 4 with a small lake to catch the errant drive



The largest lake will soon boast an attractively flood lit fountain



The new 18th is a superb closing hole by any standard



Distributors required  
around UK

# To create a masterpiece...

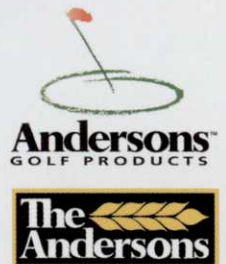
It takes special talent to make a golf course a thing of beauty. It takes determination, technical skill - and the creative touch of an artist. It also helps to have quality turf fertilizers and that's what you get from Andersons™. TurfCare Solutions offers an expanded line of Andersons™ turf fertilizers that provide exceptional quality, consistency and performance. TurfCare Solutions also offers the services of its highly experienced technical personnel. Above all TurfCare and Andersons™ share your passion for your profession - and your art.



**TurfCare Solutions - 01425 472102**  
contact:  
**Richard Blizzard - 07789 655784**  
**Lee Moffat - 07795 341973**  
**Kyle Irwin - 07795 342026(N. Ireland)**

**TurfCare**

[solutions@turfcaregroup.com](mailto:solutions@turfcaregroup.com)  
[www.turfcaregroup.com](http://www.turfcaregroup.com)



# AstaLa Vista

**A New Selective Herbicide**

Astalavista can be used for the control of a wide range of broad-leaved weeds in established amenity turf. It's unique formulation acts quickly, giving a high level of control on problem weeds such as Speedwell, Clover and Yarrow plus many others.



Astalavista contains 56g (4.7% w/w) Ioxynil, 56g (4.7% w/w) Bromoxynil as Octanoate Esters and Potassium Salts and 224g (18.7%) Mecoprop-P as Potassium Salts per litre.

Dispose Of Chemicals Safely. Always read the label. Use Pesticides Safely.

Sherriff Amenity  
The Pines, Fordham Road  
Newmarket, Suffolk. CB8 7LG  
Tel. 01638 721888. Fax 01638 721815  
[www.sherriff-amenity.com](http://www.sherriff-amenity.com)

# Sherriff Amenity



## Course Feature

The new 18th is a much improved hole offering those arriving on the tee with a well put together scorecard an opportunity of finishing with a birdie but also requiring to steel themselves for a 150 to 170 yard par-3 which takes out much of the carry but keeps the fear of a watery end in the back of the mind.

As a result of the excellent work done on the 18th it has quickly become the course's signature hole but like many good courses there are several others which vie for the status not least the 14th, a par-4 played for an elevated tee with one of the ubiquitous lakes guarding the left half of the landing area and a green surrounded by trees.

"It's a great hole. The lake is always in your mind but big hitters can clear it and open up the green if they are feeling brave and get an accurate one away."

The team has been augmented by two recent arrivals from The Belfry and the RAC Club in Epsom, Surrey, who have brought in a lot of knowledge to the team although they are having to get used to the fact that if something is needed you can't just buy it in.

"You have to find a way of ensuring we stay within budget and if that means buying just enough fertiliser to do the job and no more or ensuring that we stage delivery so we don't pay additional cost up front."

The course has been much changed since it first opened, sometimes due to the growth of the four star hotel - which resulted in the 9th hole being totally relocated and rebuilt - and partly through Adrian's constant desire to tweak and improve.

The 17th is another hole which has been totally changed and it is the fairway of this new hole that is causing Adrian and his team some problems.

They built the fairway up with soil from the hotel development but it was totally devoid of nutrients.



▲ The Hellidon Lakes land was originally purchased as a dog walking site by a retired business man

"Try and get grass to grow on that and it's a struggle. We mole drained to get some air into the sub soil every year and spiked it and vertidraind it to get some movement and put in some turf humus to give it a bit of body and we are still going down that path now," he explained.

But as much as he spends time on the turf side of Hellidon Lakes the water requires just as much attention.

"With so many lakes and with around 60% of them in play in one way or another they are an important part of the course and it's great because they do attract quite a bit of wildlife to the course including water voles and barnacle geese which are quite rare for this time of year."

From an aesthetic perspective Adrian does make every effort to ensure that the lakes are as interesting as possible... but always with an eye on the budget.

"I deal with a company called SJS, at Milton Keynes, who start up and shut down my irrigation system each season and carry out any repairs we

can't do ourselves and I often speak with them for advice on water features.

"For example we have a fountain in our main lake which is just the relief valve for our irrigation so as the irrigation is not on during the day we can have a big fountain. I'm going to get a diffuser on it to make it more attractive and perhaps add some lights to it as well," he said, adding that he may have to get another pump installed so that can keep the fountain working in the evenings for the benefit of the hotel guests who take to the balcony overlooking the course.

It's another example of making a lot out of a little.

Another project in the offing is the addition of a waterfall from the small lake which feeds the largest one.

"Currently there is a stream there but I'm going to extend it and use some of the excellent local stone we have on site. Eventually we're also going to

put another waterfall in on the lake at the 12th hole," said Adrian, who also mentioned that there was a 40 foot waterfall in the grounds of the hotel which is often used as a backdrop for wedding photography.

"The way I look at a project is from the stand point of how I'm going to improve the hole or improve the area. It may be that I won't be able to do it this year or next but I've got it in my mind to do and when the time comes we'll look at it again and assess whether we can do it together as a team or have to bring in contractors."

What the members of Hellidon Lakes do know however is that whatever resources he's got Adrian will make the most of them, even if it does mean getting his feet wet occasionally. He probably collects a few of those damp golf balls at the same time.



▲ Adrian inspects the site for his new waterfall

### MACHINERY INVENTORY

Toro 6500D  
Toro 3500D  
Toro 3100S Sidewinder  
Toro 3100 Petrol Mower  
Toro 3200D Greens Mower  
John Deere 6x4 Gator  
2 John Deere 2653A Triple Mowers  
Wiedemann 1.2m Vertidrain  
Sisis 2m Fairway Slitter  
Sisis 1m Greens & Tees Slitter  
Sisis 1.5m Universal Spiker Javelin  
Sisis 600 Rotorake  
Sisis 2m Rear Mounted Brush  
Ransomes Jacobsen Cushman with Back Box Top Dresser  
Kubota 3060 Rotary Mower with 60" Deck  
Kubota 3300 Tractor Midsize 30hp  
Goldoni Compact Tractor 22hp  
Massey Ferguson 265 Loader 50hp  
Ransomes Jacobsen Utility Vehicle plus Huxley Sprayer and Back Box  
Dennis RF510 Greens/Tees Mower  
Dennis Sport Greens Mower  
Allen Flymo  
2 Stihl Stimmers  
Stihl Chainsaw  
Stihl Blower  
Hayter Pedestrian Rotary Mower



# The Importance of Performance

As preparations are made for the forthcoming dry season, Kenne James looks at all things irrigation, including the importance of placement and nozzle performance.



For a greenkeeper and a golf course business manager, efficiency is a top priority. If they succeed in efficiently maintaining their course, players/customers enjoy outstanding playability and the manager gets to enter the bottom line of the operating budget in black, not red, ink.

For most golf courses, efficiency is optimised not by broad, sweeping changes to the operation, but, rather, by focusing on details, even small ones. How small? As small as the nozzles used throughout the irrigation system because it can be said that the greatest opportunity to improve efficiency lies in the performance, spacing and application of the irrigation system's nozzles. Take a closer look at nozzle operation and you'll see why this is true.

## NOZZLE PERFORMANCE

To clarify: When we speak of a 'nozzle', we are actually speaking of the 'nozzling' of a sprinkler, which could mean one, two, three or more nozzles working in unison to distribute water over the sprinkler's entire radius.

Typically, most golf sprinklers have at least two nozzles (a main and an inner nozzle), or three nozzles (a distance or main nozzle, an intermediate nozzle and an inner nozzle). The main or distance nozzle throws the water out as far as possible, usually from the middle of its radius to the end of the radius. A larger stream under higher pressure will tend to go further. If there is an intermediate nozzle, its job is to distribute water over the middle range of the radius, while an inner nozzle distributes water closest to the sprinkler, covering approximately the first one-third of the radius.

Two factors have the greatest effect on nozzles' potential efficiency. First, generally speaking, nozzles with shorter radii (in the 18 to 24 metre range) can achieve higher efficiency than nozzles throwing 25 to 35 metres. Water can be distributed more evenly over a short distance than a long distance, helping us achieve what we call 'uniformity'. The shorter the nozzle radius, the greater the uniformity and, thus, the greater the efficiency of that sprinkler's operation.

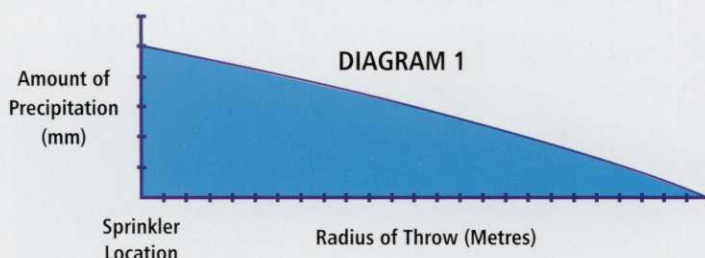
The second factor is the number of nozzles. Imagine the engineer designing a golf sprinkler for a 24 metre radius of throw. If the sprinkler has two nozzles, each will have a broad area to cover. If three nozzles are used, each nozzle can be fine-tuned to distribute water more accurately over a smaller area. The use of three nozzles produces a more even distribution over the entire range of radius and, thus, greater efficiency. This is why sprinklers with three nozzles and a 20 to 24 metre radius are becoming the most desired and common setups used in golf applications, where high efficiencies are beneficial or required.

## SPACING

If you understand how a single sprinkler distributes water, as well as the patterns created by groups of sprinklers, you can determine the optimum spacing of sprinklers to deliver the desired effect - efficiently.

A sprinkler's distribution profile is commonly measured in a test lab where collection cups are spaced every one-third metre, or every foot. After the sprinkler is run for numerous complete revolutions, the volume of water collected in each cup is measured and the water distribution profile is charted in graph form.

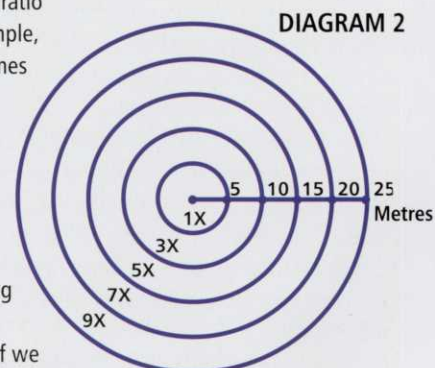
A good distribution profile starts highest when closest to the sprinkler, then has a descending line, forming a shape like a triangle, reaching the bottom of the graph at its maximum radius, indicating that water goes no further (see Diagram 1). When you look at a golf sprinkler in use, it typically appears that most of the water is being thrown the furthest distance from the sprinkler. This is actually just an optical illusion, as radius catchment testing (depicted in Diagram 1) proves out.



Here is why: The further from the sprinkler you go, the greater the area over which the water is being spread. Consider a 25 metre radius split in sections of five metres each. The first section is 0 to 5, the second is 5 to 10, and so on. As the sprinkler rotates, each of these sections forms a ring. The area in the first ring (0 to 5 metres) is approximately 78 square metres; the second ring (5 to 10 metres) is approximately 235 square metres; ring three is approximately 393 square metres; four is approximately 549 square metres; and the fifth and furthest ring (20 to 25 metres) covers an area of approximately 706 square metres.

What is significant is the ratio between the areas. For example, the second ring has three times the area of the first ring; the third ring has five times the area of the first ring; the fourth ring has seven times the area of the first ring; and the fifth ring has nine times the area of the first ring (see Diagram 2).

This data shows us that if we had only one sprinkler, it would be



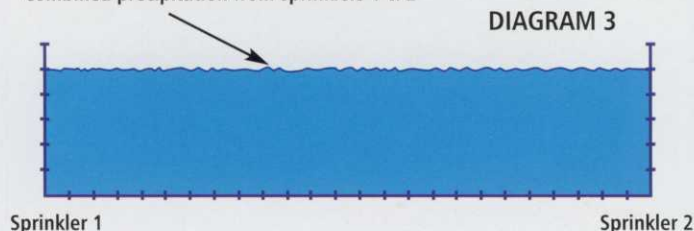


very difficult to distribute water evenly over the sprinkler's entire coverage area. Thus, sprinkler distribution profiles are designed to take the shape of a triangle (highest near the sprinkler and lowest at the end of its radius). This is why most manufacturers recommend that the space between sprinklers be equal to their radius. This locating - or spacing - is commonly called 'head-to-head' spacing and it offers a significant benefit.

**'HEAD-TO-HEAD' SPACING**

If two sprinklers have the same distribution pattern, and are placed opposite each other, separated by the distance of their radii, the result is greatly improved distribution over the area between them. Both sprinklers contribute to the total watering between the sprinklers, and where one distributes less water, the other distributes more water. This complementary distribution continues over the entire distance between the sprinklers, producing an even and beneficial water distribution pattern (see Diagram 3).

Combined precipitation from sprinklers 1 & 2



This is usually the ideal spacing, as opposed to sprinklers being over-spaced - too far apart from one another - or under-spaced - too close together, both of which produce less-than-optimum efficiency. A common symptom of sprinklers that are over-spaced appears during the hottest season of the year, when dry rings of grass tend to form within the first two to eight metres around the sprinklers. The only way to overcome this is to operate the sprinklers for much longer run times. While this may reduce these dry rings, it can also create wet spots in the centre of the patterns between the sprinklers.

A symptom caused by under-spacing sprinklers is wet spots in approximately the first five metres around each sprinkler. Greenkeepers commonly have to reduce sprinkler run times in this situation, which can result in dry spots in the centre of the patterns.

Golf courses with sandy soils may not display these symptoms as much, but the result will be the same, and a greenkeeper will use and waste more water than is necessary. This improper spacing reduces efficiency, resulting in higher than necessary costs and possible turf damage.

**APPLICATION UNIFORMITY**

We begin by noting that when we discuss 'pattern uniformity,' we are considering the area included between all of the sprinklers that create the pattern. This is important because any area that is not an 'included' area - 'included' meaning 'surrounded by sprinklers', will not receive the same 'effective' coverage. For instance, if you looked at a two row system, double row of sprinklers down the fairways, the grass in the area between the sprinklers will receive much better watering than the grass on the outside of either row of sprinklers. You can certainly still grow grass outside the rows of sprinklers, but you cannot water it as efficiently as the

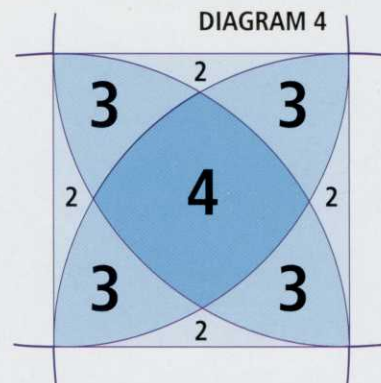
grass inside. Because of this, it is highly recommended that important turf areas are irrigated as parts of the 'included areas' between patterns of sprinklers.

Now let's focus on the affects of various types of sprinkler patterns. The two most common pattern types are square, sometimes called 'rectangular', and triangular, sometimes called 'equilateral triangular'.

Square patterns are very simple and until about 10 years ago, they were the most commonly used patterns worldwide. The biggest drawback of square or rectangular spacing is the fact that each of the four sprinklers, even when spaced at head-to-head distances, cannot spray across the entire pattern. As a result, some areas within the pattern receive water from four sprinklers, other areas receive water from three sprinklers and some receive water from only two sprinklers (see Diagram 4).

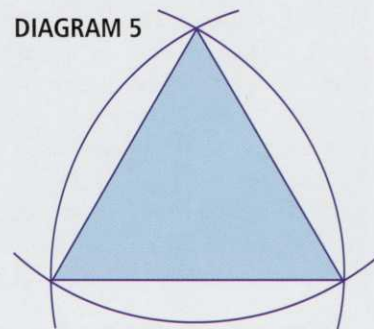
This can cause problems and these types of patterns tend to be less efficient than triangular patterns of the same distance with the same sprinklers. Square spacing is also more susceptible to suffer from the adverse effects of wind. The pattern is made by four sprinklers, none of which throws completely across the pattern, and wind tends to shorten the radius throw even more. This causes greater variance throughout the pattern. This is why professional consultants commonly recommend triangular spacing in windy areas.

Another advantage of triangular spacing, particularly equilateral triangular spacing, is that all three sprinklers throw across the entire 'included' pattern (see Diagram 5). This usually creates the highest pattern uniformities, and thus is the most efficient in terms of water usage and application uniformity.



In a Square pattern, with a sprinkler at each corner, this is the effect of how many sprinklers are applying coverage to the various areas of the entire pattern.

DIAGRAM 5



In a Triangular pattern, each of the 3 sprinklers contributes to coverage across the entire pattern

**ADJUSTING FOR WIND**

Another design technique commonly used in known windy areas is to use shorter-radius sprinklers and closer spacing. Instead of using 24-25 metre spacing, spacing of 19-21 metres might be used in a windy area. There are two main reasons for the short radius approach:

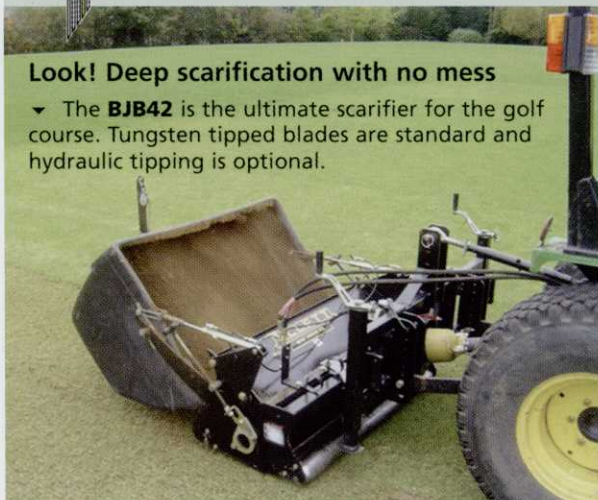
1. Water particles that have to travel further, say 25 metres instead of 20 metres, spend more time in the air, and thus are more prone to be affected by the wind.
2. To travel the further distance, the water droplets go higher and are again more susceptible to the effects of the wind. The shorter radius lowers the maximum height of the distribution.





Look! Deep scarification with no mess

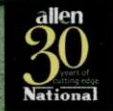
▼ The **BJB42** is the ultimate scarifier for the golf course. Tungsten tipped blades are standard and hydraulic tipping is optional.



Also available in the Allett range are the Shaver and Tournament pedestrian greens mowers.

Allett Mowers Ltd

Baden Powell Rd . Kirkton Ind. Est. Arbroath DD11 3LS  
Telephone 01241 437740 Fax 01241 431715  
Email sales@allett.co.uk www.allett.co.uk



The National 8400

**You can bank on it!**

Challenging landscapes need serious machines. The National 8400 uses a hydrostatic drive to cut up to 3.5 acres per hour. The cylinder speed is independent to ground speed ensuring a clean, even cut and a 15" overhang means the 8400 isn't handicapped by obstacles like sand traps. Power steering, cruise control, low vibration levels and an overall weight of just 522kg, make the 8400 comfortable and efficient!

Allen Power Equipment Ltd  
The Broadway  
Didcot  
OX11 8ES  
sales@allenpower.com  
www.allenpower.com

Call 08456 750 730  
for a FREE TRIAL  
Please quote GI01

**allen**  
Powerful solutions for your growing needs

# FAST AIR INJECTION AT CLOSE CENTRES

PATENTS PENDING  
**sisis**  
AER-AID  
SYSTEM

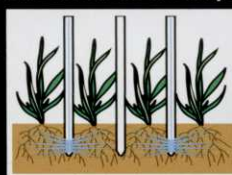


**Combats  
surface compaction  
with minimal  
disruption**

Surface compaction can cause loss of grass cover, hard, uneven playing surfaces, waterlogging and black layer.

Mechanical aerators reduce compaction to provide improved growing conditions.

The SISIS AER-AID SYSTEM speeds up the the process by blasting air into the root zone. Used in conjunction with the SISIS JAVELIN 1500, air is forced into the root zone at a chosen depth, at a fast working speed. Working at 150mm (6ins) spacing, air is introduced at a rate of 88L per min.



*"The SISIS AER-AID SYSTEM combines conventional solid tine aeration with compressed air to give lift and relieve surface compaction without too much disruption to surface levels.*

*I see this as a significant development in aeration technology, as it is able to provide greater gas exchange at the roots of the plant. Preliminary penetration and hardness tests have been very positive, showing greater compaction relief combined with a greater infiltration rate, compared to conventional solid tine aeration."*

Dave Moore,  
Clerk of Works,  
Sports Turf Research Institute

**NOW BOOKING DEMONSTRATIONS**

*a breath of fresh air*  
**sisis**

SISIS EQUIPMENT (Macclesfield) LTD., Hurdsfield, Macclesfield, Cheshire, SK10 2LZ  
Tel: +44 (0)1625 503030 Fax: 427426 E-mail: info@sisis.com Website: www.sisis.com