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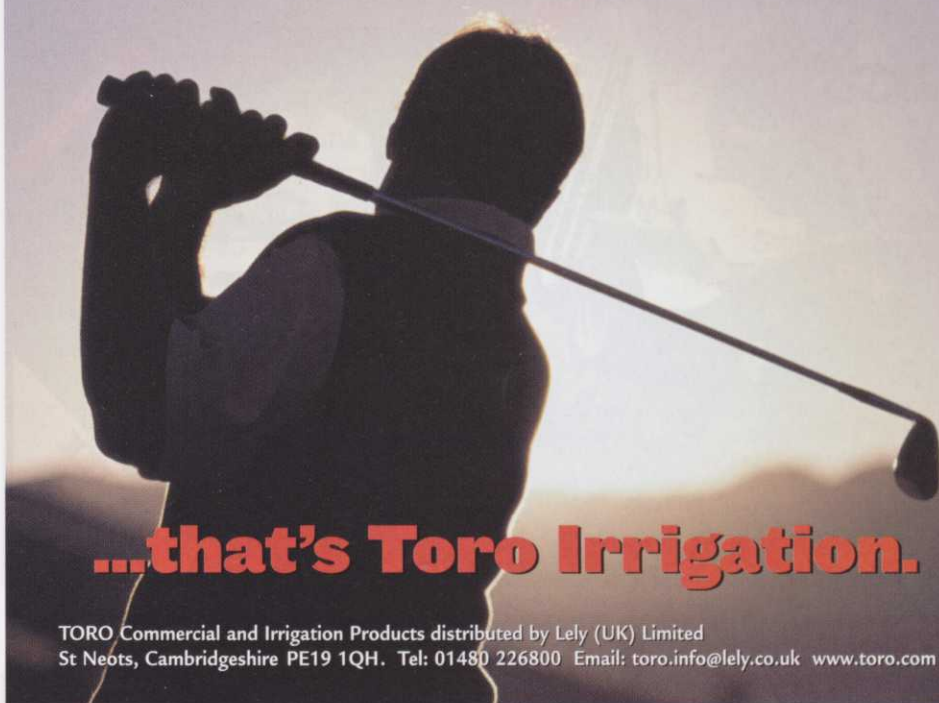
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Irrigation

A pump chamber was made from a 2 m diameter concrete ring set above the western end of the HWP to hold the surface mounted electrical pump that delivers water into the nearby storage tank. The pump control panel and switches are housed in the nearby Greenkeeper's shed. During operation the pump is controlled by float-switches in the tank with a manual override option.

A pumping test was carried out over a 72-hour period and showed that the HWP will yield more than 1,100 m³/day, about 2.5 times the maximum irrigation need. During the pumping period and for three weeks after the test, water levels were measured in both specially constructed tubes close to the HWP and the network across the course. The extensive data set produced from these measurements was carefully analysed to predict the extent of the lowering of water levels showing that the drawdown in groundwater levels will be restricted to the southern part of the S&A course well away from the wetland habitats.

The S&A Course Manager now has sufficient water available at the push of a button to feed the computer-controlled irrigation system and keep the whole course in championship condition.

Rick Brassington is an independent consultant hydrogeologist and Martin Preene is an Associate with Arup Water and runs their groundwater team based in the Leeds office.



View along the HWP trace from the northern end

Rick Brassington Consultant Hydrogeologist,
12 Culcheth Hall Drive, Culcheth, Warrington, WA3 4PS
rick.brassington@eggconnect.net.

Arup Water,
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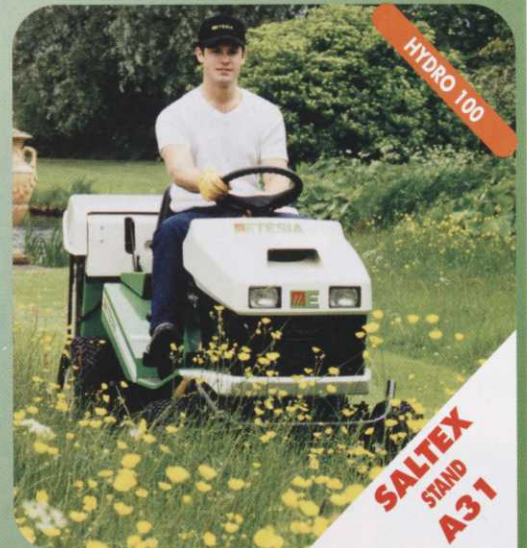


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Course Feature

TOUCHED BY A MASTER

Hawkstone Park is closely associated with an Open and Masters Champion, but as Scott MacCallum found out Sandy Lyle didn't just play over the golf course



On a clear day you can see 12 counties



Frank Tong and Mike Sheehan

Mention Hawkstone Park, in Shropshire, to any golfer with more than just the passing knowledge of the game and one name will immediately spring to mind.

When Sandy Lyle was at the top of his, and the world's game, winning the '85 Open at Royal St George's and the Masters two years later, he was attached to the club and the name Hawkstone Park was known the world over in association with the big Scotsman. Indeed more than that he was born and brought up at the pretty parkland club as his father and coach, Alex, was first pro-greenkeeper at Hawkstone and then owner, as part of a consortium.

Walk round the impressive and imposing clubhouse and you will see pictures of Sandy, at various ages, clutching trophies and posing with club officials.

But one fact I didn't know until Course Manager, Frank Tong, told me, when I visited just before this year's Open Championship, was that Sandy's first passport listed his occupation as "Greenkeeper".

And Frank should know as Sandy worked for him in the early 70s before his burgeoning golfing career took over.

"Sandy was officially on the greenkeeping staff and worked for me after leaving school. He was very good too," recalled Frank, whose career at Hawkstone has only been interrupted by National Service and a short spell as Head Greenkeeper at Leamington Spa GC.

"His father thought greenkeeping was a good way for him to improve his fitness levels and he trained him well in all the greenkeeping skills. He worked here for several years," said Frank, who has a host of stories about the amazing golfing feats Sandy

performed almost on a routine basis. It is not widely known that Seve Ballesteros regards Sandy as the most naturally talented golfer he has ever seen.

Frank also recalled his time working with Alex Lyle, with whom he co-designed Hawkstone's Weston Course.

"It was very satisfying to see the course develop and people grew to love it. Originally it was built to relieve the pressures on the original course but by the end as many people were playing it as the Hawkstone."

Alex and Frank managed the course with the help of one other who used to rake bunkers but despite the lack of staff, by modern standards, they didn't compromise on the condition of the course.

"Alex Lyle liked fast greens and he used to mow all 18 greens, initially with an Overgreen, double mowing if necessary, before he took on his golf lessons. Then he'd often play a round of golf in the evening. He was a great guy but I don't think people could work like that nowadays."

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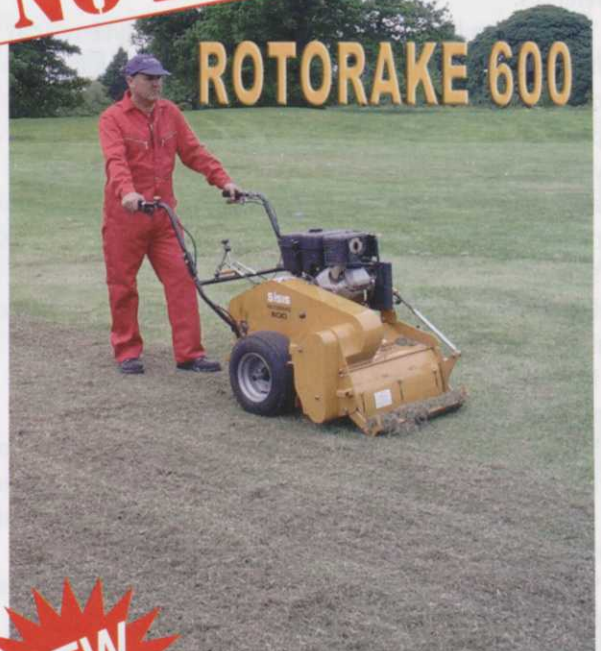
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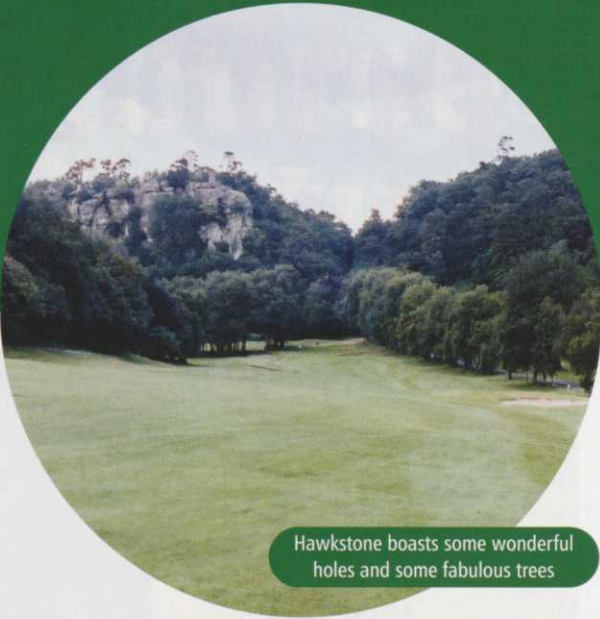


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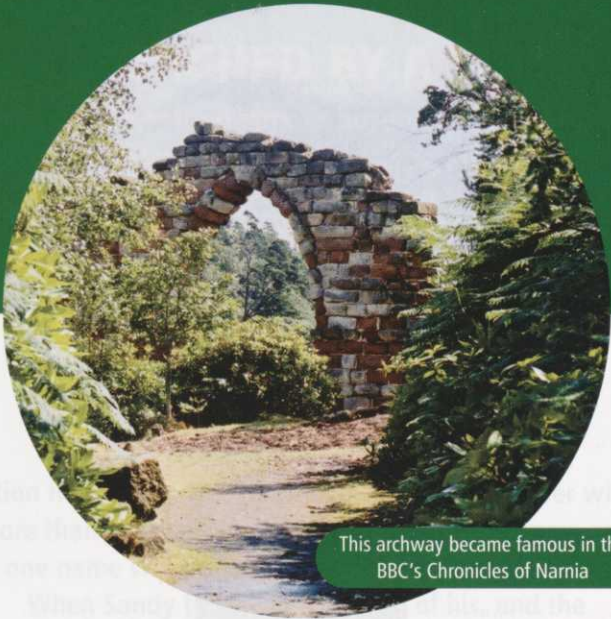
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Hawkstone boasts some wonderful holes and some fabulous trees



This archway became famous in the BBC's Chronicles of Narnia

Hawkstone now boasts a fine 65 room hotel and a purpose built golf centre and Alex and Frank's the Weston course has been incorporated into The Windmill Course, designed by Brian Huggett and opened in 1995, while there is now a six hole academy course for beginners or those wishing to hone their short games. It brings the total number of holes, plus an excellent practice range, to 42 for Frank and his team of 13, including two gardeners, to maintain.

Having progressed from those days to embrace the modern day course management regimes Frank is well placed to appreciate the differences.

"You used to be happy to go out and mow six greens a day and hollow tine by hand. You prided yourself in that but it is like chalk and cheese to today. The biggest differences I've seen are in the paperwork and the standards that we are trying to achieve on a day-to-day basis. Fortunately the change has been a gradual process as I don't think I would have been able to cope otherwise but I think I've been able to adapt to the modern day pressures."

In recent times Frank has been able to turn to an old friend, and well known face in the industry, whose job has taken him out of the Maintenance Facility and into the Board Room.

Mike Sheehan first met Frank when he took over as Course Supervisor at Mere Golf and Country Club in 1983.

"The syndicate - including Alex Lyle - which owned Hawkstone Park at the time also owned Mere and Frank had been combining his work at Hawkstone with managing Mere as well," explained Mike.

"When I started he gave me a two week overlap during which time he gave me the run down on the golf course, irrigation, drainage etc."

At the end of '83 Hawkstone sold Mere to Stephen Boler, a Manchester businessman and very keen golfer. Some years after that Mere was purchased by Stephen Boler son, Mark, who then, in August 2000, purchased Hawkstone Park, thus squaring a very neat circle and bringing Frank and Mike together again.

This time it is under different circumstances as Mike's career has blossomed and taken him off the golf course on a daily basis.

He started at Mere as Golf Course Supervisor and was promoted to Golf Course Manager. Next he became Operations Manager and

as a result more involved in the running of the business. Next stop on the career ladder, was Operations Director then, when the company purchased Hawkstone Park, he was appointed Group Estates Director working between Mere and Hawkstone.

"My job basically involves the running of every aspect of the group outside of catering, banqueting and conferences. One of my main roles is overseeing the development of the golf courses - reaching, then retaining Championship standard for as long in the year as we actually can," explained Mike, who had previously been Head Greenkeeper at West Derby, having started his career under Edwin Walsh at Childwall.

"Frank and Paul Hyde, Mere Course Manager, are our men on the ground while I work with the Chairman, who is a 2 handicap golfer, on what our future policy should be," he explained.

Although the two clubs work independent of each other they do share a mechanic and Mike does use the buying power of two clubs to ensure the best possible deals.

Having Mike, and a golfing man like Mark Boler, in charge has given Frank and his team a real boost.

"We get more input on greenkeeping matters from Mike and Mr Boler, who are both very knowledgeable about golf, whereas our previous owners (newspaper-owning entrepreneurs, the Barclay Brothers) were hoteliers first and golf course owners second."

One of the elements which has really been improved is course presentation.

"We have progressed under Mike's guidance on this and it is now done on a far more regular basis than it was before. All the intensive mowing was a little bit strange to begin with, but everyone can now see the rewards from it," said Frank.

Mike looks for an equal standard over both clubs with diamond cutting of the fairways and graded rough. Although with one course on a rock based site, another on a clay and with Mere Golf & Country Club 70% sand based and 30% clay, they are three very different courses so the team has to adopt different management techniques for each.

Mike, who has swapped his traditional outdoor clothes for a smart suit ("Let's not go into the suit!"), has adapted well to the demands of his new role.

Course Feature

"I've done it by putting a hell of a lot more effort in," he said candidly.

"That's not to say I didn't feel that I was not putting in a lot of effort in the past but it is demands on time. I spend much more time in the evenings in meetings or meeting and greeting customers."

Watching him as we made our way around the golf courses, jumping in and out of the 4x4 to avoid the showers, you could still see the innate greenkeeper's attention to detail as he picked up the odd piece of litter and chatted to Frank about the nuances of the course.

"The training I received as a Course Manager has been extremely useful in the areas in which I now work. I attended the four week long Management Training Courses at Aldwark Manor and a lot of people have gone on to be extremely successful having attended these. I found them very beneficial while I've also tried to read up a lot and train myself. I speak to people in the industry and have been fortunate enough to go over to the GCSAA Show and talk to guys abroad.

"Just by talking with them tells you just how many years we are behind in certain aspects... although we are ahead in others."

Mike pinpoints customer demand as being the one thing which has really come to the fore in recent times.

"This is far higher now than it was ten, even five years ago," he said, as already highlighted by the much higher tariff now placed on course presentation.

Anyone not acquainted with the area surrounding Hawkstone Park should make a point of visiting - it is truly unique.

The cliffs which border the club and give it much of its character are full of tunnels and grottos - legend has it that it is the final resting place of King Arthur, while the area was used as a location for the BBC's Chronicles of Narnia. It is also a wonderful location for Santa's Grotto every December. The guided walks provide those with the stamina to make the climbs with views of a dozen counties when the weather is obliging.

It all adds to the feel good atmosphere inherent in a golf club Mike regards as a sleeping giant.

"Hawkstone Park has a worldwide reputation and the Chairman and I felt it was a project which we could develop."

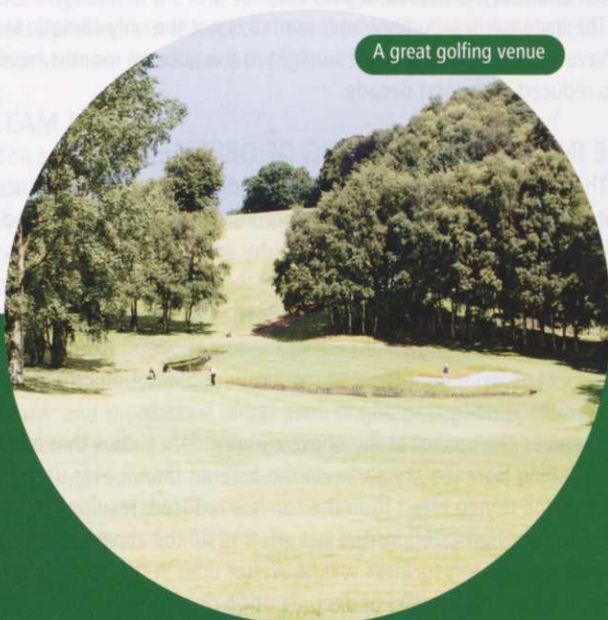
That development has included on-course improvements including the stripping away of the turf on the 6th fairway of The Windmill course, removing all the clay, installing a draining system and returfing the 16th green on the Hawkstone course which was on the old style clay based basin type.

"We agreed something needed to be done so we removed the top fourteen inches and installed a herring bone drainage system and a new root zone and returfed. The result has been very worthwhile," said Frank modestly.

It is another step towards achieving the aim of Championship standards that Mike is looking for.

"We have done it at Mere over the last 17 years and hopefully in two to three years we will achieve that standard here, then we have to maintain it at that. That's where the real fun starts!" said Mike.

With a history that includes an Open and Masters Champion on their Green Staff you can be sure that achieving the standards desired will not be a problem.



A great golfing venue



The King Arthur exhibit in one of the cliff caves above Hawkstone

TIMING is of the essence!

Richard Windows looks at how the climate has changed and how this should affect the timing of some regular agronomic practices



In order to achieve the best results from deep aeration the underlying soil must be relatively dry, particularly on heavy soils. Historically, the conventional time for deep aeration has been during the autumnal months, ie September to November. However, some recent data from the Climatic Research Unit, University of East Anglia, has shown that in the past ten years, our weather, particularly during the autumn/winter months, has become increasingly wet.

Consequently, the soils on many of our turf areas have become wet, often saturated, earlier in the autumn than previously, meaning deep aeration cannot be achieved or, if it is, with much less success. If sportsmen and women require better winter playing surfaces they must not restrict the aeration programme from adapting to this climate change, by allowing earlier aeration operations to be accomplished when the soil is guaranteed to be drier and therefore more receptive.

ANALYSIS OF THE RECENT CLIMATIC DATA

The latest data from the Climatic Research Unit and the Hadley Centre has unequivocally shown that the climate has changed (probably due to the effects of global warming). The trends in the data show that the total amount of annual rainfall has increased but, more importantly, the amount of precipitation during the winter months has increased hugely (see Figure 1 opposite). In contrast, the total rainfall during the summer months has decreased slightly in the past ten years - there must surely have been a mistake!

Further analysis of the climatic data shows autumn rainfall has increased hugely in the past ten years. During the period 1961-1991, the percentage difference in September and October rainfall compared to August rainfall was 2% and 12% respectively. In the past ten years the difference has increased to a staggering 23% and 28% respectively (see Figure 2 opposite), essentially meaning our autumns are much wetter than they ever used to be.

The increase in autumn/winter rainfall is not the only climatic factor to have changed. The hours of sunlight in the autumn months have also reduced in the last decade.

THE IMPACT ON THE TIMING OF DEEP AERATION

The success of deep aeration is largely determined by the moisture content of the underlying soil. For 'optimum' results to be achieved the soil must be moist; not too wet or too dry. In 'optimum' conditions the heave action imparted on the tines from the deep aeration unit causes fissuring/cracking of the underlying soil. The effect of this is to increase the air space, deep in the soil profile, thereby allowing freer water movement away at depth (not to mention the promotion of deeper roots), subsequently resulting in drier, firmer surfaces.

However, the upshot of the above climatic data shows that more rain is falling from the sky earlier in the autumn than it ever used to and also the drying effect from the sun has reduced, resulting in lower rates of evapotranspiration. The net effect of all this means the soils beneath our playing surfaces will be wetter than in the past, therefore compromising the benefits of deep aeration operations.

THE SOLUTION?

Simple, bring forward deep aeration to a time when the soil is likely to be drier and therefore more receptive to the operation. This change of timing will be related to conditions such as soil type, drainage capability, etc. Regional climatic differences will also play a role in optimum timing.

THE RESULT?

In essence, there will of course be a small amount of inevitable disruption to the playing surfaces but course managers and head greenkeepers who achieve late summer aeration operations all seem to do so with astounding success. The minimal disruption to the surface (if done properly) is short lived as temperatures are higher and sunlight is more intense and frequent in late summer (August), compared to early-mid autumn (September-October). This means the growth rates and recovery of the grass plant are greater, as photosynthesis remains active. Another benefit is the fact that the grass plant can invest the assimilated photosynthate into the production of new roots down the cracks/fissures created by the deep aeration operation. This would not be achieved to the same extent if the operation were left to later in the year, as the rate of sugar production by photosynthesis would be reduced. The overall result of the earlier aeration operation essentially promotes better quality, freer draining, late season surfaces that can withstand the stresses of our increasingly wet winters. More importantly, it also ensures the grass plant will be stronger and quicker to respond to ongoing maintenance practices.

IT'S JUST NOT WORKING!

It is fair to say that on some golf courses the response from an earlier deep aeration operation is just not adequate enough to improve the winter playability of the putting surfaces. If this is the case, the only viable method remaining to improve the year round playability of the greens, in the increasingly wet climate, is to reconstruct them to modern, high performance USGA guidelines. Such a construction is designed to be free draining, ensuring that water will rapidly move through the soil profile and out through the pipe drains beneath the rootzone.

This may be an opportune time to also mention that it is wise to reduce irrigation in the late summer on greens that are prone to wetness problems in the winter (it will probably delay the onset of surface wetness if you can enter the winter firm and dry).

A TEAM EFFORT!

The achievement of earlier, late summer, deep aeration operations, to adapt to the increasingly wet autumns, is largely dependent upon the will and commitment of the particular turf manager involved. However, responsibility must also lie with committee members and players alike who should allow and ensure the operations are achieved with regularity. Sometimes this simply cannot be done due to the commitment to an important fixture or event. Hopefully, however, such engagements would be regarded as 'one-offs' and the 'fixture' of late summer deep aeration operations should be regarded as a firm date on, say, the future fixture cards of all inland golf courses, particularly those with heavy soils.

Richard Windows is a STRI Regional Agronomist for Scotland

FIGURE 1 to show the difference in monthly rainfall during the periods 1991 - 2001 compared to the data from 1961 - 1990

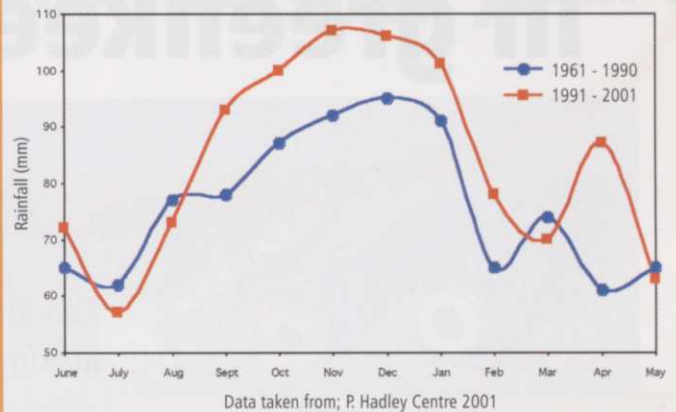
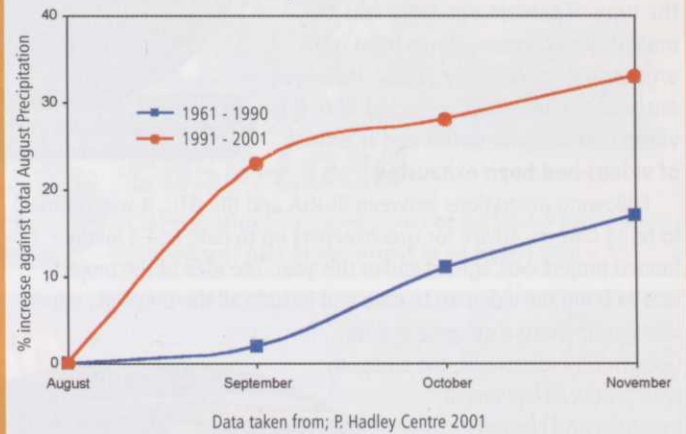
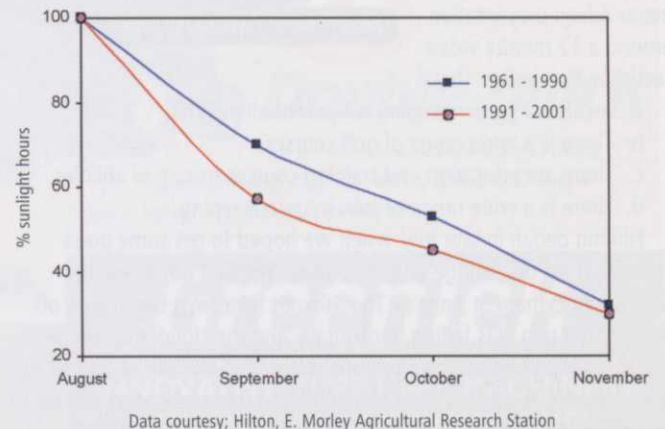


FIGURE 2 to show the percentage increase in precipitation during the autumnal months (Sept-Nov) against the total amount of precipitation during August; over two different time periods 1961 - 1990 and 1991 - 2001



Graph to show the percentage reduction in sunlight hours during the autumnal months (September-November) against the total hours of sunlight in August, given over two different time periods; 1961 - 1990 and 1991 - 2001



CAREERS in greenkeeping



Cameraman, Stuart Dunbar, arranges a shot at Royal Lytham

Ken Richardson describes the work that has gone into making BIGGA's latest production - a Careers CD Rom

Many readers may remember the greenkeeping career video called 'Keeper of the Green' that was produced, jointly, by BIGGA and the GTC, some ten years ago. This video, supported by information on training providers, on qualifications and the type of careers available was the mainstay of careers advice from both organisations for many years. However, much of the information included in the video had become dated and the stock of videos had been exhausted.

Following discussions between BIGGA and the GTC, it was decided to bring Careers Advice for Greenkeepers up to date and a jointly funded project was agreed earlier this year. The idea of the project was to bring the video up to date and include all the previous, paper based, information on one medium.

Goodwood Productions, the company who produced the recent Irrigation and Ecology videos, was chosen to produce the package, which will be available on DVD and on CD.

DVD and/or CD will allow the package to be produced as an interactive, menu driven presentation around a 12 minute video section which shows that:

- A career in greenkeeping is open to all abilities.
- There is a wide range of golf courses.
- There are education and training courses to suit all abilities.
- There is a wide range of jobs in greenkeeping.

Filming began in late July, when we hoped to get some good summer shots on a range of golf courses. The first day started at 6.30am, at Lytham St Anne's. The 30 knot wind was blowing in off the sea, the rain was falling horizontally and the cloud was on the ground. We arrived at Royal Lytham St Anne's Golf Club to be met by greenkeepers in cold weather clothing, who were preparing the course for ladies day. Paul Smith, the Head Greenkeeper, told us that greenkeepers got used to changes in the weather but we were unsure



Goodwood's Roger Greenwood discusses next shot with Paul Smith

about filming in such conditions. Luckily, the rain stopped and we managed to film various activities around this, lovely, links golf course before loading up the camera and sound equipment and heading off to Myerscough College.

The weather was slightly better and we proceeded to film scenes outside on the college golf course and inside in classrooms and laboratories, before filming a range of interviews.

A night at Guy's Lodgings set us up for our trip to Liverpool and filming at Croxth Hall before we made the short journey to Bowring Municipal Golf Club in Knowsley. We spent the afternoon filming the course and several of the greenkeepers, before loading up again and heading for Carden Park.

The weather was kinder when we reached Cheshire and we were out early in the morning to film switching of greens, hand mowing of greens and cutting of fairways. We also filmed on the job training and conducted interviews with a range of people including two Master Greenkeepers, College Lecturers Students and greenkeeping staff.

At the end of three days, we almost had three hours of film recorded and we returned to Yorkshire.

The next stage is to edit the film, include shots of golf being played and try to produce the 12 minute programme. Once we agree on the content, the Programme is turned over to

Peter Alliss to add the voice over, the graphical and text content is added and the DVD/CD is produced.

We anticipate that the package, which will be available in late October, will be sent to Careers Offices, schools and colleges and, on request, to golf clubs and greenkeepers.

BIGGA would like to thank contributors to their Education and Development Fund and the GTC who made it possible to produce this careers package.



'Action' shot at Myerscough College



Training session at Carden Park