

"I was only at Berkhamsted a short time because I met a young lady who lived in Kingston and a job at Coombe Hill came up, with accommodation. I knew Coombe Hill was a good course and was close to Kingston," he smiled.

Buoyed by young love but also with the knowledge that it also represented a good career move he gave it a go and, at the age of 21, was lucky enough to be appointed an assistant under then Head

Greenkeeper, Sandy McKechnie. As ever Murray threw himself into the job carrying out a lot of construction work on the course picking up valuable experience in that field.

"I was under Sandy from five years working my way up to Deputy then, a year after becoming Deputy, Sandy left to go to Woking GC and the club asked me to take over the running of the course until they found another Head man."

Murray was 26 at the time and had only just missed his target of being a Head man by the time he was 25. Although, had he factored a club of Coombe Hill's stature into the equation he might have added another ten years to that original target.

"I thought to myself, 'This is it. I've got to go for it and make the most of a wonderful opportunity'."

Six months later what might have been considered a probationary period by the club ended with him being confirmed in post on a permanent basis and, five years on, he hasn't looked back.

Murray is in charge of a 12 strong team on what he describes as a "high presentation, high maintenance course".

"Being a guy of 26 and managing the staff which included some people considerably older was a little difficult at first but the guys were fantastic and I knew what they could do and where they fitted in, as individuals, into the team."





The club has recently undertaken a significant change to the structure of the club which has seen Murray much more involved in the management.

"We have moved away from the traditional committee structure and I now sit on the Course Management Committee with Brian Salisbury, who is the Chairman, and a man who is very supportive and progressive in his thinking; Craig Defoy, the Club Professional and a regular on the Senior Tour, and the Club Captain of the Day, Ronnie Goldstein.

"It is just the four of us and I'm involved in every decision from the budget all the way down. Any changes I propose are taken by the Chairman of the Committee to the General Committee and it has meant that we have made so much progress this year."

Murray is keen to make sure he maximises the benefits of the main Toro Student Greenkeeper of the Year prize - six weeks of study at the University of Massachusetts, a trip to the TORO factories in Minneapolis and in California and a trip to the GCSAA Exhibition in Atlanta in February 2003. "I'm sure it is going to be a phenomenal experience. I've already spoken to last year's winner, Andy Pledger, about it. As well as taking the opportunity to meet so many new people,

I want to go and take as much as I can out of it technically and bring what I've learned back to my team at Coombe Hill. It is a once in a lifetime opportunity," enthused Murray, who admitted that it would be difficult to spend time away from his wife, Penny, and year-old daughter, Sophia.

"I will miss them incredibly, but we talked about the possibility of my winning and agreed that it was a short period of time out of our lives together and that it would be superb for my career. And Penny knows that I'd do the same for her if the positions were reversed," he said.

In the manner of a Oscar winner Murray also took time to thank those who had made it possible.

"I'd like to thank Toro, BIGGA and everyone on the judging panel for making it such a great experience. I'd recommend the competition to anybody. I'd also like to thank the club, the greenkeeping staff for supporting me, not to mention the brilliant support of my wife. Finally I'd like to thank the other finalists. I've made some good friends and, although it was a bit stressful, we all had a really good time."

The two runners-up who each received an all expenses paid trip to Continue to Learn and BTME at Harrogate next year were John Gubb who is the Deputy Course Manager at the Bedfordshire Golf Club and Graham Winter, who works at Kingsbarns Golf Links and attends Elmwood College.

# DRAINAGE

## APPLIANCE OF SCIENCE PINPOINTS UPTON BY CHESTER GC DRAINAGE NEEDS

Mike Saull looks at a new drainage scheme which was inspired by the January issue of this magazine

Upton by Chester Golf Club in Cheshire is a tight 5850-yard, Par 69 course, on just 68 acres of heavy soil.

So, while the summer sees it lush, with the verdant greens and tees nestling under the mature parkland trees, in a wet winter, things can be quite different.

> The combined weight of 700 plus members, trafficking certain narrow fairway areas, often renders the going tough and course closure is an occasional nightmare. Not surprisingly, the club has a rolling programme of drainage activity, and last January they were just about to commence some new work when they opened their copy of Greenkeeper International. "We were all set to drain a

number of areas bounding some soggy tees and greens," recalls Club

Manager/Secretary, Fred Hopley.

ustin Cheung

"Then Justin Cheung pictured above, our Head Greenkeeper, threw a copy of an article in your magazine on my desk."

As a result, eight months later the Club now has a much more accurate handle on its soil problems and has installed tailored schemes based on sound scientific investigation to meet a specific drainage need.

The new service, provided by TurfTrax Ground Management Systems, started with a complete site survey coupled with electromagnetic induction scanning of the top 200mm and then the complete soil profile to 1.2m depth.

This process, using a sophisticated scanner towed by a quad bike sends pulses down into the soil and measures differences in conductivity. The exact position of the scan result is pinpointed on a map using global positioning satellite technology, accurate to within a couple of cm.

In the hands of soil and water engineers, this data helped to highlight perched or deep water tables and target priority areas for attention. Subsequent soil sampling provided information on soil texture, moisture content and density as well as P, K, Mg and pH status.

Next step, recalled the company's Technical Director, Dr Richard Earl, was three days in the pouring rain in soil pits to confirm where existing drains were using tracer dyes to assess their condition.

"What we identified were three areas for immediate priority where surface water infiltration was the main problem on soils that had a large proportion of silt with a propensity to migrate down through the soil and block the macro pores needed for good natural drainage. At one stage, Richard looked at the possibility of a drainage scheme that would drill holes down through the silt topsoil and into underlying sand, but this became a non-starter when the sand was discovered to be shifting quick sand containing a number of springs.

In the end the schemes adopted and installed at the Club used a revolutionary slit design, which turns current thinking on its head.

Instead of using relatively coarse material to within 100 mm of the surface topped off with a fine rootzone material above that, the slits were predominantly filled with fine material which was designed to create 'draw' to improve drainage efficiency. This ensureed water was able to flow into underlying 50mm gravel without being held by capillary action or needing a head of water to create the flow.

Top-dressing with a 6mm layer of the same material as that within the slits was critical in order to connect the water into the slit and remove it from the profile. Richard recommends that the greenkeeping team will need to build this layer up to 24mm over two years in order to maintain a good infiltration rate with rain being sucked sideways.

In order to ensure the materials would not silt up and continue to provide a good flow of drainage water, each of the three contractors who submitted tenders for the job also provided samples for testing in the laboratory.

"In the end, two were prepared to work with TurfTrax, the other gave us the impression that they thought the company were white-coated boffins who didn't know what they were talking about," said Fred.

"Appley Bridge, Wigan based, Duncan Ross Land Drainage won the contract based on price and their refreshingly open attitude to the project."

So what does the Club think of the TurfTrax approach?

"While we have paid more for the job, we now have an accurate picture of our soils across the whole course and a greater confidence that the drainage we put in will work," said Fred.

"For example, we now know where old drains are and which ones are working, and have detailed records of cables and utilities pipes that cross the course. And, because the scanning techniques are accurately plotted using global positioning systems, we can locate them much more easily.

"When Justin and I came to the club we found that records of previous drainage schemes were either non-existent or had been lost," he said.

"The information will also be important in the next phase of development at the club to bring all greens up to USGA standards. With so much information we'll be able to ensure what we do is compatible with the surrounding soils.



exactly where to mark out the new drainage scheme

"As far as the immediate drainage problem is concerned, it became obvious that the problem was not due to water tables rising in the winter, but an inability of our soils to get rid of surface water.

"What we are now installing are six different schemes for six different areas on soils which were not clay as we had previously thought. We are also taking direct control of how our surface water passes through the soil and into tailored drainage material," says Fred.

Justin has also found that the accurate maps provided on CD have helped ensure better accuracy of chemical and fertiliser application.



His approach at Upton by Chester is to adopt traditional principles using fertilisers on a little and often basis to encourage bents and fescues and uses plenty of aeration to improve structure.

He adopts an 8-0-0 programme using iron where necessary and a mix of humic acids, seaweed extract and seaweed meal to build natural fertility and minimise thatch. Fungicides and herbicides are used sparingly.

With the seasons getting earlier, he recognised that his greens - being on cold soils - are slower to wake up. While they do last longer towards the winter, this does cause problems in the spring.



# DRAINAGE



As a result he regularly aerates the greens using a 70:30 medium coarse Whitemoss Amenity Mix, which is compatible with the sand now being used in new bunkers.

He admits that while the members are pretty good, the greenkeeper is the normal scapegoat when it comes to bad drainage. In the four years he has been at the club, he has drained the 2nd and 5th fairways using a standard system of 100mm diameter pipes at 5m spacings covered with 10mm gravel. These appear to have worked pretty well, but for how long?

"The approach we adopted is much more scientific with specific materials designed to do a specific job," he said.

"In much the same way we are putting in USGA specification greens, then why shouldn't we be as accurate with our selection of drainage systems."

Duncan Ross is also keen to monitor the scheme.

"Although the piped drainage system remains a similar design to our normal specification, the slitting that was advocated is quite different and we'll be keen to see how it performs," says Duncan.

#### **DESIGNER DRAINAGE**

Dr Richard Earl reckons that many golf course drainage schemes are ill conceived and badly designed.

In his view, not enough preliminary spadework is carried out before pen is put to paper. Then, too many schemes are based on principles that work on agricultural land but fail on the golf course.

In addition, too little attention is still being paid to the physics of water movement through soil with the result that some scheme designers are using the wrong materials in the wrong place with no hope of success.

Basing his comments on 15 years of drainage and soil mechanics research at Cranfield University – Silsoe, he reckons that the industry needs to rethink how it approaches land drainage design.

So, what steps should be taken to ensure greenkeepers get the scheme they need to keep waterlogging at bay and courses open? Richard's advice is to:-

#### 1. Establish the cause

Proper examination and confirmation of the cause of any problem is fundamental. Scheme design will be very different if you are dealing with a groundwater or a surface water problem.

Common practice is to adopt an off the shelf scheme based on agricultural practices. While this works well where you have deep-rooted crops and well structured soils with plenty of large pore spaces, golf courses are different.

#### 2. Ensure good porosity for grass growth

Schemes have to be designed to satisfy the compromise between achieving adequate water storage while maintaining sufficient aeration (ie at least 10% air filled pores).

Without this level of aeration, you'll have pretty sick looking grass.

#### 3. Use coarser materials in the root zone

Many slit drainage schemes use coarse gravel at depth topped by a fine root zone medium. However, fine pores retain water through surface tension and will only release this water into gravel when there is enough pressure from a surface head of water above it to force it down.

Slit drains installed in such a traditional manner require water on the surface before they will drain. This is exactly what the greenkeeper and the golfer don't want. Designs of this nature are fundamentally flawed.

#### 4. Use deeper slits and the right fill materials

Use slits that are a lot deeper than those commonly employed and which are filled with materials that have hydraulic properties which are capable of creating "draw" to physically suck water towards the slit from up to one metre away.

To achieve this, the optimal dimensions of slits used in TurfTrax schemes are determined by the hydraulic properties of the materials intended for use within them. This can only be derived by conducting a suite of laboratory analyses.

![](_page_4_Picture_0.jpeg)

Fred Hopley and Justin Cheung on the recently constructed USGA Spec 2nd Green

The deeper the sand slit, the wider the potential spacing of the laterals – but you need to take care that the domed water-table you create doesn't break the surface at the mid-point between laterals. Intensity of rainfall and catchment area on the course are critical in this respect.

It is a case of using materials that balance the need for quick drainage after intense rainfall with the need for water retention during the summer and which are not going to silt up.

The ultimate aim is to ensure there is sufficient available soil moisture, and at least 10% aeration, at 5cm depth throughout most of the year. While this may not always be possible, it is far easier to add water through irrigation than it is to get rid of it due to a poorly designed drainage scheme.

In trials on a number of UK golf courses, using the right material in slits has provided 500% increases in drainflow after controlled irrigation, compared to adjoining schemes using traditional slit designs.

#### 5. Aim to space slits 1m apart

One metre spacing of sand slits works pretty well as long as the material specifications selected are correct and topdressings are hydraulically compatible with material in the slits.

#### 6. Orientate slits at 90 degrees across the slope

If you are trying to remove water on a slope, then place the slit drains to intercept as much water as possible by running them across the slope.

Herringbone shaped schemes are often ineffective. Some soils only allow water to move 1mm a day, so use the slope to maximum effect to ensure you capture as much water in the sand slits as quickly as possible before it has a chance to infiltrate the soil.

#### 7. Don't drain uphill

It may seem obvious, but we commonly find schemes that have mains and laterals that try to push water uphill. Check the levels.

#### 8. Minimise the risks of capping by using coarse top dressings

Fines in materials used at the top of sand slits, as well as badly selected top-dressings can cap slits over creating a barrier to water flow.

Use coarser materials as top dressings and at the top layer of slits to ensure water flows quickly and effectively.

You have to be careful as grass growth could be affected by using too coarse and too uniform a grain size that won't retain sufficient moisture. However, it is easier to irrigate than it is to remove water and roots soon get down into slits and spread out into the surrounding original soil.

Colin Hood, of Turftrax Ground Management, can be contacted at Chequers Court, 31 Brown St, Salisbury, Wiltshire SP1 2AS Tel: 01722 434000 Fax: 01722 434040 Website: www.turtrax.co.uk

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# Roland Taylor looks at the perennial problem brought about by the autumn

It is that time of the year again, when Mother Nature has the last laugh and lets us know that she is still in charge. This time it is leaves. Without them we would not exist and they greatly contribute to the landscape at this colourful, time of year. They are a nuisance, especially if they are wet, plus very time consuming to deal with, at a period of the year when there are plenty of other clearing up, rejuvenating and renovating, jobs to be carried out. The biggest problem with leaves is predicting when they will fall.

This year the trees in my garden began shedding their foliage from the end of August, while in other years it has been well into October. One hard frost can change all this. The best solution, in this situation, is preparation and having the right equipment readily available. This generally means an assortment of machinery, each one for dealing with a specific area.

Some existing machinery such as rotary and flail mowers that have a collection facility, can be used for a leaf clearing operation. These machines are generally only suitable for picking up leaves and other debris, off grass. With the smaller models the collecting capacity can be irritatingly limited, resulting in continually having to empty bag, box or collector. Larger machines with a high lift emptying facility are more suited to this task, as the leaves can easily be emptied either onto a heap or into a receptacle such as a skip. While, these types of units do perform relatively well, a better proposition is to have purpose built tractor-mounted or towed leaf and litter

hopper capacity and easy emptying systems and work output. At the heart of most systems designed for collecting debris, is an impeller that creates an airflow, which in turn creates a vacuum. These and the housing they are in, have to be aerodynamically designed for the system to work efficiently. The material is sucked in and then blown out. In the process it has to pass through the impeller, were in most cases it is finely chopped, thus reducing its volume. There is however a disadvantage with this type of system. Often, foreign matter such as stone, sand and in the case of litter; bottles and cans could unbalance or damage the impeller. For this reason it is important, when considering a machine, to check out the construction and materials used for this vital component. One good indicator is the length of warranty a manufacturer offers. Some give three years on certain models in their range. Tractor-mounted and pedestrian, engine

collectors, especially on the fairways and other

wide-open areas. One of the reasons is their

![](_page_6_Picture_0.jpeg)

powered blowers are also available, these blow the leaves into windrows ready for collections. This then means that large amounts of material is accumulated in one place so some form of loader will be required. This can be in the form of a towed unit or one that fits to the tail board of a trailer, skip or vehicle buck. They are basically a vacuum unit with a large diameter inlet hose and adjustable outlet chute.

#### **PEDESTRIAN MACHINES**

Like the tractor-powered machines these come as vacuum collector units or blowers. In most cases the collected material has to pass through the impeller that creates the airflow so, the material it is constructed from is important regarding its longevity. These units can be either push or self-propelled, depending on the make. The main specifications to look out for on the collecting versions, are the size of engine and collecting bag capacity.

#### HAND HELD BLOWERS AND VACS

There are plenty of these to choose from and the specifications to look for are power-to-weight ratio, the airflow produced and whether a blower can be converted into a collector. If the latter is available, then the material will, in most cases, pass through the impeller, so its construction is paramount to its life expectancy. Bearing in mind that a larger number of these units are designed with the domestic user in mind, it is worth checking out if a manufacturer has commercial versions within their range. When it comes to collecting, a major disadvantage of this type of unit is the capacity bag, this is very often small, so it can be a nuisance and time consuming to have to be continually emptying it.

As most of these types of units are very similar, it is a question of comparing specifications and matching them to value for money.

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For years people scratched their heads looking for a speedy, efficient and economical way of collecting leaves and

![](_page_6_Picture_9.jpeg)

grass cuttings. Then, in 1966, the engineers at Trilo came up with the perfect solution – an ingenious vacuum sweeper which they called the Trilo Grass

![](_page_6_Picture_11.jpeg)

Collector. The idea was a huge success and the company's reputation for expertise and quality soon spread world-

wide. Thirty years on, Trilo is still leading the way with a wide range of machines that will not only vacuum, but also scarify, cut and collect.

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Another piece of equipment that is beginning to be seen more is the rotary broom. These engine-powered units have been sold to courses for use in their bunkers and for clearing up heavy debris such as beechnuts. They are now available together with a range of other attachment such as, a long reach hedge cutter, pole prune and brush cutter. All are interchangeable and use only one power source.

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#### AT THE END OF THE DAY

When considering leaf collecting equipment it should be borne in mind that this operation spans only a short period of time, so to get the most out of an investment. A wider application range needs to be considered. Will the machinery perform other tasks throughout year so that the capital outlay is justified? In most cases this will be yes.

#### SHREDDERS

To speed up the decomposing process leaves could be passed through a shredder. This also has another advantage in that it reduces the volume, so less space is required. This type of machine will also process brushwood and small diameter branches.

There are plenty of commercial and semi-commercial shredders now on the market. The size of unit to go for will depend on the largest amount of vegetation that is likely to be encountered during the year.

When deciding on a suitable model there are a number of points that should be taken into account.

![](_page_8_Picture_0.jpeg)

#### SHREDDING MECHANISMS

On most commercial machines this consists of a drum with either a series of flails or hammers. These need to be kept sharp and balanced, so an important factor to take into consideration is how easy it is to access them to replace any worn or damaged ones.

#### **ENGINES**

There is a choice of petrol, diesel or LPG and it is generally a matter of preference which is chosen, however, output is important if the unit is to work efficiently - plenty of power needs to be readily available.

#### FEEDER CAPACITY

The size of opening for material to enter the shredding chamber must comply with laid down regulations, but this can sometimes make feeding the unit slow, so it is worth looking at a few models to see which one has the best system for your use. Some of the larger machines have an automatic feeder.

#### TRANSPORTING

While ideally, the shredder is kept in one location, there maybe times when it is required by others, so the ease with which it can be transported maybe a factor.

![](_page_8_Picture_9.jpeg)

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![](_page_9_Picture_0.jpeg)

Kevin Gould Course Manager of Hesketh

![](_page_9_Picture_2.jpeg)

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![](_page_9_Picture_4.jpeg)

Hillside Greenkeeping Team

Martin Twist Course Manager of Hillside

# **National Championship**

### So Simple for Mr Semple

Ian Semple came close to winning the BIGGA National Championship last year. This year he made sure.

Shirtsleeve weather in October! That's what the competitors in the 2002 BIGGA National Championship were treated to at the wonderful Hillside and Hesketh courses in the north west of the country.

And the quality of golf played more than lived up to the conditions up above and the condition of the two famous golf courses.

Inspired by Sam Torrance and his 12 heroes who clinched the Ryder Cup on the eve of the Championship the entrants in the Championship could not fail to raise their games, especially given the quality of the venues selected for this year's event.

Hillside has long been regarded as one of the finest links never to have hosted an Open Championship while the history at Hesketh, were the English Golf Union was formed, is the equal of any in the land.

It was BIGGA National Board member, Ian Semple, Course Manager at Old Folds Manor who lifted the major spoils and was acclaimed BIGGA's Champion Golfer - an exceptional feat given that he is a 2 handicapper. Indeed he went one better than he did the previous year when he won the Best Gross prize. Ian had endured a slow start, taking three to get out of a bunker on Hillside's 5th, he bounced back on the back nine with birdies at the 14th and two of the last three holes to post a score of 75. He followed that up with a round of 77 at Hesketh for a nett score of 148 over the two days.

"I'm absolutely delighted to win, especially after coming so close last year at Royal Birkdale and Southport and Ainsdale," said the man who won the South of Scotland Championship in 1986 and who was a regular county player for Kirkcudbrightshire before moving south.

A talented long hitter lan's other golfing claim to fame is a tied fourth finish in the Scottish Champion of Champions at Leven in 1987, on the most prestigious events on the Scottish amateur golfing calendar.

"I don't play as much as I used to now and certainly don't win much in handicap competitions so winning this is fantastic," said lan, who was playing in the event for the fourth consecutive year.

"I'll certainly be back next year to defend," he said.

Last year's winner, Chris Ball, was on home soil this year. As an assistant at Hillside he used his local knowledge to good effect to put himself in with a chance of defending his title but a poor second day's performance put paid to his chances.

Winner of the Gross prize was Noel Crawford, of Royal County Down GC, a +1 golfer.

He was delighted to pick up the prize but a little embarrassed to do so as lan's score, as well as being the best Nett score, was also the best gross. As it was a nett competition the nett prize took the top slot and Noel's score of 157 was promoted to best gross.

Martin Twist at Hillside and Kevin Gould at Hesketh and their respective teams worked hard to produce wonderful tests of golf for the two days and they must be congratulated on their efforts.

The team prize went to the South East Region to prove that their policy of investing the prize money in sponsoring members to attend the Championship, and thus strengthen the Region's team, had paid off yet again.

BIGGA National Chairman, Richard Barker, a 1 handicapper, was one over after the first round. Not bad you might think but in fact it was one over fives! His round started ignominiously with a trudge back to the 1st tee when his drive drifted into the right rough never to be seen again. Perhaps it was the fact that he was partnered by the Editor, invited to turn a twoball into a threeball, who brought him down to his more moderate level. That looked a more likely possibility when without Mr MacCallum to drag him down he improved by 12 shots the following day at Hesketh.

#### THANKS

Alan Birch was again the official photographer at the event. The quality of his photographs is first rate and all at BIGGA thank him for the excellent work he does.

#### NEXT YEAR

Next year's National Championship will be played at Coxmoor GC, on October 6 and Holllinwell (Notts GC) on October 7, 2003. Keeping up the tradition of only playing the BIGGA National Championship on the finest courses.