LEADING BY EXAMPLE
Iain Macleod, head greenkeeper at Tain Golf Club, reckons that education is the key.

ET - NOT THE EXTRA TERRESTRIAL
The often quoted but never quite explained. What is it and should we be interested?

FROZEN ASSETS
SHOULD GOLF COURSES BE CLOSED IN ADVERSE WEATHER CONDITIONS?

NOT JUST A GOLF COURSE
REASEHEATH’S RICHARD MURRAY RECKONS ‘YOU ARE WHAT YOU EAT’

EAMON MANGAN HAS THE ‘LINKS EFFECT’ AT CARNE GOLF COURSE
Meticulously powerful. | That’s the latest Aercore 800.

Greens are no place for contentment. Not for players, greenkeepers or their equipment. That’s why the John Deere Aercore 800 now has a list of improvements including a 25 hp Kohler engine, precision drive tyre core deflectors and an independent, electro-hydraulic coring head lift and lower system. Satisfied? Add one of the best parts and service support systems and your own, personal John Deere dealer and the Aercore 800 is the closest you’ll get to pure contentment. Call your John Deere dealer for a demo today. www.johndeere.co.uk
A mineral goldmine... 13

10 FAVOURITE KIT
We all have them - a favourite piece of music, a favourite film, but what of the machinery you use on a regular basis?

16 FROZEN ASSETS
Should golf courses be closed in adverse weather conditions? George Atwood-Harris reckons so.

18 THE LINKS EFFECT
Designed by the legendary Eddie Hackett, Ireland’s Carne Links Golf Course is in total harmony with its natural terrain.

20 MIXING IT ON THE GOLF COURSE
Dave Saltman discusses the significance of grass seed mixture formulation with Barenbrug’s Jayne Leyland.

30 NOT JUST A GOLF COURSE
Richard Murray, head greenkeeper and instructor at Reaseheath College talks about his unique role.

63 CDU OF IA?
Calculating the Distribution Uniformity of Irrigated Areas to you and me. Askham Bryan’s Steve Prinn explains all.

To subscribe to pitchcare magazine go to www.pitchcare.com

Leading by EXAMPLE
Iain Macleod, head greenkeeper at Tain Golf Club on the Moray Firth, reckons that education is the key to the development of the industry.

STONE ME!
Dr Tim Lodge believes that the sporting bodies should develop absolute standards for their individual sports with regard to stone tolerance.

IT’S A GRIND
Huter Grinders’ Tony Snith examines the reasons for owning your own cylinder grinder.

WASTEWATER AND GOLF
Big fines are threatened if golf club’s water disposal solutions are anything less than squeaky clean.

TRUST US - THIS WON’T HURT A BIT!
Healthy grass and the impact of a surgical cut on its appearance.

MANAGING LANDSCAPES
Howard M. Medlicott, manager at South Staffordshire Council says maintaining landscapes has changed beyond recognition.

GOING THE XTRA MILE
Coventry’s Ricoh Arena has installed the Xtra Grass reinforced system. Michael Finch flies in for an update.

MADE FOR FOOTBALL
Matthew Rainey, Head Groundsman at Forest Green Rovers is enjoying his new position at the Conference club.

BEST PRACTICE
How often are you told to follow ‘Best Practice’? But where do you start?

CULTIVATION TECHNIQUES
Second of a two part article by Martyn Jones, reviewing the processes of identifying soil physical problems.

MOTIVATING PEOPLE
Trainer and Careers Counsellor Frank Newberry’s top tips for motivating people.

ET - NOT THE EXTRA TERRESTRIAL
Many factors influence the rate of ET on your playing surface but what exactly is ET?

THE FAMILY WAY
Three generations of expertise have gone into making SISIS the successful company it is today.

A POM ON TOUR
Pitchcare’s John Richards joins the Turfgrass Association of Australia on their Summer Seminar trip.

BUYING YOUR OWN COMPUTER
Pitchcare’s web monkey, Alastair Battrick, guides you through the minefield of buying your own piece of modern technology.
THE PC TEAM

DAVE SALTMAN
MD. Passionate about the sports turf industry, but also a true romantic at heart. A recent treat for his partner, Nicola, was long weekend away to Cornwall, where Dave was overseeing a match at the Millennium. And who said romance was dead?

LAURENCE GALE
A rugby fanatic who would not only the coach for a local team, but has also re-signed for his club making himself available for selection in case of need (or should that be desperation?). Wife, Deon, does not know about this latest development, as he keep it to yourselves.

ELLIE TAIT
PIT and Marketing. Has more than most to look forward to in the new year - the prospect of seeing a distinctive white Pitchcare Goose doing Harrogate Week, and more joint visits with Laurence. Truly, can life get any more exciting!

SHARON TAYLOR
Company Accountant. Gradually taking over the office with her obsession for paper trails. Now has more filing cabinets than everyone put together. Recently received the Most Valued Customer award - from the local paper mill.

PETER BRITTON
Sales and Production Director. Says his golf and likes to be out on the course whenever he can. Finding his heels during the weeks of frost, but at least his unexpected spare time has put to some productive use - cuddling his 7 months old granddaughter.

ALASTAIR BATTICK
Web Developer. Bask to his Lancashire roots for Christmas and his regular fix of northern air and black pudding... and to fix of northern air and likes to be out on the course whenever he can. Finding his heels during the weeks of frost, but at least his unexpected spare time has put to some productive use - cuddling his 7 months old granddaughter.

WELCOME TO

Well a very big welcome to 2006, I sincerely wish that each and every one of you has a very happy and prosperous year.

We’ve been celebrating too, not just at Christmas and the New Year, but also with Dr Kate Entwistle for her BRITTIR Award for best technical article. We launched this magazine with the clear intention of providing a good mix of technical and ‘from the horses mouth’ non-technical articles that make each issue a damn good read. Despite being only six months old, the Pitchcare magazine found itself with nominations in all three BRITTIR Literary categories - Best Technical Article; Best Non-technical Article and Best Design and Layout - and our congratulations go wholeheartedly to Kate.

We’re bringing to you the biggest magazine that we’ve produced to date, 72 pages of great editorial, written by contributors from industry, education and grass roots sport - I promise an enjoyable read.

IN December Pitchcare hosted the internet cafe at the NTF Conference in Blackpool. The seminars proved to be the best yet, with speakers delivering topical information across a broad range of subjects. The conference was well received and delegate numbers topped 400. It is definitely worth putting a date in your diary for this years event - the opportunity to learn from highly respected professionals should not be missed.

Many of you will be reading this magazine in advance of the BTME show. BIGGA’s Harrogate Week is the largest indoor turf event in Europe, encompassing a wide range of activities for all those involved in the management of fine turf. It is coupled with a broad education programme covering the management of resources and fine turf for all sectors of the industry, including greenkeeping and groundsman-ship. It’s a fantastic week which gives everyone the opportunity to meet up with old friends and see the latest products and machinery in the market place. There’s no shortage of accommodation and the bars and restaurants are condensed within a square mile or so, right outside the conference centre.

On the theme of training, we are pleased to announce that Pitchcare has launched a series of on-site operator training courses, which are run in conjunction with NPTC/LANTRA/CPCS trainers and assessors. The courses provide competence training from manual handling to PA1-PA6 certification. Full details are on the ‘Education & Training’ section of the Pitchcare website where you can book courses for your staff and keep up to date with current employer legislation.

EVER considered purchasing online? It’s a quick, easy and convenient way of purchasing a whole host of useful products. Over the last few months we’ve been taking advantage of the quieter winter period and increased our on-line shop stock. With over 10,000 items now listed we believe we have the largest collection of products, all available to purchase at the click of a button. Our latest addition to the Pitchcare team, Dan Hughes, explains more in this issue.

Life throws interesting challenges at all of us from time to time but, if there was ever a current challenge to face, it is ‘where does our Industry go from here?’ To me there is some way to go, in unifying for a common goal. The rumblings about education, trade shows and organisations continues, but be assured the coalition of an industry is uppermost in our minds.

Pitchcare’s ethos has been, from the start, to provide a transparent service for the Industry, publishing technical and general information as well as the latest news, making it freely available for all who need it. Member interaction is important and the freedom of speech and dissemination of information has already helped accelerate the introduction of many new initiatives; all of which help to meet the needs of Groundsmen and Greenkeepers, but move us quicker towards a professional and well respected Industry.

Best wishes,
DAVE SALTMAN
Managing Director
Pitchcare - your award winning magazine

Pitchcare - the magazine has won a prestigious BRITish Turfgrass Industry Recognition Award at the National Turfgrass Foundation Conference. In the Best Technical Article category Turfgrass Disease by Dr. Kate Entwistle from the Turf Disease Centre, was praised for its informative and concise content. The article appeared in the very first issue of the magazine and set the tone for forthcoming issues.

Pitchcare - the magazine was also nominated in the Best Non-Technical Article category for Father and Son by Ellie Tait and also in the Best Design and Layout category.

Speaking at the awards, Pitchcare’s Managing Director, Dave Saltman, said “In just a few short months Pitchcare - the magazine has firmly established itself in the marketplace. We are delighted to have won this, our first award, and to have been nominated in two other categories.”

The Final Word

“Stunned that I was completely misquoted” says Keith Kent

KEITH Kent, Head Groundsman at RFU Twickenham, says that recent quotes attributed to him in the industry press have been both inaccurate and misleading. In a statement to Pitchcare’s MD Dave Saltman, Keith said “I took the opportunity at the Groundsman of the Year awards lunch at Saltex to call on everyone involved in the industry to work together to raise the profile of Groundsmen and Groundsmanship.” “After returning from holiday, I was stunned to see I’d been completely misquoted in two industry publications. They had used my light-hearted comment about the use of the Pitchcare message board to imply that I aimed criticism at Pitchcare whilst praising other industry bodies. This was not the case.” “I have been involved with Pitchcare since its conception and have always been a vocal supporter of the efforts and achievements of Dave and his team. They have worked tirelessly over the past four years to unite Groundsmen and Greenkeepers working at every level to share information and advice. They continue to create new and innovative ways of working and promoting our industry and have my complete backing.”

Harrogate Week

HARROGATE WEEK is so much more than an exhibition for the golf and turf industry. Packed with innovative ideas, product launches and an outstanding education programme. With a Careers Fair, Job Shop, AGM’s, and forums running throughout the week along with Dinners, Receptions and a Banquet it’s the only place to be each January.

EXHIBITION 24 - 26 January 2006
EDUCATION 22 - 27 January 2006

For more information and to register online visit www.harrogateweek.org.uk

Organised by Pitchcare - your award winning magazine.

Dave Saltman receiving the award from William Gilbert, MD of British Seed Houses

Keith Kent
“A vocal supporter of Dave and his team”

HARROGATE WEEK is so much more than an exhibition for the golf and turf industry. Packed with innovative ideas, product launches and an outstanding education programme. With a Careers Fair, Job Shop, AGM’s, and forums running throughout the week along with Dinners, Receptions and a Banquet it’s the only place to be each January.

EXHIBITION 24 - 26 January 2006
EDUCATION 22 - 27 January 2006

For more information and to register online visit www.harrogateweek.org.uk

Organised by
Pitchcare announce the Bill Adams Literary Awards 2005/6

Sponsored by Syngenta

Pitchcare are pleased to announce their latest initiative in promoting education and learning opportunities for our industry.

Pitchcare’s editor Laurence Gale said “In the last twenty years we have seen some tremendous advances in sports surface technology, particularly in the advancement of machinery and its operation, renovation, construction and maintenance techniques.”

“The wealth of knowledge required to manage and maintain sports facilities in today’s world is immense. It is one of the reasons why David Saltman set up Pitchcare.com in the first place. He felt there was a clear need to promote our industry and at the same time recognize, promote and share the skills, experiences and work of turf professionals.”

“It is important that we as an industry share this information; promoting education and training is an essential task to ensure the future of our industry in maintaining and sustaining quality facilities.”

“With that in mind we have enlisted the support of the eminent Professor Bill Adams, (former Head of Institute of Biological Sciences at University of Wales, Aberystwyth and the author of many books and technical papers) and also our sponsor, Syngenta, to provide a new and exciting competition not only for Pitchcare members but also for students currently attending colleges and universities in the UK.”

The Bill Adams Literary Award will give students and Pitchcare members the opportunity to submit a written piece of work on any subject relating to the sports turf industry. Winning entries will be published on the website and in the Pitchcare magazine.

Bill Adams Literary Award entrants are invited to submit a written article of between 1000-1500 words. You may enter the Awards as a Student or as a Pitchcare member.

Syngenta, kindly sponsoring the Awards, is providing some fantastic prizes.

The student who, in the opinion of the judges, produces the best article will receive a brand new Laptop Computer.

The best article submitted by a Pitchcare member will win a European weekend break for two valued at £500. Books will also be awarded to commended college entries.

Pleased to be asked by Pitchcare to endorse these literary awards, Professor Bill Adams said, “The written word is the prime resource for historical record and a most valuable means of communication. In the fields of education and science in particular written documents are especially advantageous because a reader can move at his own pace to absorb, digest and also revise information.”

“There are several styles of presenting written information. There is the essay or story style and of course the organisational paradigm for research papers. A style that is often omitted from college courses of a scientific or technical nature is the journalistic style, which I believe has a great deal to commend it especially for technical magazines covering broad areas of interest. There are two key aspects to this style. The first is that the title must stimulate the reader to ‘read on’ and secondly the articles provide interest both for the reader who just wants to get an overview of the topic and the reader who is sufficiently interested to seek out the fine detail.”

“I believe that Pitchcare is innovative and forward-looking in concept and we are fortunate that Syngenta has agreed to sponsor the awards.”

“The awards provide an important opportunity for students at colleges and Pitchcare members to compete on a national basis. The key issue is that these awards are very relevant to personal development in the turfgrass area. I hope that the colleges in particular will encourage their students to compete in this worthwhile competition.”

Simon Elsworth, Business Manager - Professional Products for Syngenta Crop Protection UK said, “Syngenta is pleased to sponsor the Bill Adams Awards. We are committed to supporting the training and education of future managers working in the British turf industry. The Pitchcare competition is a great opportunity to support their professionalism in the areas of turfgrass science, technology and management and to recognise the high level of technical expertise and knowledge which is increasingly demanded for all types of turf management - golf course, sports fields and others.”

More information about Syngenta can be found at www.sygentacrop.co.uk

Competition Details

Details of Content and Style:
The subject areas within which a topic can be chosen are broad and articles will be considered provided they fall within the scope of turfgrass science, technology or management.

There will be two awards and, for both, a journalistic style will be required. There are five key components to this literary style, and articles should comply with the guidelines given below: -

1. A title that attracts attention and stimulates interest
2. A first paragraph that summarises the essence of the complete article
3. The main content of the article should present all relevant information to justify the article being written and published.
5. Acknowledgments and list of references to all sources of factual or other information used in the article.

6. All entries must be submitted by the 31st March 2006, winners will be announced by the 30th April 2006.

Categories of Award:
There are two awards with eligibility for entry as follows: -

1. Students up to and including degree level.
2. Pitchcare members.

Entry in only one category is allowed.

Any student currently attending a course within a UK educational institution incorporating turfgrass science and/or management can enter the student award.

Colleges/Universities should encourage all students attending related sports turf courses to enter.

The respective college tutor(s) and Laurence Gale MSc (Pitchcare) will judge college entries initially. The winning entry from each college will receive a copy of Sports Turf & Amenity Grassland Management, and will be considered for the main award to be judged by Bill Adams, Laurence Gale and David Saltman.

Bill Adams, Laurence Gale and David Saltman will also judge the Pitchcare member’s award.

All authors will be judged on their attention to following the guidelines, as well as their literary skills and subject matter. All finalists will have their work published by Pitchcare.

The judges’ decision will be final.

These Awards have been designed to encourage learning and understanding of the wide and varied subject of turfgrass management.

All entries must be produced in an electronic format.

Log on to www.pitchcare.com/billadams for full entry details.
Cross dressing in Blackpool!

NTF Conference gets off to a surprising start as Martyn Jones strips off ...

This year’s National Turfgrass Federation continued to raise the standard in education provision for the turf grass industry. Over 45 presentations were delivered to the 400 plus delegates who attended the four-day conference.

The wealth of expertise on offer was outstanding, with presentations from a number of leading industry professionals from all over the world.

Martyn Jones delivered a very warm welcome to all the delegates, endorsing the importance of the conference and outlining what challenges our industry faces in the coming years.

Martyn also expressed a very big thank you to all the sponsors and volunteer’s who’s hard work and generosity had continued to ensure the success of the NTF.

As with many of Martyn’s conference introductions there is always a hidden surprise and this year was no exception. After officially opening the 2005 conference he duly began to strip off to reveal himself scantily dressed in women’s underwear that included stockings, suspenders and corset. The reason behind this sudden change of clothes was to promote one of the conference’s attractions; a night out to see Funny Girls, a cabaret act touring Blackpool. Martyn was generously applauded for his efforts before rushing off to change back into more conservative attire.

Read a full report at www.pitchcare.com
WIN • WIN • WIN

a brand new Allen Hover Mower by entering our FREE online draw

Throughout the month of January, everyone who enters will be put into the hat for a free draw which will be made at the Harrogate Show at the Internet Café at midday on Thursday 26th January 2006.

To enter simply click on the Allen banner on the Pitchcare site and fill in the entry form, or you can enter at the Internet Café at the Harrogate Show.

The model on offer to the lucky winner is the Allen 450 (20in (51cm) cut).

- Powered by 4.5hp Honda GCV135 four stroke engine 135cc
- Metal Bar blade
- Height of cut 12-50mm
- Weight 19 kg
- Working angle 45 degree (head up)

RRP £459.95

Only one entry per person is allowed

An apology to Mansfield Sand

In our last issue of Pitchcare - the magazine we ran the topical article, which had already been widely published in the National Press, concerning the use of Fibre Sand at Newcastle United’s training ground.

Manager Graeme Souness had blamed the product for “Eight of his first team suffering from hamstring or thigh strains.” going on to say “We’ve lost close on 600 days to hamstrings alone in the last three years at the training ground.”

However the training ground pitches used by Newcastle United are actually constructed using Loksand and not Fibresand as stated. Fibresand is a product produced solely by Mansfield Sand.

We would like to apologise to Mansfield Sand for this error and we hope to publish a response from Mansfield Sand about their products, which are currently in use at Stadiums and training facilities all over the United Kingdom.

Pitchcare shop develops product range for 2006

The Pitchcare online shop is expanding its product range following a marked increase in online sales during 2005. With 5000 new members this year, Pitchcare has taken a strategic decision to increase the range of suppliers and products provided to members online.

Pitchcare’s reputation has grown since emerging into the industry four years ago. With total membership approaching 17,000 and the hard copy magazine now being distributed to a circulation of 7,000, our audience capacity is second to none.

With the Pitchcare shop we are now finding satisfied customers are returning, and suppliers are now approaching Pitchcare, asking for their products to be featured on the shop. We have also found that our range of clients has diversified further from the core Groundsmen and Greenkeeper customer base, with many schools, Parish Councils and landscapers purchasing from Pitchcare’s extensive shop range.

The website and hard copy magazine feature regular contributions from the finest academics and most experienced professionals within the industry. As such Pitchcare has become a valued educational resource for many students and practicing Groundsmen and Greenkeepers. For 2006 the shop will provide a range of specialist books from a range of publishers including John Wiley & Sons, Taylor & Francis and publications from organisations including The British Crop Protection Council, and The Sports Turf Research Institute (STRI) to meet the demand for specialist knowledge by our members.

Over the past month a number of suppliers including Chelwood Rakes, Osprey Irrigation, Mailsons Safety Boots, and Garffits Tines have listed their products with Pitchcare.

Managing Director of Pitchcare, Dave Saltman, aims to make Pitchcare the online Tesco for Groundsmen and Greenkeeping equipment by the end of 2006. “We want to feature products from all the industry’s major suppliers, ultimately increasing choice and optimising value for all our customers.”

Pitchcare was formed with the fundamental aim of creating the provision to help Groundsmen and Greenkeepers achieve excellence within our profession. Through the Pitchcare shop we strive to achieve excellent service, quality products, and savings to all our members. We hope by offering a greater range of top quality products, provided at the best prices the industry can offer, we can drive the industry forward further.
Hi Pitchcare members. I’m Dan Hughes, the new kid on the office block and am currently adapting well to all the privileges this role has e.g. tea making, answering the phone and getting the seat next to Laurence in the office. Anyway, I am taking this opportunity to introduce myself and explain the differences I hope to be making to the service Pitchcare offers to you. I am delighted to be working in a sports related role and am currently finding out that there is a lot more to turf care and pitch maintenance than meets the eye. After recently completing a Public Relations & Management degree at the University of Central Lancashire, I have joined the Pitchcare team as Marketing Coordinator. I am focussing firstly on getting up at 7 o’clock weekdays and secondly, and more importantly, developing the Pitchcare online shop.

Fundamental to my role will be increasing the product range that the shop will offer in 2006. We will be able to provide you, our members, a wider range of products at the best prices the industry can provide. Pitchcare only lists products from top quality manufacturers and suppliers to ensure customers receive the best service and tools. Over the next three months look out for these new products that will be available through the shop: Chelwood rakes, Osprey Irrigation, Bulldog Tools, Bunce Machinery plus a range of specialist books.

Before I joined Pitchcare I had a dabble at dealing in Bulgarian property and worked in a number of roles that include a Eurocamp courier, Football Referee and Hotel Porter. Whilst a student, I also managed to afford a few more beers than the standard loan allows by wheeling and dealing in antiques (following in my fathers footsteps). I am a keen traveller and have spent time in the jungles of Borneo with the Orang-Utans (but am no closer to understanding Pitchcare’s web monkey), climbed Mt Kinabalu, the highest mountain in South East Asia, visited Australia, Thailand and Brunei and have continent trotted extensively through Europe. I would like to do another round the world trip again but am awaiting Dave’s approval and his offer of holiday pay! I have always been an enthusiastic sportsman and have keenly followed Wolverhampton Wanderers through the (very rare) good times and the bad. Laurence has recently used his persuasive genius to coax me into playing rugby for Shrewsbury, I also play squash and have been known to do a bit of amateur boxing. During the summer I like to get on the Greek beaches with my metal detector and find the odd rusty Euro (or two) but since I’ve started at Pitchcare Dave has promised to get me permission to dig up a few Premiership centre circles - I’m sure there’ll be some coins that have gone missing from the toss and the odd diamond earring lost elsewhere too: BEWARE ALL!!!!!!!

Finally, on a serious note, I would welcome any suggestions or comments from members regarding the shop, and would also like to hear of any relevant products you would like to see in the Pitchcare shop and, of course, from manufacturers and suppliers who would like their products included.

Hi Pitchcare members. I’m Dan Hughes, the new kid on the office block and am currently adapting well to all the privileges this role has e.g. tea making, answering the phone and getting the seat next to Laurence in the office. Anyway, I am taking this opportunity to introduce myself and explain the differences I hope to be making to the service Pitchcare offers to you. I am delighted to be working in a sports related role and am currently finding out that there is a lot more to turf care and pitch maintenance than meets the eye. After recently completing a Public Relations & Management degree at the University of Central Lancashire, I have joined the Pitchcare team as Marketing Coordinator. I am focussing firstly on getting up at 7 o’clock weekdays and secondly, and more importantly, developing the Pitchcare online shop.

Fundamental to my role will be increasing the product range that the shop will offer in 2006. We will be able to provide you, our members, a wider range of products at the best prices the industry can provide. Pitchcare only lists products from top quality manufacturers and suppliers to ensure customers receive the best service and tools. Over the next three months look out for these new products that will be available through the shop: Chelwood rakes, Osprey Irrigation, Bulldog Tools, Bunce Machinery plus a range of specialist books.

Before I joined Pitchcare I had a dabble at dealing in Bulgarian property and worked in a number of roles that include a Eurocamp courier, Football Referee and Hotel Porter. Whilst a student, I also managed to afford a few more beers than the standard loan allows by wheeling and dealing in antiques (following in my fathers footsteps). I am a keen traveller and have spent time in the jungles of Borneo with the Orang-Utans (but am no closer to understanding Pitchcare’s web monkey), climbed Mt Kinabalu, the highest mountain in South East Asia, visited Australia, Thailand and Brunei and have continent trotted extensively through Europe. I would like to do another round the world trip again but am awaiting Dave’s approval and his offer of holiday pay! I have always been an enthusiastic sportsman and have keenly followed Wolverhampton Wanderers through the (very rare) good times and the bad. Laurence has recently used his persuasive genius to coax me into playing rugby for Shrewsbury, I also play squash and have been known to do a bit of amateur boxing. During the summer I like to get on the Greek beaches with my metal detector and find the odd rusty Euro (or two) but since I’ve started at Pitchcare Dave has promised to get me permission to dig up a few Premiership centre circles - I’m sure there’ll be some coins that have gone missing from the toss and the odd diamond earring lost elsewhere too: BEWARE ALL!!!!!!!

Finally, on a serious note, I would welcome any suggestions or comments from members regarding the shop, and would also like to hear of any relevant products you would like to see in the Pitchcare shop and, of course, from manufacturers and suppliers who would like their products included.
IN common with a number of other major tractor and groundcare machinery manufacturers and suppliers, Kubota UK has announced that it will be exhibiting at IOG SALTEX and the BIGGA Turf Management Exhibition (BTME) in alternate years with effect from 2006 onwards.

This decision means that the specialist turf trade shows to be supported actively by Kubota in coming years will be BTME 2006, IOG SALTEX 2007, BTME 2008 and so on. Announcing the company’s decision, David Roberts, Sales and Marketing Manager of Kubota UK’s tractor and groundcare division, explained that the move would enable Kubota to invest more time and money into localised demonstrations and customer support.

“Instead of expending major cost and effort on two national trade shows each and every year, we will be concentrating resources on giving more of our customers more of what they are asking for,” he said. “In particular, we will be increasing the level of local product demonstrations arranged by Kubota dealers in association with our two full-time demonstrators, their purpose-built 23 tonne demonstration vehicles and more than £1 million-worth of Kubota demonstration equipment.”

“The result means greater support for our dealer network around the UK and Ireland and more opportunities for our customers, past, present and future, to see and assess for themselves Kubota tractors and mowers at work.”

“While acknowledging the excellent work carried out for its members and the turf industry by the Institute of Groundsmanship and the British and International Golf Greenkeepers Association, David Roberts said that Kubota could no longer justify attending two major turf-related exhibitions in the UK each year.

“That said, we will continue to support both organisations regionally and nationally and will remain as a committed Golden Key member of BIGGA and an associate member of the IOG,” he pointed out.

“Turfcare professionals and others who want to see Kubota products laid out as a static display will still be able to do so at one major show every year. However, when making major purchasing decisions, our customers tell us that there is no substitute for a hands-on demonstration and evaluation. We will be able to respond faster and more effectively both to our customers requirements and also satisfy those customers who are unable to attend either of the major annual turf machinery shows.”

WHAT’S YOUR VIEW?

Does the present two shows a year structure work? Perhaps you think one annual show centrally located in the UK would be a better option? Email your views to mail@pitchcare.com
Kubota

ZD28 DIESEL ZERO-TURN MOWER

DRIVE WITH THE PROFESSIONALS

When it comes to professional groundcare you can’t beat the Kubota range of machinery. Powered by 30 years experience, reliable and loaded with versatile pro features, they are tough enough to tackle your most demanding jobs. For the perfect finish drive with the professional team.

Call the Kubota freephone enquiry hotline on 0800 023 1111 and quote reference PC DWP
email: info@kubota.co.uk
web: www.kubota.co.uk

RTV900 UTILITY VEHICLE

For more information, details of your local Kubota dealer or to arrange a no obligation demonstration please call our freephone enquiry hotline on: 0800 023 1111 quoting PC DWP.
email: info@kubota.co.uk or complete and return the coupon to: Kubota (U.K.) Limited, Dormer Road, Thame, Oxfordshire OX9 3JN.
Name: ___________________________ Address: ___________________________
Postcode: ___________________________ Telephone: ___________________________
Organisation: ___________________________ Email: ___________________________

EVERYTHING YOU VALUE

www.pitchcare.com/re
FAVOURITE KIT

We all have them – a favourite film, a favourite piece of music and, hopefully, a favourite trade magazine (you’re too kind!). But what of the machinery you use on a regular basis.

We asked a selection of our readers to name names.

LEN SMITH
Head Groundsman, Sophia Gardens
Glamorgan CCC

As a cricket groundsman, I would always go for a Lloyds 21” Paladin mowing machine, fitted with a shaver blade. This is because it has a superb cutting action and easy height adjustment.

Recreational cricket clubs cannot afford a machine for the pitches and another for the square, and the Paladin fills both roles. Although the maintenance of these machines can only be carried out by qualified fitters approved by Lloyds, spare parts are usually easily obtained. Having said that it is a very hard wearing, low maintenance machine.

GORDON MOIR - Links Superintendent, St. Andrews Links

My favourite piece of kit is a hose! That way when we apply water to the greens we know it is going to the exact place we want it to and we are not applying too much.

If you want to speak about machines, then I guess a lot of my staff would say the Dakota 440 topdresser because of its versatility. As well as saving them a great deal of time, it saves them a lot of effort as we use it mostly for loading Cushman mounted topdressers, mixing and screening divot mix, adding sand to bunkers and adding rootzone to construction jobs. Oh, and we use it for topdressing fairways!

Now I will be very unpopular with many of the other machinery folk because I didn’t say their machine!

JOHN HAYES
Head Groundsman
Celtic Football Club

ONE of my favourite machines is the verti-drain. At Celtic Park we have the Greens Verti-drain 7316 that we share with our training ground.

In the past we had to get contractors in to verti-drain, but 2 years ago the club did a deal with Scottish Grass Machinery and the first thing I had on the list was a verti-drain.

Depending on the weather and hours of play we’ve had, we verti-drain every 6 weeks to allow water and air movement through the surface and into the lower rootzone, and always vary the depth of tines each time we do it. This stops it from panning.

The simple tine design makes it easy to change from single tines to multi-tine heads in no time at all and, with sealed bearings, virtually maintenance free.

The verti-drain is good for relieving compaction, improving drainage, and causes the minimum of disturbance to the surface.
My favourite piece of equipment is the Dakota 411 top dresser. Before I bought this machine we had a drop dresser mounted on a Toro workman. This was slow and you needed to drive up and down a green about 18 times to cover the putting surface. On top of that you were putting wheel marks in the playing surface.

I bought a Dakota 411 for many reasons. With its 4 large, low profile rear wheels no wheel marks even in wet conditions. We pull it with a New Holland TC27 Tractor on balloon tyres so no compaction. With the 2 spinning discs at the rear you can spread from 1 to 16 metres and you control the machine as you drive by a master control on your tractor. As you drive you can adjust the speed of the discs as well as the speed of the internal conveyor belt. This allows you without leaving the seat to modify the quantity and width of application as you drive.

We can top dress all the greens in 1 hour with a light top dressing compared to 4 hours with the old system. It is also very easy to load the large capacity hopper with a front end loader. All in all a fantastic piece of equipment which has transformed our top dressing programme into a smooth, fast, efficient operation.

I love my soil reliever

I think that I would have to say my SDF tractor and DJ Turfcare’s SR75 Soil Reliever. I think that this bit of kit is a revolutionary way of relieving compaction. You can work in conditions that only a few years ago you would not have dreamed of. You can get on a pitch and do a grand job inside of 6 hours. With the help of a good weather forecast you can pre-empt the bad weather and make all the difference. It leaves such a good top class finish that you can play on the pitch immediately after you have finished. If you need too just put a pattern in the other direction and your pitch looks mint!

Used as a major player in your remedial works or just as a management tool throughout the season I just love my soil reliever!
Course designer Barrie Gregson is overseeing the new 9-hole at Woodside Golf Club in Cheshire where all the work is being carried out in house

A mineral GOLDMINE

By LAURENCE GALE MSc

WOODSIDE Golf Club is a family owned business that boasts a unique design and landscape. For any golf enthusiast the club provides excellent quality greens and fairways that are surrounded by the magnificent scenery provided by the lush Cheshire countryside.

The 9-hole course is a Pay and Play facility and currently over 50,000 rounds of golf are played at Woodside each year. This is a phenomenal amount of golfers and would have an effect on many greens and fairways in the UK. Woodside are, however, able to accommodate this number quite easily, because the course is rarely affected by winter weather.

The Club remains open 365 days of the year due to the rich, fine natural draining sands and soils the land possesses. The area has a reputation for natural sand and quality soil profiles that run beneath the Cheshire countryside.

The course is able to withstand plenty of golf and machinery traffic during the wettest months of November to February, without getting any significant surface damage. This is only possible with the strategic management of resources (materials, machinery and labour) overseen by the present Head Greenkeeper Richard Corless who often works long hours to ensure the course looks its best.

Richard has been at the course for 6 years and has overseen its development and helped with the assistance of the golf course director. He also manages a driving range at the site, which is again open to the public all year round.

To help maintain the high standard of the course and facilities, Richard has recently acquired two other staff.

The Woodside golf course directors have recently authorised the construction of a brand new, nine-hole academy course. The work began in October and is being carried out in-house under the supervision of Barrie Gregson a golf design consultant whose previous work includes some De-vere courses and Mottram Hall Hotel complex.

THERE are a number of factors that make Woodside a unique course:

- The new course has been designed to fit in a relatively small area, utilising effectively only 12 acres of land.
- It has been specifically designed to test the skills and patience of the golfer.
- Each hole will offer different hazards and green topography to challenge the golfer. There is even a Mackenzie green thrown in for good measure.
- All the labour is carried out in house with Barrie working closely alongside Richard and all other Greenkeeping staff.
- All the materials for the land shaping, modelling and constructing of the greens and tees will be sourced from site using their own machinery.

Under Barrie’s guidance Richard operates the excavator and is also responsible for all the earth moving and shaping. Their challenge is turning a relatively flat piece of land into a challenging nine-hole academy course in less than ten weeks.

All this is only possible due to the fact that the local soils at Woodside are made up of a perfect sand and soil composition. All the topsoil present on the site is consistent in depth (450mm) and is classified as a sandy loam soil. The underlying sand consists of a clean medium / fine sand, with an even particle size distribution, thus making it ideal material for green construction.

A number of canals and lakes have already been built. These have been constructed by simply excavating, modelling and then laying out membranes to hold the water. The process is easier due to there being very little stone debris present in the land. They have been designed so water will flow throughout the canal and lake features, thus helping to oxygenate the water and produce essential water movement creating features that are alive and interesting.

Barrie has created a real challenge for the golfers at every hole and has worked the design around ideas and experiences he has seen over the years working in the industry. Working with Dave Thomas has influenced Barrie in many respects, in that a golf course should compliment the landscape and topography of the local landscape. Woodside utilises and makes superb use of the natural features (trees, water, woodland) found within the land, to ultimately create a stunning landscape.

Barrie has also designed the course to feature a number of hazards, bunkers, water, trees and cunningly placed pin positions. One green is a plateau green offering a dome to hit from 100 yards, however, once on the green you may find yourself ever putting, off downwardly steep slopes.

All the greens average about 250m squared in size therefore making accuracy in essential skill required when playing this course. Golfers short game skills...
will definitely improve from practice on this course.

As with the existing nine-hole course, all the greens will be sown with a mixture of grasses using Barenbrug’s Bar Platinum seed mixture:

- 30% Bargold Perennial ryegrass
- 25% Barcrown Slender creeping red fescue
- 25% Barpearl Slender creeping red fescue
- 10% Bargreen Chewings fescue
- 10% Heriot Browntop bent.

The tees have been made as large as possible to cope with the wear and tear. They have been sown with a ryegrass seed mixture, with some smooth stalk meadow grass sown in for additional stability.

With nearly all the greens and tees seeded most of the remaining work is finishing off small bunker placements and completing the water features. Barrie and Richard are confident that the course will be open for play by late Spring. The soils soon warm up in the Spring initiating early growth and thus, making grass establishment and growth at Woodside very good.

A watering system has also been installed for the greens and tees which will be a great asset for maintaining the new nine-hole academy course. It is amazing what can be achieved when all the resources are collectively available and the window of opportunity prevails.

- Woodside will be able to offer another challenging pay and play facility for its members and customers.
- The Directors and staff have undertaken the experience of a lifetime having built their very own golf course.
- Barrie will have completed another milestone in his career of Golf Course Construction.

The golf course Director and the company Directors hope this new facility will improve the golfing experience at Woodside. Above all they want to encourage both the novice and experienced players to improve their golfing skills by tackling the challenges and intricate designs the course will offer when it opens in 2006.

“It’s amazing what can be achieved when all the resources are collectively available.”
Dr Tim Lodge believes that the sporting bodies should develop absolute standards for their individual sports with regard to stone tolerance in new surfaces.

Throughout the country, the amount and the nature of stones in topsoil varies widely. The Cotswold Brash, for example, is notorious not only for the amount of stones within it but also for the nature of those stones. They tend to be flat so many pass vertically through the bars of a stone burier and avoid removal from the surface. But the oolitic limestone of the Cotswolds tends to break up very easily and can simply disintegrate while lying on the surface. Elsewhere, for example over the chalks of the south east, flints of varying sizes often arise and these certainly do not disintegrate and can be very prolific. They are also sharp and consequently dangerous. Stones are, therefore, a major preoccupation for those involved in the creation of new sports turf surfaces.

Recently I was made aware of an unfortunate situation in which a sports turf contractor was being denied a very substantial sum owed to him because the client considered that the turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very unfortunate situation in which a sports turf contractor was being denied a very
SOLVE ALL YOUR AERATION AND DECOMPACTION PROBLEMS IN ONE FANTASTIC LOW COST PACKAGE FROM IMANTS!

- New 2006 model re-designed Rotoknife
- Fastest and best multi-function aerator in the world
- Aerate 2 hectares/hour with ease and no disruption to play

- New 2006 1.55 metre model Shockwave Revenge
- Latest zero maintenance all-gear drive decompactor with torque limiter (no shear bolts)
- Decompact 20 golf greens a day and play immediately

Now you can buy both of these sensational machines for a total price of £9,950.00 the pair.

CALL JOHN REYNOLDS NOW ON 01568 615469 OR 07980 604430

IMANTS LEGENDARY MACHINERY SINCE 1885
MANY golf courses are in the habit of closing in inclement weather such as frost, snow, or when the course is waterlogged. Usually this is decided either by the club management, the course manager or the head green keeper. However, decisions are not always made on a sound basis.

This article looks at the reasons why a course should be closed, when it should be reopened, and recommends a policy that can be adopted by all clubs.

**Damage to the course**
The main reason for closing the course is to protect it from damage. Damage to the main greens can be avoided by using temporary greens, but it can be forgotten that when conditions are unfit to play on the greens they may also be unfit to play on the rest of the course.

Using the course in wet or frosty weather can lead to damage to other sensitive parts of the course, namely:

- Fairways
- Approaches
- Landing areas
- Tee areas
- Traffic “black spots”
- Pathways

Turf is especially prone to damage when it is frozen or when the ground is thawing. Normal practice is for a course to remain closed until the ground has completely thawed, which often occurs by mid morning.

**What happens to turf in frost conditions?**
When they are frozen, the leaves of the turf are easily bruised by player's feet and trolley wheels. After thawing, the affected turf turns black or brown, and becomes sparse. The turf can often remain thin for long periods if damage occurs early in the winter. The fine turf on greens becomes more susceptible to disease, and the putting surface becomes very uneven.

More long-term damage can be caused when play takes place as the turf is thawing after a prolonged freeze. Under these conditions the top surface of the turf may be soft, but the underlying soil can still be frozen. Root damage occurs easily from a shearing action as player's feet move the soft top surface against the frozen sub soil.

The process of damage to the turf normally follows the following pattern:

1. Bruising and damage to the leaf
2. Loss of colour
3. Severing of grass roots
4. Compaction of the soil
5. Thinning of the sward
6. Poaching
7. Muddy patches

The further that damage is allowed to proceed, the greater the effort that will be needed to reinstate the turf.

**Damage during wet conditions**
Playing on turf that is waterlogged is most likely to cause the development of
muddy patches and compaction. This is especially noticeable on small tee areas and greens, where the sward will soon thin out and die. As the turf becomes thinner the areas will become more muddy, and will take a considerable time to recover.

Implications
Damage caused to the course in winter can be very unsightly and slow to recover. This is particularly true of damage caused in the early winter which may not recover until the following May or June, and so may be visible for 6 months. This means that the course will not be at its best during much of the “competition” time of year.

There are also management and budget implications for the repair of any damage caused by winter play. Repairing the damage adds to the work of the greens staff, and can result in extra expenditure for the time and materials involved.

By far the biggest effect is on the quality of the putting surface of the greens, which are the priority areas in most clubs.

Policy Document
To avoid any conflict about the opening and closing of the course a simple policy document can help to clarify procedures and explain them to members. The first thing is to decide who is responsible for making the decisions. The most sensible solution is for the course manager/head greenkeeper to make the decision as they are most likely to be the first person on the course in the morning.

The following simple procedure can be adopted and made clear to members.

1. Closure
In adverse conditions, the course is closed and a “COURSE CLOSED - INSPECTION IN PROGRESS” sign displayed.

2. Inspection
Inspection of the course will normally take 15 to 30 minutes.

3. Decision
On returning the decision is made. In wet conditions, it can be expected that the course will remain closed all day. On the other hand, frost can be expected to thaw during the morning, so the sign will be changed to “COURSE CLOSED - NEXT INSPECTION AT ?? TIME”.

4. Opening or Re-inspection
Assuming all is well, the course will be opened later in the morning. Normally a time is chosen for the re-inspection when the course is expected to be ready for reopening. If the course is still not fit for play, a later inspection time may be chosen, but this would not normally be later than 12 noon.
Carne Links Golf Course in Eire’s North-west is one of the most organic courses in Europe, totally in harmony with its natural rugged terrain.

BEN CARLISH finds out how Carne’s keepers have polished a rough Irish gem
“The use of seaweed extracts and seaweed compost, as well as nitrogen-based fertilizers has been a very successful treatment programme for our greens up to now. It gives a nice balanced colour to the greens.”

“We do collect the seaweed ourselves and compost it. It was common practice at courses in the past but with labour costs, people are often more tempted to go and buy off-the-shelf stuff. It’s produced here in Ireland and comes mostly with a mixture of sulphate of iron.”

And seaweed isn’t the only natural resource utilised either, as Eamon explains.

“We top-dress the greens with a mixture of the composted seaweed and local black sand (the top layer of sand found in dunes land). We avoid importing sand for topdressing greens. By using the local stuff we don’t have any compaction on the greens as the sand particles are equal in size.”

All clever but eminently sensible stuff. It’s an approach that has begun to yield results for the club with word of Carne’s reputation beginning to get out across the golfing globe.

Year-on-year green fees revenue is steadily building and plans are afoot to build a further nine holes at the course.

“It’s something we’re doing within a five-year programme” says Eamon. “We are using the winter months to carry out the work, so, again, there’s minimal disturbance to flora and fauna. We feel in five years’ time, traffic on the course will demand the extra holes.”

Carne life member, Jim Engh – the acclaimed American course architect - is a fitting successor to Hackett for the job of designing the course’s new nine. Engh once commented: “Golf is the only artwork that you can really get inside of to experience and you can compete with it too,” and he has sworn to follow Hackett’s philosophy of shaping and not raping the virgin terrain that is there. Besides, he’d be ill-advised to eschew Hackett’s approach given the Irishman’s lofty collaborator on its design.

“He said ‘God designed it - I just put a few holes in it and dressed it up a bit’ - and you can’t argue with that!” recalls Eamon fondly.

Eamon’s three tips for lush links

1. Employ a course designer that will respect the fragile nature of dunes land and who will design golf holes around what is there rather than force golf holes on the terrain.

2. Indigenous fescue and bent grasses found in dunes land have for centuries thrived without being fed any form of artificial fertilizer, it makes perfect sense not to over-fertilise these grasses.

3. Pesticides and weed-killer should only be used in extreme cases and care should be taken to use the correct sprayers with wind protection hoods, therefore ensuring that no drift will occur. Far too often we see cloud drifts from spraying on golf courses with unprotected sprayers. Obvously this drift causes enormous damage to the flora downwind in the rough and other parts of the course.

“God designed it - I just put a few holes in it and dressed it up a bit”

Eddie Hackett, Golf Course Designer
Mixing it on the GOLF COURSE

Dave Saltman discusses the significance of grass seed mixture formulation with Barenbrug’s Jayne Leyland

TURF is a society of many plants in which there is always competition and co-operation. Have you ever considered why grass seed mixtures are formulated as they are? Current UK industry performance trials are carried out at the Sports Turf Research Institute (STRI) in accordance with the protocol of the British Society of Plant Breeders (BSPB), the results of which are published each year in the form of the Turfgrass Seed Booklet.

The trials assess a limited number of individual cultivar characteristics, offering a good indication of the potential performance of each specific cultivar for a particular application or characteristic. However, there are many characteristics which are not assessed in these trials and Barenbrug consider it their responsibility, as breeders, to combine these results with in-depth knowledge of their own cultivars to formulate mixtures. In the UK, cultivars are rarely used as a monoculture. They are more commonly used either in blends of one species or in mixtures of different species. Furthermore, these are often used for overseeding into an established sward which already contains several different species, rather than for new sowings. Mixtures and blends offer great benefits by combining a range of desirable characteristics which can enhance the health, aesthetics and performance of the sward.

Grass species – and cultivars within species – have different germination and establishment capabilities at varying soil temperatures and sowing depths. Maintenance practices and environmental impact also influences the species composition of the sward. This is why Barenbrug has initiated a comprehensive and evolutionary mixture trials programme at Research Stations, golf courses and sports grounds throughout Europe. This is further supported by independent trials at the STRI in the UK.

The primary objective of the trials programme is to assess and evaluate mixture performance to ensure they offer the best possible solutions using their highly rated cultivars and innovative new species.

**Mixture Formulation for golf greens**

Many Greenkeepers still choose a mixture of fescues and bent for overseeding golf greens. This may be because the original greens were sown out with that particular specification, or it’s perhaps difficult to grow bent grasses as a single species because the Greenkeeper’s current equipment cannot be calibrated to apply very small bentgrass seed at low rates – the fescue seeds in the mixture merely acting as a ‘carrier’.

An 80/20 fescue bent mixture actually contains about 50 per cent each of fescues and bent by volume, so consider which species you are able to establish in your particular greens so you do not potentially waste half your bag of seed before you start! Even if you are fortunate enough to be in a position where you are able to manage a balance of fescues and bent in your greens, think about the optimum maintenance requirements for the individual species.

Fescue/bent mixtures are formulated for construction, rather than renovation. Depending on your maintenance regimes – and rainfall – one species will dominate over the other in the sward, so to keep a balance you may decide to overseed with fescues and bent separately. The additional benefit of this is you can adjust your timing and sowing depths for optimum establishment of each species.

If you are trying to manage predominantly fescue/bent greens, you will know that the most vulnerable time is during winter play.

Why combine slender creeping red fescue (*Festuca rubra* trichophylla syn. *litoralis*) with Chewings fescue (*Festuca rubra* subsp. *chinata*) in a blend? Slender creeping red fescue has better colour during summer, autumn and early winter. It also has excellent salt tolerance and a rhizomatous growth habit. Chewings fescue has better colour during late winter and spring, has poor salt tolerance and a tufted growth habit. Combining the two sub-species provides better colour for longer. Fescue seeds are much larger than bentgrass seeds and for optimum germination should be sown 4-6mm deep into the rootzone, below the thatch layer. If you are on a parkland course with push-up greens that stay waterlogged for long periods during the winter, it is extremely difficult, if not impossible, to establish fescue in the sward. Fescue seed and seedlings cannot survive cold, wet soils. You can, however, dramatically improve the winter and early spring performance of your greens by overseeding with bentgrass, particularly if you regularly mow at heights below 5mm.

**Poa spp.** greens can and do present and play extremely well in the summer under normal maintenance inputs. The problems are in the autumn, winter and early spring when – unless you have the budget for preventative spraying – Poa is extremely susceptible to fatal diseases such as anthracnose and fusarium, resulting in poorly presented, uneven putting surfaces.

You can achieve success when overseeding with bentgrass and it is possible within a few years to convert predominantly Poa greens into predominantly bentgrass greens, with all the benefits this brings. For whatever reasons (usually lack of equipment and experience of windows), the main causes of poor results when overseeding with bent are surface sowing on top of thatch, sowing when the soil temperatures are too cold, or inadequate irrigation during the germination and early establishment period.

When choosing a bentgrass mixture, remember, you really do get what you pay for. Overseeding is an investment and whilst mixtures containing *Highland bent* (*Agrostis castellana*) are much cheaper than 100 per cent *Agrostis capillaris* mixtures consider this - Highland bent has poor shoot density, poor disease resistance, poor summer colour, poor wear tolerance and is broadly leafed than cultivars of *capillaris* bent, often looking like a weed grass when mown at winter mowing heights.

Bentgrass seeds are extremely small and should be...
You can achieve success when overseeding with bentgrass

surface sown in good contact with the rootzone. When overseeding, the recommended sowing depths is below any thatch layer; the seed must always be in good contact with the rootzone to have a chance of establishing successfully, so try to work as much seed as possible through the thatch layer by whatever means you have available (micro-tining, verticutting, thatchaway units, scarif rolling etc).

It is easier to avoid severe surface disturbance when overseeding with bentgrass rather than fescue, particularly if you have minimal thatch. Many Greenkeepers enjoy much greater success when they overseed with bentgrass several times during the active growing season (May to September) rather than one application during spring or autumn renovation. Overseeding during the active growing season gives the bentgrass opportunity for rapid germination and early establishment.

The implications of close mowing heights can be overcome if you are able to sow the bentgrass seeds below the thatch layer in good contact with the rootzone. This protects it from mower blades and foot traffic and also helps to prevent drying out; adequate irrigation is critical at this time. By applying bentgrass seed at very low sowing rates over a period of three or four months, you will be able to significantly increase the percentage of desirable bentgrass in the sward, with all the benefits this offers. You will also have faster sward recovery at this time of year for rapid, healthy plant growth.

Perennial ryegrass (Lolium perenne) is increasingly being used for overseeding golf greens on parkland courses and for bowling greens. Rapid germination, establishment and winter growth mean successful renovation can be achieved outside the usual window. An excellent surface during winter play is achievable, and disease scars can be repaired.

Remember, cultivar selection is extremely important, as characteristics vary greatly. Fineness of leaf and tolerance of close mowing are essential for this application. If your greens do not become too waterlogged during the winter, then a mixture of fine-leaved ryegrass and red fescue, can be used. The seed size of these two species means you can achieve successful establishment by sowing them together at the recommended depth of 4-6mm. Warmer soil temperatures will help the fungus to compete alongside the ryegrass. Whatever grass seed mixture you are using, it is recommended to apply fertiliser after the new seedlings have germinated. If you apply fertiliser pre-germination you are helping the existing, undesirable grasses in the sward to compete against the emerging new seedlings.

Successful overseeding means considering a whole raft of factors. Seeds need water, air and appropriate temperature to germinate and establish. Don’t allow the seed or seedling to dry out. Think about seed size, the recommended sowing depth below the thatch layer is critical for optimum germination. Pre-seed preparation and appropriate maintenance practices are essential for optimum performance. Think about the synergy of species and cultivars within the mixture. Also think about timing, summer light quality and day length will help with establishment and recovery.

Read the full article at www.pitchcare.com

The Ecosol Aero-fil System

PROVIDING STATE-OF-THE-ART AERATION AND DRAINAGE

The Deep Drill 60/18 and Drill ‘n’ Fill aerators bring dramatic improvements to turfgrass quality, with unrivalled performance:

- Drill, extract and backfill all in one action!
- Improve infiltration, percolation and gas exchange up to 18” deep.
- Bypass wet, spongy upper areas into freer draining, more structured soil beneath greens, tees and fairways.

ALL THIS WITH NO DISRUPTION TO PLAY!

For contract work, sales or a no obligation chat, call the UK & Europe’s sole importers today.

31 Castle Road Hythe Kent CT21 5HB Tel: 01303 267636 or 01666 861250
www.ecosolve.co.uk email: info@ecosolve.co.uk
Iain Macleod, head greenkeeper at Tain Golf Club, reckons that education is key to the development of the industry and is

Leading by EXAMPLE

As befits a Scotsman, Iain Macleod wears his colours on his sleeve. A Greenkeeper for more than 30 years he is as enthusiastic and as passionate about his profession as anyone I have met in the industry.

For 27 of those years he has been the Head Greenkeeper at the picturesque Tain Golf Club alongside the Dornoch Firth, a place where the North Sea winds can whip up quite a gale.

Tain is a traditional links course, designed by Old Tom Morris, which has been developed during Iain’s tenure from a standard scratch par 70 to a 71, with a longer-term aim of getting to 72. “We have extended every tee on the course, revetted all the bunkers and added one new hole (the ninth) in the mid nineties. As far as we are concerned the main development work on the course is now complete,” said Iain.

In 1998 the clubhouse was rebuilt and refurbished, and the club is now benefiting with an increase in member and visitor numbers. “The course and club facilities have a good reputation,” added Iain.

“Membership-wise we are around the 560 mark, including juniors and country members, and visitor numbers are increasing each year. We benefit from being close to

“I try to get all my staff on courses so I thought I better do some myself!”
When it comes to finding exactly the right machine for the job, only Toro will do. Because at Toro you won’t find any yawning gaps in our range. Unlike others we could mention. So whether it’s for greens, tees, bunkers, fairways or roughs; cutting, aerating, transporting or bunker maintenance, make sure you choose Toro. Because only Toro has the full range.

For a free demonstration, please call 01480 226800 today.

TORO Commercial, Irrigation and Consumer Products are distributed by Lely (UK) Limited St Neots, Cambridgeshire PE19 1QH. Tel: 01480 226800 Email: toro.info@lely.co.uk

TORO Commercial Products are distributed by Lely Ireland Limited Kilboggin, Nurney, Co. Kildare. Tel: 00 353 (0)45 526170 Email: torosales@lely.ie

www.toro.com
Royal Dornoch and, being the only links course in our immediate area of Ross-shire, we can be open when many other courses are closed.”

When we spoke, Iain had just been to check on his greens. In August they were all over-sown with a bent/fescue mix. “Our greens are push ups, with a combination of mainly bent and poa grass. The aim is to gradually increase the fescue content, maintain the bents, and reduce the poa. This is the first year of introducing fescues for a while and we are getting some good results, we have some nice lines of fescue coming through. However, the test will be if they are still there this time next year!”

With major development work on the main course completed, Iain and his team have been concentrating on providing a range of facilities for juniors, of which they are justly proud. “Over the last couple of winters we have built two short par 3 holes for junior coaching, and we have put in artificial matting across the full width of the practice ground. Out on the course, at holes 1-4 and 14-18, we have constructed 9 junior tees. They now have a junior course of their own which is mainly used by beginners before they get their handicaps.”

Being alongside the Dornoch Firth provides the course with some spectacular views, but it does occasionally create a problem or two. “The course drains very well,” said Iain. “Recently, however we had an inch of rainfall in just over 24 hours. The fairway on the first hole is actually below the high tide level. A drain flows into the river, but when the tide is in the river rises and blocks the drain, so the water can’t get away. Once the tide went out, the water disappeared.”

Education and Training

If greenkeeping is Iain’s number one passion, not far behind is his enthusiasm for education and training. He is the Scottish representative on the BIGGA Board and chairs the Education Committee. “Education is crucial to the development of any industry, not just greenkeeping. Learning and improving is the only way to progress our profession. If you stand still you go backwards.”

And Iain is not just content to spread the gospel; he actually practices what he preaches. In November he attended a presentation evening at Elwood College where he received the Institute of Learning and Management Level 4 award. Just 8 people received the award, the first ones in Scotland to achieve this.

“I try to get all my staff on courses so I thought I better do some myself,” said Iain. “Each year I sit down with each member of staff and we talk about additional training or skills they wish to develop. For example, my former assistant said he felt he needed to know more about irrigation so he was booked on a 2-day workshop at Harrogate. My new deputy does not have his assessor’s award so he will be doing the GTC’s course so that he can become certified and help me with assessments of the trainees in the workplace.”

Developing future greenkeepers is another area that Tain and Iain are committed to. “I produce a training plan every year which is presented to the club committee for approval. The plan then goes to a local enterprise board for funding. The young lads get level 2 training when they start; they work for 6 months then go off to college. We generally keep them for another year and, if there is a vacancy on the team, they will have the
“You always have to be open to learning no matter how old you are”

opportunity to be taken on full time.”

Not all the lads can be taken on, but using his contacts at other clubs Iain tries to place as many as possible. With his help some have been accepted on the Ohio State programme where the trainees gain valuable experience for 18 months on greenkeeping American-style. The first lad on that programme came back to Scotland, got his HNC, and is now working at St Andrews. “Giving people a start is what we are trying to do,” commented Iain.

The thought of returning to college, particularly for older members of the profession, can be rather daunting. Iain agrees but says any fears are largely unfounded, “Going back to the college environment for someone in their mid forties can be quite frightening, but once you get into it, it is very enjoyable. You tend to find that you are doing the course with like-minded people, everyone joins in and you help each other out.”

“You always have to be open to learning no matter how old you are. There is so much out there for you to learn, and so many courses available via BIGGA, the GTC and colleges. The more you learn the better you will be able to do your job. In the end it helps you produce a better golf course, which is what everyone wants.”

Machinery ...

“The club has a contract with Scottish Grass Machinery on a full maintenance basis, whereby they do the general maintenance and we just do the basic checks. Any problems we give them a call and they sort it. We do not own the machines; we pay a fixed amount every month so we are not hit with any hidden costs. The deal we have is for 6 years; after 3 years all the machines are replaced with brand new ones, so the machines we are working with are a maximum of 3 years old and therefore more reliable. The smaller equipment, such as the strimmers, we buy and maintain ourselves.”

Inventory

2 Iseki compact tractors
1 Jacobsen Greensplex mower
1 Jacobsen LF3400 fairway mower
1 Toro 3200D greens mower
1 EZGO workhorse buggy
1 1M Multi-core aerator
4 Ransomes Marquis hand mowers
4 Honda 4-stroke strimmers
1 Articulator rough cutter
1 1M Multi-core aerator
1 SISIS TDS 24 spiker
4 Ransomes Marquis hand mowers
4 Honda 4-stroke strimmers
1 Articulator rough cutter
1 Vicon top dresser
1 Hardi 300litre sprayer
3 Allen blowers
1 Greensward back lapper
1 set of Thatchaway reels
1 set of scarfler rollers
1 set of top dressing brushes
1 Graden scarifier
1 Vertidrain
1 Scotts accupro fertilizer spreader
Various trailers
1 EZGO golf cart
Who are you? Ian Tomlinson, Course Manager at Rungsted Golf Klub in Denmark.

How are you? Very well thank you, enjoying the current debate on fescue greens in the UK. It has certainly raised some interesting questions on how we will have to manage golf courses in the coming years without the use of pesticides and possible water restrictions.

Where are you? At the golf course. I have been here for five years. In 2003 the Denmark Government introduced legislation to ban the use of pesticides. This has led to all the golf courses in Denmark agreeing to follow a regime to introduce fescue and bent grass species that will be more resistant to disease attack and over time provide sustainable quality-playing surfaces.

What are you on? Currently constructing some new tees and bunkers and also beginning to carry out some tree/woodland management works.

Favourite bit of kit? I must say at the moment it is our excavator; the amount of work it allows us to achieve is unbelievable. I enjoy using it, especially when you have some artistic licence to enhance the course.

Favourite TV programme? Orange County Choppers on the Discovery Channel, all about making gadgets from scrap metal and domestic products, very interesting.

Favourite Film? Saving Private Ryan- a fantastic film that portrayed what war is about. Every youngster should see the first twenty minutes to understand what the older generation went through to give us the freedom we enjoy today.

Best experience? Spending 14 years on the continent in Switzerland working at the Lausanne golf club where I managed to raise the standards at the course bringing it into one of the top 20 courses in Europe.

Worst experience? Coming back to work on UK golf courses.

What books do you read? Only a few technical greenkeeping books - and Pitchcare magazine of course!

Why this industry? I was introduced to it at an early age as I started playing golf at the age of five, then at the age of ten I used to help out on the course at weekends brushing the dew off greens etc. It then became a natural progression to follow into the greenkeeping industry.

What would you be if not in this Industry? A physiotherapist, I'd enjoy the opportunity to help people improve their quality of life.

Trade shows good bad or ugly? Good - I spend a lot of my time attending trade shows and conferences. They are very important for gaining information and connecting me to products and services.

Favourite golfers Jack Nicklaus, Nick Faldo, Gary Player.
Today's professional groundsman has to be able to produce a surface that not only will be judged by his peers but also has to meet the rigorous standards of his chosen sport and, in many instances, is seen around the world by the ever intrusive long lens of TV which will pick out a missed blade of grass at 200 metres.

What is available to help the fine turf professional achieve the perfect playing surface? As well as the advice from 800 or so members at each golf club, especially when they had a bad round, and the thousands of 'experts' who watch football all season, there are many more reliable and proven aids to fine turf maintenance.

Recognised root zone mixtures, chemical herbicides and fungicides, aeration equipment, mowers of all makes shapes and sizes ... and an unsung hero from the back of the maintenance shed - the grinding machine.

If you are one of those who only has the mowers ground once a year, and still sends them in the winter to the local machinery dealer for a regrind, it may well be the right time to take a serious look at the benefits of owning your own grinder.

FIRST there is the obvious advantage of cost, not having to pay someone else to do a job that can be easily carried out in the maintenance shed, especially during the winter months when 80% of this type of work is carried out.

The cost of sending work out varies from one area to another. The average cost throughout the country generally works out at around £100 to £150 per cutting unit head, plus any parts required. Some units may need to be ground more than once a year due to damage from the ever increased frequency of top dressing applications.

One of the most important benefits gained from having in house grinding facilities is that units can be kept in premium condition through out the whole of the cutting season. Often users will spend in excess of £20,000 for the most up to date mowers available. When new these machines will produce a very high quality of cut. However a few months through the season, when the blades are partially worn or even blunt, the grass will get ripped or pulled, making it more susceptible to diseases. Then the initial expenditure on the machine is totally wasted. Back lapping can help reduce this but will not leave the blades with a true honed edge. Blunt or badly worn blades can result in fairways or greens looking shabby when something as simple as a re-grind can improve this almost immediately. Having a grinder on site significantly reduces this downtime.

OWNING your own machine enables grinding schedules to be timed around top dressing programs, weather patterns and competitions. The cylinders can be maintained to a high standard of cut at all times throughout the year. Paul Seago Course Manager at Gullane Golf Club comments on purchasing a Jupiter ATI grinder. “The performance is superb and exceeded all our expectations. The time saved...”
“We have proved that relief grinding works and will advocate it every time”

ERIC WATSON, Head Maintenance Engineer, Carnoustie

and the control we have over our grinding schedule more than justifies the purchase.”

The third benefit applies to repairs or maintenance. When you contract out, the standard of repairs can vary from very good, to the mediocre. Sometimes, if the latter category applies, it is not always the fault of the mechanic. It could be pressure of having too many units to service resulting in the work not always achieving the highest standard. When you purchase an automatic grinder you have an additional advantage of stand alone grinding. With your own grinder on site you are in charge of your own quality control. “A year on and the fully automatic Jupiter ATI has been outstanding, releasing our mechanic to do other tasks.” said Paul Coleman, Course Superintendent at Dromoland Castle Golf & Country Club in Ireland.

What to look for when purchasing a grinder

The manufacturers of fine turf mowing machines spend vast sums of money on research and development of cutting cylinders and all of their equipment is supplied with relief angled blades. Will the grinder you are looking at return both cylinders and bottom blades to the original manufacturer’s specification? The grinder you purchase will be expected to perform accurately for at least 12 years and much longer in many cases. Look at the basic construction. Is it prefabricated? Is the main body cast, which will give a much firmer and more accurate base along with a much longer life span? Ask if the machine has been through vibration tests and ask to see the results.

How accurate will the machine grind?

With cutting units having to perform at much lower heights of cut, as low as 2.5mm in some competitions, and cylinder to bottom blade air gaps of 0.025mm, the grinder manufactures needs to be able to guarantee accuracy.

Some modern cutting units have the cylinder and rear roller fixed in the frame at manufacture and it is essential in these situations as well as a general rule to be able to remove the coning of the cylinder which will occur during a seasons mowing. Check that the machine you purchase will be able to remove coning.

What method of grinding should you use?

Spin grinding, relief grinding, single blade grinding, grinding to an edge - one needs to establish what type of grinding. Whatever you choose the truth remains that the only way to return the cylinders and bottom blades to the original manufacturers specification, and to keep them on cut longer than any other method, is to relief grind. This is an indisputable fact and recognised by professional groundsmen and greenkeepers throughout the industry. “We believe relief grinding gives a superior, longer lasting cut” said Euan Grant Old Course Head Greenkeeper at St Andrews Links Trust Courses, where they operate a Jupiter 2000 and Amazon bottom blade grinder. Eric Watson Head Maintenance Engineer at Carnoustie Golf Links is in no doubt which method works. “We have proved that relief grinding works and will advocate it every time. It’s not only in the quality of cut but more importantly the length of time between grinds, three to four times longer cutting with relief ground units, cleaner cut grass, less prone to disease, less stress on the transmission and engine, better fuel economy, less metal to metal contact between cylinder and bottom blade and a longer cylinder and bottom blade life.”

Space is a premium in most workshops. There are a variety of grinders on the market. Relief grinders, spin grinders, bottom blade grinders, and various accessories, all of which take up valuable space. Hunters Grinders are the only company to manufacture an all in one relief/spin and bottom blade grinder specifically to maximise use of the workshop area.

Health and Safety issues should be considered very carefully when purchasing a grinder. Always request noise and vibration figures for the specific machine you are interested in. Another aspect to be considered, along with health and safety, is dust. If the machine is not fitted with liquid coolant for all operations then dust is inevitable and can be a major health hazard. Liquid cooled machines absorb the grinding dust into the liquid and filter it out through the circulation system. Dry grinding creates distortion of the cylinder and bottom blade due to heat build up and the dust created will
pollute the workshop area unless some form of extraction is installed. Ask for the Health and Safety dust measurement document.

HAVING considered all the aspects of having your own grinder, and decided that this would be beneficial to your workshop, you now have to consider costs. If you compare the cost to mowing equipment then a grinder will be slightly less expensive than a new greens triple.

If we take the cost of an all in one automatic grinder capable of relief grinding, spin grinding, grinding both faces of the bottom blade and capable of returning the cutting units to the original manufacturers specification, delivered and installed and the operators fully trained with certificates to conform with health and safety, the cost is in the region of £22,500.

Whether to purchase outright or, as is becoming more popular, lease, hire purchase, lease or operator lease, you can spread the cost over five or seven years to coincide with cash flow.

Example of lease or hire purchase costs for the above machine.

Total invoice price: £22,535
Monthly payments over seven years: £354

This equates to £81.69 per week. Less than the average cost of one round of golf every other day.

Purchasing a grinder is a long term investment, but the costs can be significantly offset in the short term by choosing the right machine with the right method of grinding. It will save you money lost to contracting out, save you money through improving the life expectancy of cylinders and bottom blades and reducing down time. Most important of all the standard of your course will only improve.

For further information please contact: Tony Snaith at tony@snaith.fsbusiness.co.uk

---

DARREN BALDWIN, Head Groundsman, Tottenham Hotspur FC - After 10 years at White Hart Lane I manage to get more days off than I used to, but that might all change again in the near future. The club has made a planning application for a new, state of the art training ground and, if successful, I will project manage all the pitch works. The development will take 2½ years, so it is more than likely we will need to get in a new Head Groundsman at the stadium. It will be an exciting challenge if all goes well. On my day’s off I do like a game of golf, my handicap is 18, but the number of games I play in a year does not justify me being a member of a club. My holidays generally involve golf, usually to Portugal with a group of pals; I love the place. Whenever I can, I do like to go into the city. Recently, I have been able to tie it in with visits to the architects, so I meet up with a pal early evening and go for a chinese meal. I like a bit of a flutter so we usually end up in the Chicago Rock casino, it’s a lot less informal than the others. But my real passion is speedway, ever since I was a boy aged 9 and I went with my family to the World Championships at Wembley and saw riders such as Michael Lee and Barry Briggs. It is such an exciting sport. One of my pals, Ryan Sullivan, rides for Arena Essex. I have been to a lot of different sporting events but, without doubt, the best ever is the British Grand Prix held at the Millennium Stadium. I’ve been to it every year since 2000.
My role at Reaseheath College is quite unique. I manage a number of sports facilities including football, rugby, bowls and a short nine hole golf course. These facilities are not only used by members of the public and our students for recreation, but are actively used for teaching purposes at the college too. We annually have over 300 students carrying out NVQ levels 2/3 in sports turf management.

The golf course, built twenty years ago, was designed to provide a practical teaching environment for students. Each green is constructed using different methods covering a range of soil composition, ranging from total sand construction to total soil pushed up greens. Therefore many of the greens on the course differ in performance and playability.

Now in my third year at Reaseheath, I am beginning to see the quality of our work come into fruition. Many of the greens were in a poor condition when I arrived. By implementing some tried and trusted traditional cultural practices, we have managed to improve sward quality and the porosity of the greens.

I was previously Head Greenkeeper at Sandbach and Izaak Walton Golf Clubs where I began my philosophy on the organic management of golf courses. Fundamental to this policy was restricting the use of pesticides whilst actively promoting and increasing cultural practices such as topdressing and aeration.

I usually apply about 0.5 tons of material per green using a 50/50 ratio of sand to soil dressings throughout the growing season and then apply 100% sand dressing in November. My aim is to increase microbiological activity in my rootzones and thus help to sustain a healthy environment for the grass plant to survive all the stresses that occur during a busy playing season.

I believe that you have to treat the sward like you would treat yourself - feed yourself on a healthy diet and do not indulge or be excessive in your intake (You are what you eat).

With that in mind, I am a great believer that you must utilise quality products, carry out mechanical operations using the appropriate machinery and ensure you are aware of contemporary advances in education and the practice of turf management. A second
POWERFUL STUFF!

Earth shaking garden and groundscare equipment from Pinnacle Power. They’re tough and they mean business.

VACUUMS. The Billy Goat Pro Series Quiet Vac devours leaves paper, glass bottles and cans. Leads in noise reduction.

MOWERS. The tough rugged and reliable range of Klippo high powered mowers suits all purposes. Robust components and features enable sustained professional use, even in the wettest conditions and uneven ground. Mulching and grass collection models are available.

SCARIFYERS. Eliet scarifiers promote healthy lawn growth and appearance, dealing with stifling moss, hatch and creeping weeds. Pro specification.

BRUSH CUTTERS. The tough Billy Goat brush cutter. Voracious appetite, tackles dense undergrowth, tallest grass, clears heavy brush, weeds and even small trees.

SHREDDERS. The powerful new generation of Eliet shredders digest virtually any vegetation and prunings as well as waste materials.

For further information and details of your local stockist contact the Sales Desk

01932 788799

www.pinnaclepower.co.uk

PINNACLE POWER EQUIPMENT LIMITED
The Barns, Watersplash Farm, Fordbridge Road, Sunbury-on-Thames
Middlesex TW16 6AU Tel: 01932 788799 Fax: 01932 784487

Supplying the horticulture, groundscare and hire markets
opinion can often be very important to justify your actions.

For the last ten years I have worked closely with George Atwood Harris, an agronomist who has always provided me with good advice. George is excellent at listening to my problems and then will advise me of the way forward. He does not tell me "I should do this or do that". It is my decision in the end that matters. It is me who has to take the responsibilities for my actions, not George.

I have seen some of the work George has implemented with regard to the organic management of turfgrass facilities. The results have been remarkable. At several courses, George has managed to reduce their applications of fungicides and fertilisers making significant savings for the clubs, and at the same time reducing disease attack. This was achieved by the methods we are now introducing at Reaseheath.

George and I take a number of soil samples throughout the year, to measure not only nutrient macro and micro levels, but also evaluate the number of bacterial organisms / fungi populations we have in our greens.

### Aerobic Bacteria

Aerobic bacteria are obvious indicators of a “healthy soil”. They will only thrive when there is a good supply of air in the soil. Compacted or waterlogged soils will have a much lower count of aerobic bacteria than well aerated soils.

This is the group of microbes that we strive to encourage in the greens by our aeration work.

The results are quite outstanding. The count of aerobic bacteria has increased considerably, from an average of about 500 thousand to an average of over 25 million.

Our challenge now is to maintain the bacteria at these healthy levels. It would be beneficial to continue with the aeration work and our seaweed based fertiliser programme. Also we could include some granular fertilisers with an organic or biological content.

### Anaerobic Bacteria

This group of bacteria has declined significantly as our aeration programme has taken hold. Originally at an average of about 65 thousand, they now average about one thousand. This is also a great result and a tribute to the effort that we have put into the greens.

### Fungi

The fungal count is perhaps the most important as organisms in this group are responsible for the disease seen in the greens. The fungal count has declined as the level of beneficial aerobic bacteria has increased. From an original average of about 150 thousand, the count has reduced to an average of about 20 thousand. More importantly, the greens suffer less from disease which is a considerable cost saving to the club.

OVERALL these results represent a considerable improvement in the health of the greens. They are a testament to the hard work that we have put in to changing their management to a more sustainable system. Now this important milestone has been reached, we can move forward as planned with our efforts to improve the quality of the greens’ surface.

We feed the greens with organic products such as seaweed, which not only provides nutrients for the plant but also helps reduce the incidence of disease. This year disease has been prolific. Many clubs who continue to use fungicides have had heavy disease outbreaks - at Reaseheath we have had just the occasional small patch of disease occurring.

As soon as I see evidence of disease I spray the plant with a small feed of seaweed (10 litres of seaweed product in 600 litres of water). This usually helps the plant recover. If the disease continues, I apply a dose of acidified water that

---

**EXAMPLE OF A SOIL BIOLOGICAL ANALYSIS REPORT USING ACTUAL DATA GENERATED FOR RICHARD MURRAY AT A PREVIOUS COURSE**

**Sampling date : 27th of September 1999**

<table>
<thead>
<tr>
<th>Sample Name</th>
<th>Aerobic Bacteria ('000s)</th>
<th>Anaerobic Bacteria ('000s)</th>
<th>Yeasts &amp; Fungi ('000s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seventh Green</td>
<td>340</td>
<td>120</td>
<td>210</td>
</tr>
<tr>
<td>Eighteenth Green</td>
<td>600</td>
<td>9.7</td>
<td>86</td>
</tr>
</tbody>
</table>

*The numbers in the tables are per gram of soil*

**Sampling date : 28th of September 2001**

<table>
<thead>
<tr>
<th>Sample Name</th>
<th>Aerobic Bacteria ('000s)</th>
<th>Anaerobic Bacteria ('000s)</th>
<th>Yeasts &amp; Fungi ('000s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seventh Green</td>
<td>29,000</td>
<td>3.2</td>
<td>23</td>
</tr>
<tr>
<td>Eighteenth Green</td>
<td>24,000</td>
<td>0.1</td>
<td>19</td>
</tr>
</tbody>
</table>
generally stops the infection.

We usually feed the greens with applications of liquid seaweed monthly with light applications of quality fertilizer as and when required.

We would all like Poa free greens. However, we have to manage what we have with the available resources. As we are a teaching resource, I like the course to challenge the students. The fact that we have a wide and varying quality of course is ideal. It allows our students to learn their trade and see for themselves the problems that need addressing when maintaining natural turf.

Currently we are carrying out a drainage trial using Aquadyne a new, recycled drainage medium manufactured by Enconoplas Ltd. One metre long strips made from recycled plastic are moulded to form a free draining material that is inserted into a drain run and acts as a permeable drain.

This product has been installed in one of the most problematic greens on the course. The green regularly had ponded water lying on its low plateau. However, since installing Aquadyne we have managed to drain the water away. It will be interesting to see how this product works over time.

The company has also enlisted the help of Reaseheath to trial another interesting use of this product. The Aquadyne product will form part of a new pallet system with the aim of seeing how well turf can be grown on it and how well it drains. The potential use of this product for temporary natural tees may be an ideal solution for winter tee mats.

My role at Reaseheath is always very challenging, especially when students are involved. It is vitally important that these students have the opportunity to learn effective skills and gain valuable experience for their work within the sports turf industry. As an assessor and instructor for NVQ courses, I feel it is important that they should attain high standards in both their theory and practical skills.

I do not pass or allow any students through if they do not reach the standards I set myself. I like to know that when we send a student from here into the real working world, they will be more than capable of holding their own in the sports turf industry.

Richard Murray, Head Greenkeeper and Instructor, Reaseheath College www.reaseheath.ac.uk

Students should attain high standards in both their theory and practical skills

Richard Murray, Head Greenkeeper and Instructor, Reaseheath College www.reaseheath.ac.uk
BRITAIN’S sports clubs are taking a hammering on at least two fronts at the moment. The unreliability of Britain’s weather makes water management a tricky issue for them to tackle, but the onset of tough laws governing disposal of waste water threatens them with big fines if their disposal solutions are anything less than squeaky clean.

Since the Groundwater Regulations 1998 (GR) were introduced, several systems have come to market designed to help clubs comply with the law. Simpler ways of treating and recycling machine wash water for example were available well before the act came into force and these, coupled with more recent systems, give clubs ample opportunity to meet their legal obligations.

Golf clubs are particularly vulnerable given the acreages of greens and fairways managers must police. However, it is said that only 10% of the estimated 2,500 golf clubs in the UK have to date installed the necessary equipment, which can cost from several thousands to tens of thousands of pounds, depending on the water treatment capacity required. Those costs could shrink in comparison however with the fines imposed for contaminating groundwater.

“Golf is a high profile sport and is seen as exclusive and elitist,” says Andy Campbell, Golf Courses and Estates Manager at the 45-hole De Vere Carden Park golf resort near Chester. “Clubs should be seen to be leading the way by complying with the groundwater regulations. If they do not, it is only a matter of time before a court case hits the news. They should also take a responsible stance on water recycling, especially when shortages are looming, as now.”

Campbell, Immediate Past-Chairman of BIGGA, believes that many clubs are not up to speed with the legislation. “Either that, or they are financially unable to meet the requirements.”

“Organisations such as BIGGA have a big role to play in educating their members - the golf course managers and greenkeepers - about compliance. We still have a lot to do on this,” he admits.

Campbell is one of the estimated 200 or so clubs in the UK who have specified a waste water treatment system, choosing one from Waste2Water, which, like other options from Course Care and Hydroscape for example, uses a microbial substrate to digest pollutants such as oil and diesel while also filtering off solid materials such as grass clippings, soil and sand.

“The outlay of around £30,000, which included civils such as the construction of a concrete washpad where vehicles are assembled for hosing down, doesn’t add to the bottom line,” says Campbell “but the process saves labour costs and waste management operators disposal charges. The grass clippings that the system separates out are recycled by taking them for composting elsewhere on site.”

Tim Earley, Managing Director of Waste2Water, puts
the costs into context: “For a system installation cost of around £15,000, clubs are investing in something that is priced about the same as the average mower, but that will last longer. Maintenance costs are low too at about £500 a year.”

Clubs now begin to realise their need to comply, Earley believes. “Courses want to be seen to be environmentally conscious.”

Clubs can choose to have an underground treatment plant, such as the ClearWater system from Course Care, or an above-ground system such as the Waste2Water, Osprey and Hydroscape processes.

Visual amenity and noise considerations will weigh more heavily with some clubs than with others but after looking at all three systems, Campbell saw an above-ground option as a benefit. “It’s easy to service and I can see what’s going on.” As with the other leading options, the microbial substrate has to be replenished regularly - a top-up of 0.5l a week is fine - and is part of the weekly service programme for the system.

Peter Roberts, managing Director of Hydroscape, believes it’s in clubs’ own hands to avoid costly penalties over breaches of the act. “Golf courses must act sensibly,” he says. “They should be concerned about the law rather than panic about it.”

“Even when the Environment Agency visits a club about a waste management issue, it will give perhaps a few weeks to rectify matters,” he points out. “Only if their words are ignored are the EA likely to get tougher.”

“We are at the same stage with this legislation as we were with health and safety ten years ago. People think: ‘I don’t need to worry about this’.”

“Under the act, every golf club that has not installed appropriate waste water treatment measures should be contacting the Environment Agency to grant them permission to allow contaminants to go to ground. Whether or not the EA does so will depend on a number of factors. But clubs that say ‘we’ll wait’ are taking the risk that they do not suffer a spillage.”

Compliance with the groundwater regulations act has to be taken seriously, agrees David Mears, Managing Director of Course Care, and a long-established supplier of turnkey waste

“Golf clubs should be seen to be leading the way by complying with the groundwater regulations”

ANDY CAMPBELL, Golf Courses and Estates Manager, Carden Park

---

**Osprey Water Osprey Water Management**

From pre-construction surveys to installation, Osprey can provide industrial services for large bodies of water to glorious fountains with creative spray patterns.

**Osprey Washdown**

The “BioSeries” system from Osprey ensures when equipment and vehicles are washed, oil, wastewater and solids do not enter the water course or sewage system. The Osprey system is the simple, effective and low cost way to comply with legislation.

Welcome to Osprey, where peace of mind comes as standard.

CALL OSPREY TODAY

t: 01939 236677  f: 01939 236678

e-mail info@ospreyirrigation.com

www.ospreyirrigation.com

Osprey Irrigation Ltd, The Old Creamery, Airon Road, Wem, Shropshire, SY4 5BA

---

www.pitchcare.com/re
“Golf clubs that say ‘we’ll wait’ are taking the risk that they do not suffer a spillage”

PETER ROBERTS, Managing Director, Hydroscape

water management systems.

“What is essential is the installation of a dedicated washpad that prevents waste water escaping to ground and that will contain all wash water and direct it through a trap and into an interceptor or a recycling system.”

Clubs can ensure compliance in two ways” he says. “First, by fitting an appropriate interceptor (also called a separator) preferably with a grass trap and sand filter to help prevent rapid build-up of organic matter and solids in the interceptor. A Class 1 full retention interceptor with coalescing filter, auto shut-off valve and oil level alarm is now the only option for discharge to soakaway or stream,” Mears adds.

“Second, by installing a water recycling system. The ClearWater system that we supply is sited below ground, creating less visual and noise intrusion than above-ground alternatives, while also providing a more stable environment for the micro-organisms to work in.”

“We do not supply off-the-shelf microbes but ones specially engineered for the type of biological process required. Because we supply turnkey solutions, our system can be adapted to various applications however constrained the available space is. This is a major advantage because sites can vary considerably.”

“Much confusion surrounds the legislation and guidelines governing waste water management,” says Mears. “Most clubs would like to comply but they are unsure about which measures apply to them. One that certainly will is The Control of Pollution (Oil Storage) (England) Regulations 2001. With effect from 1st September this year, clubs are breaking the law if their oil storage, especially fuel tanks do not comply. A range of fully compliant fuel stations and sump pallets are available nationally from approved distributors such as Course Care.”

Jon Jinks, Managing Director of Osprey Irrigation Ltd, which supplies the Bio-series biological wastewater treatment system through its Osprey Washdown arm, underlines the message. “Ensuring that oil, wastewater and solids do not enter watercourses or the mains sewage system is not just good environmental practice, it now a matter of law,” he says. “We endeavour to make all compliance with legislation, simple, effective and economic over the long term.”

“Intended to be used by golf courses, other outdoor sports facilities, hire centres and vehicle repair facilities where vehicles and equipment need to be washed down on a regular basis, the Bio-series system removes hydrocarbons, pesticides, herbicides, solids and pathogens, rendering wastewater safe” Jinks adds. “Similar in function to Hydroscape’s system, the Bio-series utilises microbial media to transform organic contaminants such as oil, grease, herbicides and pesticides into carbon dioxide and water.

Available to purchase or lease, the system is said to be simple and inexpensive to operate, needs little maintenance, is quiet and produces no foul odours. It can be operated in recycle or discharge mode.

Canford School, Dorset, have installed the ClearWater recycling system and integrated fuel station from Course Care

Course Care: 01535 611110
Royal Birkdale
The Berkshire
Royal Porthcawl
Forest Pines
Moor Hall
Gog Magog
Osprey
01939 236677
Redbourne
South Herts
Rothley Park
The Addington
Royal St Davids
Hydroscape
01425 476261
Camoustie
Gleneagles
Turnberry
Royal Port Rush
Royal Mid Surrey
McKynnes Peninsula
Waste2Water
01782 373873
The De Vere Belfry
Sunningdale
Forest of Arden
The De Vere Carden Park
Painshill
Stoneham
BIGGA: 01347 833800

ESD Waste2Water

The leading environmental company with thousands of systems installed worldwide

Tel: 01782 373878
Fax: 01782 373763
Email: info@waste2water.com
Web: www.waste2water.com

Recycling Vehicle & Equipment Wash-Off Systems

Are you aware the groundwater regulations have changed?

With prices starting from as little as £9,000, why risk a £20,000 fine?

Call us now for a free no obligation site assessment and quotation.
Keep your turf in optimum health by putting pest and disease control at the top of your list

With the top products together with our total service package that includes, technical advice, free disease identification, soil and water analysis and much more we really do have the total solution.

So for a convenient way to maintain the health and quality of your turf – and maximise your profits – turn to Scotts, the total solution provider.

Scotts UK Professional, Paper Mill Lane, Bramford, Ipswich, Suffolk IP8 4BZ
Tel: 0871 220 5353 Fax: 01473 830386 email: prof.sales@scotts.com
www.scottsprofessional.co.uk
Healthy Grass and the impact of a surgical cut upon its appearance

COULD it be that there is one simple answer to today's highly demanding golf market?

The game of golf is changing. It is no longer about the competition between course and competitor, or the pure enjoyment and pleasure derived from playing the game. Television has enabled everyone, including the non-golfing community, to become an expert on course conditions and playability. Golfers have become both critical and demanding in a way that was never intended when the game was first played. Golfing customers no longer seem satisfied with a well prepared playing surface produced by highly trained and experienced course managers and greenkeepers, they now demand the conditions they see on TV - flawless greens and fairways, pristine ball roll, and above all, speed.

This whole change in emphasis has created a competitive edge throughout the industry, causing massive changes in the market at every level.

We have now entered realms of high risk and extreme stress to turfgrass. Greenkeepers need cutting edge tools at their disposal to meet today's challenges.

In response to this challenge mower manufacturers are developing a range of machines that would have made Edwin Budding, inventor of the cylinder mower, gasp in awe. In comparison to his simple machines, originally described to be a “potentially pleasurable pursuit for country gentlemen”, today's machines can only be described as cutting edge. Equipped with touch-screen controls, hydraulic drives and sophisticated transmission systems, truly they perform above the limit of normal expectations. In spite of these mower masterpieces, we still cannot produce the pristine results that golfers expect by them alone. Market research has indicated that the appearance of turf is the single most important factor when judging a course. Costs associated with achieving these elevated levels of satisfaction can be very high, not to mention time consuming.

Properly maintaining these mower masterpieces can be the answer to producing the high standards golfers now expect while at the same time saving time and money. Even though these mowers are increasingly complex, it still boils down to the principles originally intended by Edwin Budding - a cylinder blade passing across a bottom blade in a manner suitable to slice through blades of grass cleanly and consistently, at a predetermined height above the ground. One simple maintenance practice can be attributed to properly maintaining these components of the mower while extending the mower's life and improving the health of turf at the same time -

REGULAR SHARPENING
Poorly ground mowers tend to flail and tear the grass leaving bleeding rough edges

It’s not exactly a “new” technology.

In the late 1800’s the company now owned by Bernhard’s began building machines to grind and sharpen cylinder. By the turn of the century a range of four steam-driven grinders had been developed and they were selling hundreds of machines annually. In the mid-1900’s it became apparent how critical cylinder and bottom blade sharpness was. This was later reaffirmed by research carried out in the 1970’s. During that time an enormous amount of time was spent learning what went into producing superior turf conditions and how much mower sharpness influenced those results.

WHY do sharp mower blades play such an important role in mower maintenance and turfgrass health?

To begin dissecting this question we need to first establish the difference between a surgical or scythe cut and a scissors-cut and the effects of each.

Scissors require two blades travelling in opposing directions which will cut adequately if there is sufficient light contact along the length of the two blade edges. A scythe consists of a single cutting blade being drawn through the leaf tissue, damaging fewer cells in the process. Scissors will cut, but a scythe cuts better.

In a cylinder mower, one difference between a scythe and scissors action is the velocity of the cutting edge moving down the bottom blade. A properly ground and adjusted mower will operate in a scything action at up to four times the efficiency of an improperly ground or misadjusted cylinder functioning as scissors.

As the bottom blade is an equal partner with the cylinder blade in the cutting process, equal consideration must be given to proper grinding and in-season maintenance of the front and top faces of the bottom blade. If the bottom blade is not sharp and true, the cylinder blades will encounter inconsistencies travelling along it, resulting in an imperfect cut.

Even the most precise angles and adjustments can go awry if not maintained properly once the cylinder and bottom blade start to wear.

The single blade grinding method, made popular in the United States earlier in this century, applied varying levels of cut to each cylinder blade, resulting in an imperfect cylinder. Lapping was invented to make a single-blade-ground cylinder truly cylindrical again. Very simply, oil was mixed with sand and lathered on to the cylinder while it turned backwards (so the high cylinder blades wouldn’t bang into the bottom blade).

During the lapping process, the abrasiveness of the sand wears down the high blades to the level of the low ones, but also creates two curved, mirrored surfaces.

WORLD’S FASTEST GRINDERS

Why the world’s fastest grinders make for better running mowers and greener grass...

The EXPRESS DUAL spin grinder is much faster than backlapping with no messy cleanup. Fifteen minutes floor-to-floor for a cylinder grind makes lapping a thing of the past. And everyone knows a freshly ground mower delivers a better cut to grass than lapped mowers. Instead of grass blades that are torn; you get a smooth, surgical cut resulting in greener, healthier turf.

Find out for yourself, test drive a dual. Call 01788 811600.

www.bernhard.co.uk SHARPER SOLUTIONS... with BERNHARD
"Setting my equipment at no contact has produced significant savings on mowing equipment"

Cal Callaby, Equipment Manager, The Celtic Manor Resort

from the bottom blade and cylinder tip. The curve assumes the arc of the cylinder rotation. Unfortunately, these two mirrored surfaces act as a drum brake, with the rotating blades of the cylinder forming the drum and the bottom blade acting as the brake. To make a comparison, it would be the same as driving your car with the hand brake on! This causes considerable wear to the bottom blade and cylinder, and also requires more power to rotate the cylinder due to the drag factors involved.

Cal Callaby, Equipment Manager at The Celtic Manor Resort has over 15 years experience grinding on a spin grinder. Cal had this to say about the Express Dual 3000 and what it does for his mowing equipment: “Setting my equipment at no contact has produced significant savings on mowing equipment. There is less wear and tear on all the drive line components, especially belts. I also notice that we use a lot less fuel and I change blades much more infrequently since I began regularly sharpening the blades and setting the mowers to no contact.”

The definition of lapping can be broadened to be “any wearing process”, even that incurred by the wearing of cylinder blade and bottom blade during normal use of the mower. Normal wear and tear produces curved, mirrored surfaces just as intentional “paste” lapping does, but the surfaces are rounded and irregular - thus requiring greater and greater contact via tighter adjustment to maintain functionality.

Paste lapping can restore some of the cutting ability of worn cylinder tips and bottom blade edges. A well-lapped blade certainly produces a far better finish than a rounded and dull blade, but is a temporary fix until the cylinder can be properly ground and adjusted again. Grinder technology exists today that can allow a complete regrind of a greensmower cylinder in less than fifteen minutes, floor-to-floor. When asked about lapping, Cal had this to say: “We do not lap at all at The Celtic Manor Resort. We have a regular sharpening regime that’s fast and produces the type of results that are required. The quality of cut is exceptional, the plant healing process is accelerated, less fertiliser is needed because of this and we mow less frequently because there is no accelerated growth caused by the healing process. Disease frequency is diminished because the plant is not so vulnerable and we irrigate less because roots are stronger and longer and the plant is more drought tolerant.”

**HOW does this scythe cut effect the health and appearance of turf?**

We tend not to think very much about what is going on at the microscopic level where the grass is cut, except perhaps to acknowledge the difference between a rotary and cylinder mower cut.

Plant pathology research demonstrates just how damaging the use of improperly sharpened cylinders can be. Poorly ground mowers tend to flail and tear at the grass, leaving bleeding rough edges. The plant demands more nutrients to sustain growth and is more susceptible to disease due to the torn cellular structure. More water is required to replace plant moisture lost by transpiration and bleeding at the tips.

A microscopic inspection of the leaf tip area reveals that a clean, scything cut made by a properly sharpened, non-lapped cylinder results in less leaf surface area exposed to pathogenic infection, and lower evapotranspiration rates. The plant can use more of its nutrients for root growth rather than damage repair. Substantial cost savings have been documented particularly in regard to the reduced needs of fertilizer, fungicide and irrigation. The plant looks healthier because it is healthier. A further result is a noticeable improvement in the uniformity of surface. This gives rise to a more consistent ball speed and in general a better playing surface. Often greenkeepers have been able to raise the height of cut a little without the loss of speed on greens. This produces a definite stress reduction in the grass plant, which in itself can save the greenkeeper a great deal of time and stress to himself!

**Summing up**

There seems to be little doubt that regular grinding using very accurate machines does produce a matching surface to both blades that does not require any contact whatsoever. This clearly reduces the wear and tear on mowers that are expensive to replace.

With the scythe cut the grass is cleanly severed with surgical precision causing much less damage to the plant and it remains healthier. Nutrient supplies are redirected to more important functions like root growth rather than performing emergency repairs to the damaged leaves. Leaf tips are cleaner, reducing the risk of disease. The surface tends to be smoother, providing better playing conditions and a more appealing appearance. And isn’t that what it’s all about?
SHARP practice!

- Avoid the “mower doesn’t cut so I need to tighten it down a bit” syndrome! If you can avoid it, you will see dramatic improvements and savings on many fronts.
- Simply touching up the front face of the bottom blade every week on greensmowers, every two weeks on tees and monthly on fairway mowers will go a long way toward extending the functional life of a quality grind and save time by forestalling the need to lap.
- Grind groomers regularly for sharpness and uniformity, to ensure the health of the crown and horizontal stolons. Dull groomers act like crowbars, smashing through the rhizomes.
- For the same reasons mentioned above, sharpen verticut cylinders to reduce load and minimise mechanical damage to rhizomes and root hairs. The side edges of groomers and verticut blades should be dead square. That’s where the cutting actually takes place.
- Consistency across the green is as important as consistency from green to green. Imagine a triplex greensmower with one set of rollers “square”, one egg-shaped, and one properly round. One unit would hop-hop-hop across the green, the middle one would wobble-wobble-wobble and the third would roll-roll-roll. Spin-grind grooved or wiehle rollers to true them up for uniformity. You can also have it done at a machine shop if you don’t have a spin grinder. Important: After grinding grooved rollers, put a half-round file on each groove to dull the edges of each roller section.
- Reface bed bars to align new bottom blade properly. Truing up a bedbar can save half the life of a tournament bottom blade.
- Reconsider the timing of your cylinder sharpening. Sharpening cylinders just prior to high stress periods can reduce disease conditions.

**BARONESS**

Total Quality from Tee to Green

The all new LM184 floating head triple mower for golf courses and sports grounds

Saxon Industries, Everland Road, Hungerford, Berkshire. RG17 0DX
Tel: 01488 689400 Fax: 01488 684317 Email: horst@saxonind.co.uk

5 YEAR GUARANTEE

The Saxon 5 Year Guarantee covers the machinery against defects in manufacture and workmanship for a period of five complete years from the date of delivery. Subject to normal use, correct operation and maintenance as recommended.

www.pitchcare.com/re
I am sure the situation I am about to describe is similar nationwide, the role of managing and maintaining landscape features has changed beyond recognition.

Ball Games

Once upon a time landscape features were maintained in a horticulturally correct manner in order to preserve and enhance the health and aesthetic appeal of the features. Growing pressures on these open spaces has forced a new approach to be taken. Coupled with this many residents consider any gathering of children on an open space to be immediately associated with nefarious activities. So a slightly different approach is called for in order to manage open spaces in a way that is appropriate for their use. Open spaces are there for the enjoyment of all members of the community, both young and old. Some authorities deal with the “perceived anti social behaviour, ball games” by putting up notices “No Ball Games”. In my opinion this defeats the object of open space provision, after all if open spaces cannot be used for appropriate recreational use then we are plunged back into the Victorian age of parks where the instruction “Keep Off The Grass” was commonplace (this lasted well into the late fifties early sixties as I am sure many readers will remember).

Furthermore people who choose to purchase a property adjacent to public open space should fully understand the possible use of the site and not consider it an extension of their own back garden (Caveat Emptor).

I consider these pressures to be exacerbated in predominantly rural areas such as South Staffordshire where I work.

There are a number of options available in order to control but not wholly deny recreational activities, such as strategically placed shrub beds and carefully considered grass cutting regimes and finished heights. I feel this issue is down to certain members of the public who lack tolerance and understanding of the needs of developing young people within the community.

Global Change

The much talked about phenomenon of Global weather change has certainly impacted upon the management of Landscape features. We no longer can rely on seasonal compartments of the year, which traditionally dictated the required tasks, and frequency of maintenance. We now see grass growing vigorously from late March well into October or November. Not only does this

The changing role of MANAGING LANDSCAPES

By HOWARD M MEDLICOTT, Manager, South Staffordshire Council
present logistical problems in terms of putting machinery on waterlogged sites, but also puts considerable pressure on available finances to cover the extended growing season. Many people have extremely high expectations of the landscape within their community, which is commendable. However they fail to recognise the difficulties and I am sure would baulk at the prospect of increased community charge to meet the additional costs.

The extension of growing seasons has impacted across the whole species range; trees and shrubs enjoy a milder climate and demonstrate this with prolific growth. Consequently this brings with it other problems. Once again peoples tolerance of trees and hedges adjacent to their properties. We often receive telephone calls claiming “I like trees but” when they are told we will not take the top out of trees to increase the day light to their properties they get a little upset! Once again I say consider what is adjacent to your property before you make the purchase. The recent High Hedge regulations have, to some degree, addressed the issue in part but falls short of delivering the aspirations of aggrieved residents.

The milder climate over recent years has also benefitted pest and disease proliferation. Once again this year chafer grub has been prolific especially on the sandy soils.

I could go on however I think readers may die of old age!

There are continual new challenges, Key Performance Indicators’s, Performance Management, Health and Safety Legislation not to mention the up and coming Clean Neighbourhoods and Environment Act.

I have to stress these comments are my personal view and do not necessarily represent any policies or views of my employer.
COVENTRY’S Ricoh Arena is already proving a massive attraction. In the first three months since the opening of the £113 million multi-purpose complex on August 20, more than 250,000 visitors have been through the gates.

The Arena is the home ground of Coventry City but, in addition to football, other major events have taken place including a Bryan Adams concert, the B2B Midlands exhibition and a three-day conference on behalf of the Football Association.

The playing pitch system is Xtra Grass, a patented grass reinforcement system manufactured by Greenfields. It is a woven artificial carpet that allows natural grass to grow through; the end result is 94% natural grass and 6% fibre content.

The cost for the pitch construction, undersoil heating and irrigation systems totalled about £500,000.

Michael Finch is the Arena’s Head Groundsman, and he is very pleased with the way the pitch is performing and settling down. “There is another Xtra Grass system at Oxford, but our environment is very different. The Arena is much more enclosed, however we do have glass panels in the roof which have certainly increased the lux light levels.”

Michael has been involved with the new pitch since its conception and throughout the construction phase. Having the opportunity to see all the site preparation works and material installations has helped him have a better understanding of his pitch. He has also built up a good working relationship with all the parties involved, especially George Mullen of SIS, the company who installed the pitch.

According to Michael, working together and respecting the expertise and knowledge of each other has produced a pitch he is happy to work with. Michael has been with the club for 18 years and he still feels a touch of sadness not being at Highfield Road which was such a major part of his life. He has many fond memories of the old ground. However he is relishing the new challenges the Arena brings each and every day. How will it perform? What new skills can be learned? Not to mention the added demands and expectations of being a high profile venue.

“Working with the Xtra grass system will certainly test our skills as groundsmen,” commented Michael. “We need to learn how to bring the best out of the system. Our initial priority was to maintain grass cover and increase root and shoot densities while at the same time maintain pitch stability. The turf has responded well to our maintenance regimes, and already the pitch is revealing some interesting information, particularly on its strength and stability and that’s when the roots have only yet reached 100mm in depth.”

According to Michael the system seems to be providing a softer, more subtle playing surface than either the Desso or Fibre sand pitches.

“At first the players thought it was quite hard, but the pace and bounce has continued to improve as the season has gone on and now they have got used to it, they feel more comfortable on this surface than any of the others.”

There is one thing for sure, the pitch certainly produces a lot of grass. In the early stages the pitch was being cut at least seven times a week and, when the temperatures and growth were at their optimum, sometimes twice a day.
A height of cut of 25mm has been maintained since the season started and the aim is to retain this height throughout.

The root zone is only 125mm deep, therefore aeration practices are limited to this depth. Only a couple of aerations have taken place so as not to disturb the pitch too much in its early development. Compaction should not really be a problem yet as the pitch is still settling down.

Michael is also spending a lot of time monitoring his feeding programme. He intends introducing some seaweed products to help break down the backing of the Xtra Grass system. The quicker they can get the backing material to break down the quicker the root system can establish itself deeper into the rootzone profile.

A 14-21 day feeding programme has been devised by Scotts who have been working closely with SIS and Michael. Greenmaster and Sierrablen Fine fertilizer products have been used to establish some longer term growth patterns, followed by some regular liquid feeds every 4-6 weeks depending on soil analysis. A winter feed of Seaweed had just gone on, with a NPK ratio of 8:4:16, to maintain colour and some growth during favourable soil temperatures.

At the time of the interview the soil pH was a tad high at 7.7 but Michael was planning to reduce this to 6.5 over the following months.

FIVE staff work with Michael to help him manage the Arena pitch and training grounds. His deputy is John Ledwidge (20) who has worked his way up to this post having first become involved at the age of thirteen when he used to help out on match days. John then took up a fulltime career in groundsmanship at the age of 16, making good use of his school grades to help him move swiftly through and pass NVO levels 2 and 3 at Warwick College, Morton Morrell. The other members of staff are John Baker, Andy Lee, Neil Matts and Dave Rees who, like John, are currently enrolled on a course of education at Morton Morrell to improve their knowledge and understanding of the sports turf industry.

Michael spends most of his time at the Arena, often enlisting the help of John to prepare the pitch for matches. However, on match days, if required, all the staff can be called in to help prepare the pitch. Michael nearly always does his final match preparations on the morning of the match, usually starting work at 7am with a routine of inspection, mow/roll, over mark and water, if required. During the summer watering prior to games did take place, however, since September, only occasional irrigation regimes have been required due to the climate conditions. Once the game is over the staff commence divoting, with the aim of getting it all repaired before they go home. In the main, divots are few and mainly consist of slight surface scars. However, Michael has noticed that bladed boots are more damaging than studs. “Studs go in and come out, whereas blades cut off a swathe of turf,” he said. “Blades are becoming a big concern for groundsmen at all football league clubs.”

The onset of the recent cold weather has allowed the under soil heating system at the Arena to be tested. The system is shared with other parts of the ground and, at first, there were a few teething problems. Michael is now happy that these have been sorted. The system has now been running for a couple of weeks, maintaining a soil temperature of about 8 degrees C at the surface and about 10 degrees C at the base (125mm) depth. The intention is to maintain these...
temperatures to keep the grass plant active and stimulated."

Grass cover is very good, however Michael is keen to keep as much growth on his pitch as possible and, when temperatures are favourable, he will look to overseed any bare areas. He is prepared to wait until the summer renovations for any major oversowing to be completed, even though the window of opportunity will be small. The Arena will be staging a Bon Jovi concert in June which, in effect, only allows a couple of weeks to complete all the renovations required.

Work planned include raise mowing the pitch, top dressing with 50 tonnes of fresh rootzone material and then sowing a mixture of Barenbrug Bar 7 using several methods of seed drilling and sowing techniques.

According to Michael the early success of the pitch can be attributed to three key factors - using quality products and services, working closely with the manufactures and service providers, and keeping the Arena’s management and SIS informed of how the pitch is performing. “If I can justify what I am doing the club will support my needs,” said Michael.

Some examples of this can be seen with Fleet and Dennis who have worked with Michael and his team to improve the service delivery of their products. Fleet have provided a Kombi linemaker, modified to produce an even better line with the introduction of additional paddles at the side of the spray jet. Michael has been impressed with the Kombi and the back up from Fleet.

The same goes for Ian Howard at Dennis, with a few refinements to his mowers. Grass collection boxes have been modified...
“If I can justify what I am doing the club will support my needs”

for better collection, and the roller on the front of the machine has been redesigned to incorporate more bushes and reduced surface area to minimise grass flattening prior to mowing. Dennis have also changed the gearing on the motor drive, so that the mower covers the ground more slowly but continues to offer a higher output of blade rotation speed to increase the cuts per inch of ground covered.

Additionally, the blades have been relief ground to improve the cutting quality. The Arena sward has suffered some minor disease outbreaks in the form of fusarium, however this was successfully controlled by the use of Daconil and Heritage fungicide treatments. Michael is keen to reduce the use of fungicides once he has managed to increase a healthy balance of bacteria populations in his soil profile.

Michael is confident that once he has established and can maintain an optimal rooting depth of 125mm the job of managing and maintaining a quality playing surface at the Arena stadium will be made easier and, in the long term, provide a surface which Coventry City players and fans can be proud of.

There is no substitute for hard work and commitment. Judging from my visit there seemed to be a good working ethos being generated by Michael and his staff. I believe the future of the new Xtra Grass pitch at the Arena stadium is in good hands and will provide a quality pitch for years to come.

Raising the bar...

Trimax lifted the bar 12 years ago with the original Stealth, setting a new standard in rotary wing mowers. Trimax are raising it again with the release of Stealth Series 2.

In keeping with the company's policy of continuous improvement the new StealthS2 now features full width striping, infinitely variable height adjustment and downward wing float. Not to mention Trimax's new LazerBladez™ cutting system.

For more information or to arrange a demonstration of just how high that bar is. Contact:

Trimax Mowing Systems UK
TEL 01933 652235
or EMAIL info@trimaxmowers.co.uk

www.trimaxmowers.com
In June 2005 Matthew Rainey was appointed the new Head Groundsman at Nationwide Conference side Forest Green Rovers FC to oversee the maintenance and management of their ground.

I have always wanted to work in football and now I have this appointment I am looking forward to this opportunity with relish, especially as there are some interesting challenges ahead of me. Not only have I got to manage and maintain the existing stadium pitch, I am also involved in overseeing the construction of the new stadium pitch currently being finished by White Horse Contractors.

The impressive new stadium is housed on surplus land at Nailsworth Primary School, about 200 yards from the current ground. The existing ground has been sold off for building new housing.

The new stadium is scheduled to be ready for the start of the 2006-7 season.

Prior to coming to this club I had been involved for around 8 years working in both horticulture and sports ground management. I used to work for a local contractor looking after school pitches and parks open spaces. Within that remit I was in charge of football, cricket and fine turf (bowling green) facilities.

I love this work and have so far furthered my knowledge with NVQ level 3, both in sports turf and horticulture at Hartpury College.

When I got to Forest Green Rovers, I inherited some of the usual problems such as black layer, a soil pan and a surface that was predominantly Poa annua. In previous seasons these had caused a number of problems with the pitch, particularly the fact that the surface was quickly prone to waterlogging after rain and getting too dry and hard in the summer.

Root growth was less than 30mm which, in itself, caused many problems. My initial aims were to rectify these problems by increasing the frequency of cultural practices, in particular aeration.

I also did more scarifying, overseeding and arranged a balanced feeding programme with the help of Rigby Taylor. I am not going to resolve the Poa problems in one season, but I can improve its management to help me get through the fixture list.

Understandably with the new stadium being built, the club had spent only a marginal sum of money on the end of season renovations, so much of the remedial work since has had to be carried out by myself.

I have been trying to break up the pan with some deeper and more frequent varying aeration works. Spiking is done weekly (when conditions allow) to different depths, in fact the benefits are beginning to show, aeration holes now tend to stay open for longer than a week. The pan is about 50mm below the surface and it is encouraging to see the roots getting down to this sort of depth now. When we have rain, the pitch does drain far quicker than it did only a few months ago.

With three teams (1st team, Women’s team and a County team) using the pitch there is plenty of work generated for me. To date we have had more than 25 games on the pitch and some training sessions and by the time this season finishes we will probably have held over 70 fixtures. This figure will be many more fixtures than the club was able to host previously.

I do not have any other staff to work with me, but during busy spells I can call upon some local Greenkeepers for help.

The Chairman of the club is very supportive and will always listen in...
regard to investing in machinery and products for the pitch. In fact the club has always been forward thinking.

When I first arrived the pitch was being cut with the McMurtry MAS (robotic) Mower. Contrary to what some might think it is a godsend, allowing me to get on with other jobs while the pitch is being moved. In the summer months when the grass was growing quickly, the mower was cutting the grass during the day and night, so that I could do other jobs. This also meant that the grass was regularly being ‘tipped’, encouraging the plant to thicken up much quicker than I’ve noticed before.

I am very pleased with this technology, the mower is very efficient, and rarely breaks down. Really there have only been the odd times when the navigation lasers have been influenced by the weather, by that I mean a low autumn sun that has interfered with the guidance system. However when it does happen the mower has stopped its operation and then sent me a text asking me to reset the machine. Other than this it has saved me considerable time and allowed me to get on with other important operations such as spiking and divot repairs, overseeding and working on the new school/training pitch. I feel that Groundsmen do not like it in the stadium and perhaps it would benefit on a training ground more, i.e. when players go home after their hard day’s work (at 1pm) the mower can roll or cut one pitch as you spike and mark out the next pitch. The battery life is about 6 hours maybe a bit longer, certainly enough to cut two or three pitches in an afternoon, saving those days that seem to turn into evenings during the growing season.

In particular, I have been able to spend time forking the high wear areas such as the goalmouths and these are showing significantly less wear for the time of year. I have lost grass in these areas, but they are still firm and, despite the rain, don’t hold water like they did at first.

I have got the use of a Dennis 34 inch cassette mower that I use to groom, brush, roll and cut the pitch, when required, this is also a fantastic system, allowing multiple operations to be carried out.

In the relatively short time that I have been at Forest Green Rovers I have already seen some benefits in root growth, which in turn has helped maintain the grass cover; grass cover is still at 70%, a good cover for this time of the year given the use the pitch has already had.

White Horse Contractors took over the contract for constructing the new pitch and they have tried to finish it before the recent poor weather set in. The surface has been seeded, but will probably require an overseed in the spring before a full cover before the club start their pre-season training and games next July.

The new pitch is basically a soil-based pitch that has a primary and secondary drainage system. This comprises a main drain and laterals at 12 metre centres and these have been topped at right angles with sand bands at 1m centres.

The drainage profile has then been covered with a 70/30 rootzone to a depth of 125mm and over sown with Rigby Taylor R14 seed mix.

I am confident that the pitch will be ready for the forthcoming season 2006/7, and I am looking forward to being part of this new chapter in the history of Forest Green Rovers Football Club.

TriCure
The Better Wetter
A Proven solution for dry patch and hydrophobic soils

Water works better with TriCure, the advanced technology wetting agent with a proven track record. TriCure prevents and treats dry patch and hydrophobic conditions **in all soil types**, aiding even water penetration and the creation of a healthy rootzone to encourage root development.

Non-uniform water distribution

Even distribution with TriCure

The result... stronger, healthier, better looking turf.

1010 Cambourne Business Park,
Cambourne, Cambridgeshire CB3 6DP
Tel: 01223 597834
E-mail: info@headlandamenity.com
www.headlandamenity.com
Do you follow BEST PRACTICE?

TIME and again we are told in articles, official documents and at meetings to ‘Follow Best Practice’ particularly when using pesticides as an essential part of an amenity programme of work. But where can you get the information to help plan and carry out work in a way that will meet this standard?

An excellent starting point is the web site www.amenity.org.uk which has been set up specifically for the amenity sector and to provide help for users, advisors and contractors.

Regular updates

The Amenity Forum’s website is a dynamic site, updated regularly with product information and news. So it is worth a visit each time you are planning to use pesticides to ensure that you and your organisation are up to date.

From the introductory Home Page you can access a “What’s new” section, a “library” with extensive technical information, a completely new “Product Directory”, a rapidly growing Advisory Brief section and details of the Amenity Forum. “What’s new?” ensures regular visitors are kept up to date with developments in the sector. Where you need more information, then the library provides more in depth technical information.

Do you remember the Amenity Handbook and how useful it was with all the information in one place? Now technical data from that publication has been updated and eleven topics are all available as individual PDFs in the library.

A completely new Product Directory gives you several search options including by problem, area of use, active ingredient or application and directs you to suitable products. Then you can gain access to product labels and other important data, such as MSDS and Environmental Information Sheets. The individual companies keep their own product information up to date and include new ones as soon as they become available.

Advisory Briefs

The newly introduced ‘Amenity Advisory Brief’ deals with topical problems, outlines the solutions and directs you to further information, either within the www.amenity.org.uk website or other online information sources. There are already six briefs available including ragwort control and fungicide resistance in turf management. More are planned for the coming season.

Water protection

Key practical ways for the Protection of Water when using pesticides at amenity sites and essential considerations for Integrated Amenity Management are clearly set out on separate pages.

Still short of Information?

Go to the Contact Us page where you will find company details and a general enquiry contact info@amenity.org.uk

Once you have the information what else could help? The User section has separate pages providing specific guidance on how to achieve ‘Best Practice’ tailored to your needs, whether you are a customer, contractor or advisor.

The “Amenity Forum” section is aimed at bringing the amenity sector up to date on the issues and developments impacting on our industry. The Amenity Forum pages give the Terms of Reference, list of members and minutes of meetings. This part of the web site does provide an insight into a host of strategic areas such as where the sector is going, future regulatory and training requirements. The Amenity Forum is fast becoming the preferred consultative link to Government on these subjects. If you are a member of one of the organisations listed the opportunity is there for you to contribute to the debate and ensure that any developments are in line with ‘Best Practice’.

So if you want to follow or help create ‘Best Practice’, www.amenity.org.uk is the best place to start.

FRANK NEWBERRY, Trainer and Careers Counsellor: I confess that I get more than enough excitement speaking at conferences, running workshops (and working with Ellie Tait) – that my days off are spent mainly relaxing. With three grown up sons away from home now; one in LA, one currently in New Zealand and one in Birmingham, I can spend a typical Saturday morning watching Soccer AM on Sky. I enjoy seeing the ever increasing number of Groundsmen who appear on this popular cult TV show. On Saturday afternoons I like to shop for indulgences and on Sunday mornings I go to church with my lovely wife to repent of my indulgences! On Sunday afternoon I try to resist watching Manchester United on the television by taking the 2 mile walk around the beautiful lake that is just two minutes from my front door. My favourite spectator sport is Japanese Grand Sumo which I follow on the web. Being self employed I also really enjoy being able to visit friends and family as well as clients on weekdays.
In the first part of this two-part article we reviewed techniques in identifying soil physical problems. In this second section, various means of correcting deficiencies will be explored and the pros and cons of each method will be evaluated.

by MARTYN T. JONES, National Turfgrass Foundation

Introduction

Whilst turf managers use a diverse range of ‘soil aeration equipment’, few actually achieve the objective of ‘effective soil aeration’. All too often, it is assumed that punching holes in a soil will automatically result in improved soil aeration. Not only is this assumption inaccurate, in many instances, it can be counterproductive and actually reduce soil aeration properties.

The term ‘aeration equipment’ is misleading. The vast majority of machines would be better categorised in a more general term of ‘cultivation equipment’. Some of the machines may accomplish a degree of soil aeration but the majority have little effect. However, each has an alternative role to play in the many forms of ‘cultivation’. Soil aeration is a specific objective and requires precise techniques to substantially improve the aeration porosity of a soil.

Each piece of equipment may perform one or more of the following ‘cultivation’ objectives:

1. Compaction relief
2. Rootzone aeration
3. Drainage improvement (both surface and sub-surface)
4. Thatch management
5. Soil modification (when accompanied by topdressing)
6. Improving irrigation efficiency
7. Pan busting
8. Layer disruption
9. Contour changing (allowing settlement after coring)
10. Enhancing fertiliser efficiency
11. Seedbed preparation
12. Stolon and rhizome pruning

The first step in achieving success with a cultivation programme is to accurately identify the cause or causes of the problems and then determine the most appropriate corrective techniques for the prevailing conditions.

The potential for soil aeration

On average, 50% of the soil is mineral/organic matter. The other half, the ‘pore space’, is occupied by air and water. Varying proportions of air and water can occupy the pore space or it may be entirely filled with water, i.e. saturated.

The proportion to which the soil pore space contains water is referred to as the ‘soil moisture content’ and is expressed as a percent of the total soil volume. In a soil that consists of 50% mineral matter and which has a soil moisture content of 30%, the remaining 20% of the soil volume will contain air.
Balancing soil air and water

It is important for a soil to contain adequate moisture, but it is equally important that a soil contains adequate air-filled pore spaces. These air-filled pores provide routes for gas exchange with the atmosphere. This is termed ‘soil aeration’. Adequate soil aeration is needed to create a healthy environment for turfgrass roots and plant-beneficial microbes living within the soil. Turfgrass roots and beneficial microbes are ‘aerobic’ organisms; that is, they require oxygen for respiration. They consume oxygen in their respiratory processes and generate carbon dioxide (CO₂). Efficient soil aeration is necessary to prevent soil oxygen depletion and the accumulation of excessive CO₂ or other, toxic gases. As the rate of metabolic processes of organisms increase with a rise in temperature, the higher the temperature, the greater the demand for oxygen and soil aeration. Consequently, the demand for soil oxygen is at its highest during the summer months and at its lowest during the winter in the UK.

The ideal balance of water to air in the total pore space should be 70% water and 30% air. For adequate soil aeration, it is generally accepted that a soil should contain at least 10 to 20% air filled pore space for most of the growing season. If the air filled pore space is less than this for extended periods, the soil is considered to be depleted of oxygen, i.e. ‘anaerobic’. Waterlogged and anaerobic soils will result in turfgrass decline by inhibiting root respiration. For example, a rootzone containing 20% air filled pores would become completely anaerobic (without free oxygen) after 24 to 48 hours if gas exchange did not occur. A rootzone with less than 10% air filled porosity can become anaerobic within 24 hours.

Pore Size influences water and air movement

Soil pores are generally classified according to their size. And it is pore size, rather than total pore space, that strongly influences the water and air content of a soil at field capacity. Macropores, those larger than 75 µm in diameter (1000 µm equals 1 mm), will readily drain and mainly assist water infiltration, percolation and soil aeration or gaseous exchange.

Mesopores, those between 30 µm and 75 µm in diameter, will lose some of their water during the three day period leading to field capacity. Mesopores allow water to move more slowly. They enable capillary water to move to roots and soil moisture to be redistributed within the soil. However, the importance of capillary movement should not be exaggerated as the water moves very slowly and generally only over short distances.

Micropores, those less than 30 µm in diameter, do not readily assist water to move through the soil but retain water within it and serve as a storage reservoir. They will only lose their water through root absorption. Therefore, a soil that is dominated by micropores will retain far more water than the desirable 70% of total pore space. A soil that is totally dominated by micropores smaller than 30 µm in diameter may have 100% of its total pore space occupied by water at field capacity. In such an instance, the soil water content at field capacity will equal saturation.

There must be an extensive and continuous network of macropores

Oxygen diffuses through water 10,000 times slower than it does through air. Consequently, water-filled pores such as micropores and many mesopores can easily become deficient in oxygen, causing problems to turfgrass roots and microbes. Macropores, on the other hand, are the major aeration pores and it is essential that a soil has an extensive and continuous network of these larger pores to ensure adequate soil aeration.

What is soil compaction?

Soil compaction is defined by an increase in bulk density and a reduction in total porosity. However, compaction does not affect all pores equally. Principally, there is a loss of macropores and a proportionate increase in micropores. By reducing the proportion of macropores in a soil, the potential for drainage and aeration are reduced. In all but the sandiest of soils, severe compaction can eliminate all macropores.

Understandably, the most compacted layer within a soil is found in the top 100 mm where foot and vehicular traffic is most intense. It is this zone that most severely restricts gaseous exchange.

Choosing the most effective equipment

Any mechanical ‘soil aeration’ operation must increase the total macroporosity of a soil to be effective. All too often, equipment that is prescribed as an ‘aeration treatment’ fails to increase the number and extent of macropores.

A primary concept that is often overlooked is that any implement, on entry into a soil, will cause compaction and reduced aeration potential. Soil particles are pushed downward and laterally to accommodate the implement, thereby increasing the bulk density of adjacent soil and causing compaction. Simultaneously, macropores are reduced to micropores and aeration porosity diminishes. It is inevitable and unpreventable. The extent of the damage will depend on the diameter of the tine or, as in the case of a hollow tine, the thickness of metal.

Many so-called ‘aeration machines’ only enhance surface drainage by creating a hole. They do little to increase the number or frequency of macropores.

An implement can only have a positive effect on the soil, either during its brief period in the soil or during its removal from it. So, let us consider the various options and their effects. Also, let us consider how different soils and their moisture contents might influence the outcomes.

Vertical entry and removal tines

Any machine that is designed so that its tines enter and leave the soil in a vertical direction must rely entirely on the withdrawal sequence to disrupt the soil particles and produce macropores. In a moist to wet state, a soil is well lubricated and, in such a condition, any implement is going to withdraw with minimum friction and, therefore, minimal upheaval. Consequently, no compaction relief will occur.

The drier a soil is during withdrawal of the tine; the greater will be the upheaval and potential for compaction relief. However, even where friction on removal of a tine causes a degree of ‘heave’, the disturbance is generally restricted to horizontal planes of weakness within the soil, e.g., at interfaces between soil layers or along rootbreaks. These types of implements are of limited value in achieving an improvement in soil aeration. Instead, they may produce holes that merely enhance surface drainage by providing a by-pass route through surface layers down which surface water can escape to lower horizons. The holes created will also accelerate evaporation from the soil and result in drier surfaces. But, the destruction of macropores on entry of the tine will have an adverse effect on soil aeration porosity.

The most effective machines of these types in achieving a degree of soil aeration are those fitted with needle tines that create a large number of small diameter holes at very high frequency. Generally though, this type of implement should be considered as ‘surface drainage enhancement’ cultivation systems; not soil aeration machines.
Trailing, rigidly fixed-tine spikers and slitters

Let us now consider pieces of equipment in which the tines are fitted rigidly to a drum, plate, or bar. As before, if a soil is well lubricated; minimal disruption will occur and the tine will merely create a slit in the soil, causing varying degrees of compaction and smearing. It is unlikely that soil aeration is enhanced. If a soil is in a drier state and friction is present; upheaval is likely but, again, there is a tendency for the soil to fissure along horizontal planes of weakness. It is for this reason that the turf tends to peel off at the depth of rooting. These implements may be effective in disrupting compacted layers or pans within the soil but are not very efficient at enhancing overall soil aeration.

Forking action: popularly referred to as verti-draining

We now turn to machines with a forking action, such as the Verti-drain, Soil Reliever, etc., that are designed to heave the ground. These can be effective if used when the soil moisture content is relatively low. Maximum heave and fissuring will occur in a dryish soil. The extent and direction of soil fissuring and subsequent soil aeration, will be regulated by many factors: soil texture, structure, depth and expanse of rooting, and previous cultivation operations. However, a dry soil can cause unacceptable surface disruption and many turf managers choose, instead, to carry out the operation when the soil is in a moist to wet state.

Under those circumstances, the effects are very different. The heaving action now becomes a subsurface compaction action where soil particles are compressed together. A relatively large void may be formed but it is at the expense of surrounding soil macropores. If a soil is very wet, the implement will, at best, only produce surface drainage holes and soil aeration is minimal. In some cases, it can severely decrease the potential for extensive soil aeration. These implements have proved very popular because of their potential to dramatically increase surface drainage rates. However, there is a major risk of achieving surface drainage at the expense of good internal aeration.

Air, water and amendment-injection implements

A number of machines are designed with very different principles in mind. Rather than relying on mechanical cultivation, they use either air- or water-injection to fashion a macropore system. The Sisis Aer-Aid System injects air; the Toro Hydroject blasts water; and a more recent introduction to the European market, the Dryject, uses water, followed by sand or another soil amendment, to modify the soil texture. Each of these machines is more effective in establishing a network of macropores and are, therefore, more deserving of the term ‘aeration’ equipment.

The Aer-Aid has the potential to increase a soil’s macroporosity by preserving existing macropores and enlarging some mesopores. Theoretically, the mode of action pushes air through the existing pore system, thereby relieving compaction and encouraging an extensive and continuous network of macropores. The number and extent of macropores formed will depend on various soil characteristics. Nevertheless, such a machine is a dedicated aerating implement.

The Hydroject, that injects fine bursts of water into the soil at the depth of penetration, will also create macropores and enhance soil aeration. It is generally more effective in coarse textured soils where few fine particles will migrate and clog pores. The machine can also be effective in the treatment of localised dry spots and general soil hydrophobicity.

The Dryject combines the benefits of water-injection and soil modification. After establishing a hole and enlarging surrounding pore spaces by means of a powerful jet of water, the machine introduces dry sand or other amendments to stabilise the macropore system that has been created.

Preservation of existing macropores and the creation of additional ones should be the aims of good soil aeration. The network of macropores must be extensive and continuous so that oxygen can readily diffuse to roots and soil microbes. As turf managers we must aid air movement uniformly throughout the rooting zone and not just limit it to sporadic vertical holes.

Each type of implement must be carefully considered and a knowledgeable selection can then be made to adequately correct the deficiency. Think hard about the problem and even harder about the remedy.

This disease is caused by the fungus Sclerophthora macrospora and unlike many of the fungi that caused disease in cool-season turfgrasses, this fungus is an obligate parasite. What this means is that the fungus must not kill the infected turfgrass plant because it needs to live on living plant tissue. In this respect, the fungus is similar to the rust fungi that can also cause turfgrass disease - but that is where the similarities end.

S. macrospora is capable of infecting and causing disease in most turfgrasses but it has become a relatively common problem on both bentgrasses and annual meadowgrass in close-mown swards. The mycelium of the fungus grows through the infected plants and will produce both resting spores within the infected tissues and, once the conditions are right, it releases motile spores which actively move in water films across the sward. Once present within the plant, the fungus can remain for many years, possibly the entire life of the plant, but symptoms of the infection will only become apparent under cool, wet conditions.

Initially, the infected sward will appear patchy as plants start to discolor and become pale and yellowed. Close analysis of infected leaves often shows a mild red colouration of the cells containing the resting spores but this is often only apparent under high magnification. As the disease progresses, individual plants are stimulated to produce excess tillers and this results in a tufted appearance to the sward. Close examination of the yellowing patches will also reveal a reduction in root development that will enable the tufted plants to be removed easily from the sward.

Since the causal fungus needs free water in order to complete its life cycle, the symptoms of this disease are often seen in low lying areas or in parts of the turf that are prone to holding water. Infected plants can often be removed through verticutting or other grooming practices but management of the symptoms can be achieved through reducing the turf wetness and improving surface drainage. There is limited information regarding fungicide efficacy in managing this disease but general opinion would suggest that cultural management with regard to improving water movement away from the sward is the most effective means of reducing yellow tuft symptoms.

Dr Kate Entwistle MBPR, The Turf Disease Centre
Top Ten Tips for Motivating People

At a time when low pay and a lack of resources in some organisations has brought grounds staff motivation and morale to a low point - regular contributor Frank Newberry, in this first article will focus on self motivation and in the next issue he will look at motivating others.

Definitions

For the purposes of these articles I am taking the expression 'low motivation' to mean: 'lacking the will to work well', and the words 'low morale' to mean something like 'low spirits' and 'aimlessness'.

A Paradox

First it should be noted that motivation is an individual thing e.g. I know of a number of people who continue to be motivated and work hard despite low morale in their organisation. On the other hand I have seen very high morale in a work team in which no one bothers to make an effort - perhaps because they are too busy enjoying each others' company.

Top Tips for Self Motivation

1. Check your references

There is research that shows about half of all people in employment are motivated to a considerable extent by what others might think of them. These people are known as 'other' referencing. The 'others' in their work lives might be the boss, their work colleagues, their own staff and so on.

Are you 'other' referencing? If you are then perhaps you need the regular feedback and approval of others in order to feel confident that you are doing a good job. If you do not get regular feedback you can start to lose confidence in your job, in your boss and you may even feel that your work cannot be particularly important to anyone because no one ever seems to make reference to it.

Are you, on the other hand a 'self' referencing person? If you are then you are less interested in what others might think of your performance. You perhaps know better than them what constitutes good work and therefore you would not seek the approval and feedback of others on such a regular basis. Basically you know from day to day whether or not you have done a good job of work.

2. Do some preventative maintenance

Whether you have the 'higher maintenance' needs of the 'other' referencing person or you are a 'low maintenance' self referencing person you will need to communicate your expectations to others. For example when I was employed as a management consultant my work life was exciting but very stressful. To ease the pressure a bit and to sustain a high performance I told my boss that I loved the work but that I needed him to give me feedback and recognition on a regular basis. My boss readily agreed and stipulated just one condition which was that I would in return give him regular feedback and recognition. When I blanked and questioned why a team member should be giving the boss recognition he pointed out that he never got any recognition from his boss. We quickly agreed the deal!

Now if you are low maintenance and a little embarrassed by praise and recognition then tell others but make sure to point out those occasions when you feel recognition is appropriate. No one likes to feel taken for granted especially when they have made a big sacrifice or an extra effort. There will be more about this when we look at motivating others in the next issue.

3. Get Your Values Straight

One of the major de-motivators for people is the feeling that whilst their work or performance may be of value, they themselves are not valued as people, as individuals. Many feel that their employer just wants the 'sweat of their brow'.

If you are one of those that want to be valued by others then you will need to work on what other people value. Research into which personal qualities people value in others at work is revealing. People particularly value certain personal qualities and characteristics which have been identified as being:

1. An interest in others (they do not just talk about themselves)
2. The self discipline to avoid complaining about things
3. An appropriate sense of humour at work
4. An open and honest manner
5. A broad conversation base
6. Good verbal skills
7. Tact

QUESTION: Which are the three items on this list that most groundsmen and greenkeepers tell me they need to work on?

ANSWER: Numbers 2, 5 and 6. I wonder what your three would be and what you might do about them in order to enhance people's evaluation of you and with it your own personal motivation?

4. Cheer up, you might be ill!

If you are feeling lethargic and 'down in the dumps' the good news is that it might not be your motivation at all. The bad news is that it could be stress or one of a range of undiagnosed illnesses that manifest themselves in this way in their early stages.

Just one example; there are apparently one million undiagnosed diabetics in this country, some of whom will wait so long before they have a check up that they will be dependent on medication for the rest of their lives. Others who do not get a check up at all will die undiagnosed.

If you suspect you may be ill - be warned - the deterioration can be so slow that you barely notice and you may tend to assume it is something else. So get down to your local GP and have a full check-up, blood tests and all.

5. Set and Review Your Motivational Goals

There may be wisdom in you taking time to set and review some goals to do with the following 'no cost' and 'low cost' motivators. These are some of the key things that cause people to work well willingly. N.B. it must always be acknowledged that people

“Cheer up - you might be ill!”
can be happy and work really well or unhappy, and work just as well. The four ‘no cost’ and ‘low cost’ motivators are:

**Meaningful work** - research has shown that most people are motivated if they find the work that they are doing is meaningful in itself e.g., working in the open air, getting the training you need to do a good job and seeing results at the end of the day.

I spoke to one of the top cricket groundsmen recently and he confided that he wants to spend more time working on the grounds. Administrative tasks now dominate his personal work schedule and it is just not as rewarding for him. He may not be the only one who needs to set himself a goal to get a better balance in his work, perhaps delegate more of the administrative tasks to other people.

If you are an older person it may be meaningful for you to set yourself a goal to leave a legacy to future groundsmen and greenkeepers by coaching and mentoring them so that the profession itself gets the benefit of your wide experience.

If you are a younger person doing a lot of boring or dirty jobs then set yourself a goal to stop waiting for the perfect boss (I waited 20 years and he never showed up). Try to be positive about yourself. Perhaps take the initiative and tell your boss privately that you are interested in a career and that you are looking for more demanding work. In the meantime you could ask him/her just how valuable (and meaningful) all those dirty jobs are and what would be the consequences if they were not done well or not done at all.

**Recognition** (Please see ‘Check Your References’ above). I once had two very competent people working for me. One was ‘high maintenance’ and wanted a little recognition most days I saw him and the other was ‘low maintenance’ and only wanted praise when his work or effort had been exceptional. By carefully meeting both sets of expectations I was able to get good work from both, particularly in very challenging circumstance.

Time-wise the difference was negligible from my point of view - it only takes a few seconds to pay a compliment after all.

Perhaps you need to set a goal to ensure that you get the recognition you need to maintain a good standard of work.

**Feedback** - Research has shown that most people are better motivated when they know where they stand at work. If they know their work is satisfactory or unsatisfactory they can do something about it. If no one says anything they may not know the difference.

They tend also to work better if they know what their colleagues (including their boss) think of their work. They work better if they know how well the grounds department is rated by other departments. If they are highly regarded, they take pride in maintaining a high standard of workmanship. If there is constructive criticism, they will pull together to change people’s perception of their department’s performance. They even work better (when they are not kept in the dark) and they know how the organisation itself is doing in the market place or the wider world.

Most Head Groundsmen have indicated that keeping people in touch in this way is the thing they have most neglected in the past, mainly because they did not realise its significance. Perhaps you may need to set a goal to make sure your boss keeps you better informed.

**Autonomy** - Finally it is important to note that most people are better motivated if they have the right level of supervision. Do you work better if you are left alone - even when doing completely new tasks? Or do you prefer fairly close supervision even on familiar tasks?

You may find that the level of autonomy you prefer will change over time. Whilst less experienced people want clear direction they want to be left alone so that they do not feel so self conscious.

Many older workers like the autonomy to choose their own methods of working because they feel they are experienced enough, and it shows a lack of respect to not trust them to do a good job.

Again if this section raises issues for you then you may need to set yourself a goal to communicate your expectations to your boss and perhaps help him/her to become the best boss they can be. I suspect that they will not be able to manage this feat without your help.

You can catch up with Frank Newberry at Harrogate Week from the 24-26 January. He will be in Hall Q at the Careers Fair coaching people one-to-one on CV content, job seeking ideas, interview techniques and salary negotiation skills.
ET, not the Extra Terrestrial

by COLIN MUMFORD

ET, the often quoted, but never quite explained. What is it? and should we be interested in it? Does it mean evergreen turf? electric trimmers?, elm trees? or extra-terrestrials? The answers to these and many more questions are deeply embedded in the soil-plant-water continuum, and this article aims to unravel a tiny bit of its mystery.

Turfgrass water use is related, amongst other things, to regulating the turfgrass’ temperature. This requires the grass plant to lose water by what is essentially sweating, and is termed ‘transpiration’. When this loss of water is combined with the loss of water from the soil - through evaporation, we arrive at the term ‘evapotranspiration’ or ET. Consequently the rate of ET is likely to be different from one playing surface to the next. So how do you determine ET?

THE methods employed for determining ET range from direct measurement with lysimeters, reference measurements with atmometers such as an evaporation pan or a porous porcelain plate, and empirical models that estimate ET based on weather data. But before we look at the different methods, a few terms need to be explained. Firstly, ‘reference crop evapotranspiration’, or ETo as it is referred to. This is a reference point that is used in determining the ET for all crops, and is a hypothetical crop that closely resembles an adequately watered grass sward with a uniform height of 0.12 m. The actual ET for the crop - turfgrass in this case, is referred to as ETC, and lastly, a ‘crop coefficient’ (Kc), which is the ratio between ETC and ETo i.e. the factor that ETo is multiplied by to determine ETC.

Ironically, many turfgrass practitioners already employ the use of a Kc in their irrigation scheduling, without even knowing it; this could be described as - in the words of Donald Rumsfeld - an "unknown known". What do I mean? With knowledge and experience of a given situation, many practitioners will adjust their irrigation practises, for
Many factors influence the rate of ET on your playing surface; these include the grass species, the height of cut, and the weather.

Example a particular area - say a shaded golf green - takes longer to dry out, so less water is applied, whereas the converse can apply to another green on the same site.

Measuring ET is quite straightforward, but can be time consuming, in fact it can take two to three years to acquire reasonable ETc and Kc values. The simplest method is to use a ‘weighing lysimeter’ which is, essentially, a receptacle with the same rootzone and turfgrass as the playing surface. The lysimeter is saturated and allowed to drain to field capacity, weighed to determine the initial weight, and then set into the ground, ideally the playing surface or adjacent to it in an area that has the same environment/maintenance regime as the actual playing surface. The lysimeter is then reweighed 24 hours later, and the ET can then be determined by calculating the difference between the initial weight and the final weight.

If you don’t want to dig holes and insert lysimeters into your surfaces, you have the option of atometers. These have the added advantage that they do not interfere with the playing surface, and can be dotted around the area of your facility to show the variation in ETc across the whole site, which will enable you to adjust your water applications accordingly. However, atometers only generate the ETc value, ascertaining the Kc to calculate the ETc is more difficult as there has not been a great deal of research on sports turf ET in a UK environment. Finally, if you have a weather station on your site, or access to weather data from a nearby weather station, it is possible to estimate ETc values with an empirical model, such as the Penman-Monteith model. Fortunately computer software packages that carry out the calculations, once the weather data has been inputted, are available.

IN an ever changing world where global warming and declining resources are at the forefront of European Union environmental policies, the correct management of irrigation water has become crucial. In other sectors of land management, for instance agriculture, the measurement or estimation of ET to aid irrigation scheduling is common practice. Perhaps now is the time to make it a common practice in sports turf management.

Back in 1999 after ten years in turfgrass management, Colin left his position of Head Greenkeeper at the North Weald Golf Club in Essex to become a full-time student. He is now in the final year of his engineering doctorate (EngD) at Cranfield University, where he is conducting research on precision irrigation for the Jockey Club.

Daisies are low-growing perennials that are commonly seen in turf grass swards, the plant form is seen as a rosette of oval basal leaves with white or pinkish flowers. Daisies flower profusely on upright stalks throughout the season. Daisies can grow and establish in a wide variety of situations including lawns, golf-courses, playing-fields, pastures and roadside banks.

Roots: Daisies have strong rooting structures, comprising a tap root and rhizomes, enabling the plant to establish itself in most soil conditions.

Flowers: The daisy flower has white petals and yellow centres, although flowers are sometimes a pink or rose colour. Plants have 75-100mm flower stalks. The flower stalks are generally longer than the leaves stems are smooth and leafless and support a single flower. The flowers close at dusk/evening, and reopen the next day.

Leaves: Leaves are narrow at the base and slightly lobed, usually grouped together forming a rosette appearance. Daisies have a prostrate or spreading growing habit. Leaf texture varies and may be smooth or hairy.

Reproductive method: Daisies reproduce by seed and rhizomes.

Habitat: Daisies thrive in moist, cool and low fertile conditions but have also been cultivated to produce colourful spring bedding material for gardens, with a range of colours available (pink, red and white).

Cultural Control: Daisies can be mechanically removed from lawns. Rosettes should be dug up using a knife or weed fork ensuring that all the root system is removed. Maintain a high sward density, preventing bare soil areas being available for weed seed germination.

Chemical Control: Apply selective broadleaf herbicides when plant growth is active. There are a number of products available for controlling broad leaf weeds in established turf. These chemicals are best used when the weeds are actively growing, usually between April-October.

- Intrepid 2 (Contains 20.8g/L dicamba,166g/L dichlorprop-p p, ans 166.5g/L MCPA). Bayer Environmental Science.
- Greenor (Contains: 40g/L fluoroxypr, 200g/L dicamba and 200g/L MCPA). Rigby Taylor.
- Bastion T (Contains: 72g/L fluoroxypr and 300g/L mecoprop-p ). Rigby Taylor.
- Dormone (Contains 465g/L 2,4-D, 166g/L dicamba and 166.5g/L MCPA). Bayer Environmental Science.
- Supertox 30 (Contains 95g/L (8.8%w/w) mecoprop-p and 93.5g/L (8.7%w/w) as the diethanolamine salts). Bayer Environmental Science.

These herbicides are usually applied as a liquid using watering cans, knapsack sprayers and vehicle mounted sprayers.

Ensure you follow manufacturer’s directions, health & safety and product data sheets, and comply with COSHH regulations when using these chemicals.
SISIS is very much a family business, joint Managing Directors and brothers, Roger and William Hargreaves, being grandsons of the founder. That family feeling extends to the workforce, half of whom have worked with the company for more than 20 years. With more than 70 years' trading experience behind them SISIS has learned a lot about the sports turf industry.

Originally equipment was only sold through dealerships, however, in 1969 SISIS decided to move to a direct sales policy, which saw sales increase significantly and was the important step needed to provide stability and growth for the company. Today equipment is sold into well over 60 countries worldwide. David Harrison was asked to manage the overseas operations nine years ago (some 30 years after his father had first sold SISIS equipment abroad). David works closely with foreign distributors and also Ian Camp who emigrated to the USA and now looks after the American subsidiary company SISIS Inc. Keith Vertigan and his team of territory managers and demonstrators take care of UK customers.

In the past 6 years export sales have been rising steadily. In 1996 SISIS exported 15% of their total sales, that figure has risen to 30% in 2005, testament indeed to the export policy that the company implemented.

SISIS have been based at Macclesfield since 1962 and, in 1982, a separate Design & Development Department and workshop was built, followed by a large finished stock warehouse to accommodate the growth of the business. The company now employs 65 staff, which includes 10 Territory Managers and 4 demonstrators who are responsible for sales and after-sales service.

Research & Development

Six staff work in the R&D Department and they are a very important part of the company. William Hargreaves said, “We try very hard to listen to our customers and develop products that they need and desire. You have to forecast what the market will need in the future. The SISIS Aer-Aid is a good example of this. It took more than three years to develop and was launched 18 months ago. It has been very well received both at home and abroad. We have sold Aer-Aid’s into South Africa, Canada, Japan, Hong Kong and Scandinavian countries. It was launched in the USA in September 2005.”

The Aer-Aid came about when William Hargreaves and Brian Hartley discussed the possibility of incorporating air injection into existing aeration equipment.

“We wanted to improve the process of aeration, without causing surface disruption. Through careful design we have created that combination by modifying the SISIS Javelin aerator and introducing compressed air” added William. “Compaction is probably the most serious soil problem that Groundsmen have to deal with.”

The Aer-Aid is the company’s newest addition to the range and the test results are proving quite exciting. William said “The Aer-Aid helps reduce the need for top

“We source all our main parts through British companies, in most cases local concerns”
The greatest challenge facing machinery manufacturers is Health & Safety

dressing and therefore the time needed for that operation. As a company we have been involved in deep aeration products, but the evidence shows that compaction is mostly in the top 4” of the ground, thus reducing the need to go in too deep. For a healthy root zone, able to support root growth and therefore healthy vigorous plants, there must be support root growth and therefore too deep. For a healthy root zone, able to ground, thus reducing the need to go in compaction is mostly in the top 4” of the ground, including a dozen different aerators; 7 brushes; 6 scarifiers and 3 top-dressers. Without doubt their most popular and best selling machines have been solid tine aeration; 7 brushes; 6 scarifiers and 3 top-dressers. Without doubt their most popular and best selling machines have been: -

SISIS produce more than 60 items of machinery for most turf maintenance tasks. As a company we are looking to modify its original design of a Groundsman and has become a very popular tractor mounted scarifier. The Veemo tractor mounted scarifier - The Veemo Mkt2 has been refined to go deeper, and comes with tipped blades, locks at a required depth and has increased speed. This machine has had a resurgence in the American marketplace.

Examples of close cooperation with the customer include the development of the ‘Truplay’ system, which came about from working with Cheshire County Council who had a number of red grass all weather pitches to maintain. The out of work, i.e. could this tine treatment help increase surface drainage, but will more often than not, destroy the macro pores surrounding the the time the market only wanted surface scarification! Across the Rotorake range, blades and tines have since been modified for improved performance, and removing debris into collection boxes more efficiently.

The Hydromain, which was introduced in 1981 (a complete turf maintenance system on a specially designed tractor unit) The Rotorake The Veemo tractor mounted scarifier - The Veemo Mkt2 has been refined to go deeper, and comes with tipped blades, locks at a required depth and has increased speed. This machine has had a resurgence in the American marketplace.

Examples of close cooperation with the customer include the development of the ‘Truplay’ system, which came about from working with Cheshire County Council who had a number of red grass all weather pitches to maintain. They wanted something that could tilt, level, and consolidate the surface in one pass. From the original Truplay design came the Twin and Quadra play systems, where multiple operations can be performed in one pass.

The Litamisa was developed from the original design of a Groundsman and has become a very popular tractor mounted scarifier. Even now with the new Aer-Aid, the tines have been modified to suit the needs of the Millennium Stadium and their modular pitch.

To survive in a competitive world, it is essential that companies look at long-term strategies and invest in developing future products that the industry needs. A good example of this has been the growth in the provision of artificial playing surface care in recent years, particularly the new 3rd generation synthetic carpets that require effective maintenance regimes to prolong the life of the carpet. This has led to the development of a range of brushes, sweepers and top-dressers for maintaining these surfaces.

One of the greatest challenges facing all manufacturers is the Health & Safety (H & S) legislation. SISIS have modified and developed their machinery products over the years to accommodate H & S requirements such as: -

Reduction of vibration and noise
Improved manual handling
Reduced emissions
Improved operator safety

The company has also been innovative and resourceful in developing products to suit the users. This can be seen in some of the bowling green equipment, where for example, they have tailored the weight, size and manoeuvrability of the Dart vertical aerator to be more user friendly to operators, who are often, more mature in their years. The Auto-Outfield Spiker now has a spring-assisted system (cantilever) to make the operation of turning much easier.

Joint Managing Director Roger Hargreaves said "We are a product led company. Getting paid is important, but product efficiency and reliability is more important. Quality products and after sales service is something we believe in strongly. There is no point in making a sale and moving on. We want to retain that customer for years to come. One of the ways to do that is to provide excellent customer service. Our backup service includes offering extended warranties and guarantees on all our products, providing an efficient spares and servicing department and encouraging end user education and training needs. A fifth of our turnover is from spare parts and service, and with around 90% of spare parts sent out on next day delivery, we aim to keep our customers happy. We hold all major parts in stock, and for 10 years after any machine has ceased production spare parts remain available.

“We believe that having happy customers is the key to achieving long-term success.”
JOHN RICHARDS, Pitchcare’s Operations Director and new Granddad, reports from Down Under where he joins the Turfgrass Association of Australia on their Summer Seminar trip

A Pom On Tour

S
omebody had to do it I suppose, so why not me. Being the elder statesman at Pitchcare and likely to suffer most from the cold this winter a fact finding trip down under to discover what our Ozzie cousins get up to was a business perk going to no-one else but me!

Summer starts early in Melbourne. In the middle of November this year, temperatures were already getting into the mid 30’s. Too hot for a Pom and too hot for everyone associated with the local turf industry. They have had 7 to 8 years of drought conditions to deal with; reservoirs are currently at 50% capacity but have been as low as 11%. It is a situation which has dictated a dramatic change in how turf professionals and turf businesses undertake their work, a situation I will go into in more detail in a future article.

No sooner had I arrived in the city than I was in contact with the Turfgrass Association of Australia, an organisation formed in 1989 to give all turf managers and allied trades a single representative body. From its beginnings in Melbourne there are now branches in every state in Australia. The secretary of the association, Simone Staples, could not have been more helpful. I was given as much information as I required, but then was kindly invited to join them on their Summer Seminar trip taking place on the 6 December. An offer too good to refuse.

For some reason turf people on this planet do not appear to need much sleep, so it was a very early start to the day. 6.15am the first pick up. I boarded the bus somewhat later at 7.30am on the west side of the city. I was warmly greeted by Rob Savedra, a former president of the organisation, the curator of Wesley College and one of the association’s members who had visited the UK in the summer as guests of the ECB.

We quickly got into a chat about the previous night’s rainfall, about 33mm, half their average monthly total in one night. A similar amount had fallen 5 nights previously so there was some optimism that this year would be good as far as water availability was concerned. Since 2003 all the sports clubs in Victoria have been required to produce a Water Conservation Plan explaining how they are going to reduce their water consumption by a minimum of 10% each and every year. Recycling, use of grey water, water efficient practices are the foremost considerations for all sports turf professionals. A situation we in the UK may have to tackle ourselves in the not too distant future!

We headed down the west coast of Port Phillip Bay and, following another pick up, we arrived at Anco Turf Farm in Torquay, a 300 acre site providing turf for the sports and domestic markets. It was one of four such farms owned by the company and, like everything else, had been affected by the previous years’ droughts. The farm we were visiting was irrigated totally by treated water from a nearby sewerage plant. The water was not as good as they would prefer, it was classified as grade 3, but the owner was working with the sewerage plant and the local government to try to get it upgraded.

After a quick cuppa (good to see old English traditions are still upheld) we were shown a couple of fields, one with a variety called Sea Isle Paspalum, a salt tolerant turf used mainly in coastal areas, and another with a couch grass called Conquest. According to my hosts, this variety is used widely by schools and local authorities on sports fields where heavy use is expected.

Rob Savedra explained to me that couch grass was becoming predominant in the state because of its ability to tolerate drought conditions. There were some drawbacks, mainly the high levels of thatch created and the fact that the grass goes dormant and turns brown during the winter. The latter problem, Rob believes, is a matter of educating players and spectators into accepting less aesthetically pleasing pitches; the thatch can be dealt with by continuous maintenance, scarifying, verticutting etc. Some venues still have rye grass pitches but these are becoming more scarce; some are experimenting with couch varieties oversown with rye to try to overcome the browning problem during their winter.

BACK on the coach to Geelong, a town which in the mid 1800’s was vying with Melbourne to be the capital of Victoria, but lost. A very picturesque port which made its fortune from sheep farming. Our next visit was to the Botanical Gardens, dating back to 1851 when a 81 hectare reserve was created originally for the purpose of plant introduction, acclimatisation and the assessment of the horticultural potential of the region, but which has now become a very popular tourist and local attraction.

Our guide was a lovely, well-spoken lady called Jayne Salmon, a volunteer helper at the Gardens, who was quick to point out that “I have never had to deal with so many blokes!” To Jayne’s great relief I can report that we were on our best behaviour as we had our tour, some magnificent mature trees from all parts of the world, but the Garden’s pride and joy is their award winning 21st Century Garden.

Located at the entrance to the Botanical Gardens the area, built at a cost of over $2A million, is very dramatic and, using their words, is ‘a showcase of indigenous regional flora. Interestingly, the 21st Century Garden promotes itself with the line - ‘No swathes of green grass, this is a garden for our times!’ The

TGAA members pouring through official entrance to Botanic Gardens

Newly seeded main cricket square at Geelong Grammar School

Jayne Salmon entertaining the blokes at Geelong Botanical Gardens
area now requires just 1% of the water demands of the previous plantings.

The sun was now beating down and I was grateful for the cool of the coach as we headed just a few miles out of town to Geelong Grammar School, famed for having Prince Charles as one of its former pupils. We were treated to lunch in the splendid Hogwarts style, dining hall, joining the pupils and staff who were in a carefree mood as it was the last day before they broke up for Christmas.

It is a fee paying school, as are many in Australia, with no less than 11 boarding homes in the grounds for pupils, and a smart row of new houses for the teachers. 1,000 pupils are based at the main campus, of which 700 are boarders. In total the grounds amount to 500 acres, of which 120 acres are classified as pitch and gardens, under the responsibility of the 8 grounds staff.

Our host at the school was Matthew Hanrahan, the Grounds Supervisor, who had also coordinated the whole of the day’s events. We were treated to a short tour of the school’s facilities including the impressive Persse library. The school, celebrating its 150th anniversary this year, is built very much along the lines of a Victorian English college with quadrangles and cloisters and, clearly, with the discipline to match. The pupils were immaculately dressed and well behaved.

The two main ovals, each more than 2 hectares, are immediately in front of the school buildings overlooking Port Phillip Bay and the school’s boating centre. The ovals are used for cricket in the summer and Aussie rules in the winter. The whole of the areas are couch grass but the squares are oversown with a 3 way blend of rye grasses. Matthew had taken the top 20mm off the main square, re-seeded, and was getting good results with wicket preparation time less than half the previous. He has plans to do the same to the other square, and possibly taking more off.

He was just in the process of laying out a new football (soccer) area for 2 pitches because of the demand from pupils. Australia has just qualified for this year’s World Cup Finals and it has generated a lot of interest. The school’s green waste free of charge and then allows the school to have the decomposed waste for use as mulch, again free of charge. It’s a mutually beneficial deal and environmentally friendly.

THE tour over I returned to the coach, weary but very impressed. Around 70 members of the TGAA had made the trip and, as with any similar grouping in the UK, they consisted of all ages, all shapes and sizes, some in uniform logo polo shirts, some in shorts and boots, from schools, colleges, sports clubs, companies and local authorities, all different but all had that unmistakable common bond - a passion for sports turf.

It was a pleasure and a privilege to have spent a day with them, and my thanks to Rob, Matthew and the rest for making me feel so welcome.

“& o swathes of green grass, this is a garden for our times!”

SAND INJECTION

Take thatch out - put sand in
Brand new concept to the Graden range

Now there is a machine which not only grooves to remove thatch but also injects sand - right into the bottom of the groove.

• Amendments can be added to sand, such as Zeolite, Profile and Axis
• Can be used any time of year - even in damp conditions
• Firms the surface
• No loss of stability

Phone us for more details about this revolutionary new process

R & K Kensett, 4 Leazes Avenue, Chaldon, Caterham, Surrey CR3 5AH
Tel: +44 (0) 1883 342632 Web: www.kensettsports.com
ALTHOUGH it may be hard to imagine as you read this, but some of you will be struggling for water this summer. It seems that every year the well runs a little drier and the threat of global warming looms a little larger. We never really miss water and, to a certain extent, the climate in the UK is on our side. So we may have to go a couple of weeks without, but on the whole we know that rain is probably around the corner. However, when times are dry, even for brief periods, the effects of water applied through the irrigation system become apparent, or perhaps it should be more correctly stated that the effects of non-uniform application of water become apparent.

Uniformity
An irrigation system that does not apply water evenly will cause problems; this is referred to as the Uniformity of the irrigation system. Today many golf courses have fully computerised automatic irrigation systems; these systems can obviously inform the turf grass manager the application rates, run times and even fault find. They allow the manager to quickly change irrigation head run times or to have several programmes stored to allow for quick changes to the system in response to changing environmental factors. Yet for all of this flexibility, the uniformity of the application is unknown and first indicators that all is not well may be at the first signs of the death of the turf grass. At present, uniformity does not cross the minds of those in control of the irrigation system, especially when rainfall is usually adequate or when water availability is not an issue. This, however, is rapidly changing. An irrigation system which delivers water uniformly will not only save money but, in sports surface management terms, ensure the consistency and playability of the surface. Irrigation uniformity is an important factor in agriculture where the research has been carried out, the effects of irrigation uniformity on crop yield has been well researched and documented. While golf courses and sports grounds are not huge users of water in their context, they are very public users and, in some respects, easy targets for criticism; this alone means that irrigation use at these facilities needs be seen to be respecting the wider environmental implications of applying thousands of litres of water in a season.

Modern construction methods applied to the majority of golf courses and major stadia built in the last few years, coupled with the use of predominantly root-zones, has increasingly seen irrigation used as an important management tool for maintenance.

With an increase in the need to apply more water there is an increase in the need to ensure that the water is actually applied in a way which guarantees that the whole of the surface receives sufficient moisture to enable the turf grass to not only survive but to provide a surface which meets the increasing demands of today’s sports men and women. The turf grass needs moisture at all parts of the growing cycle, without its metabolism will cease to function and the plant will die. If there is a shortfall of the precipitation rate (pr), to the evapotranspiration of the turf grass (ETT), then supplementary irrigation needs to take place.

It is, however, important that the amount of irrigation applied to a given area is correct; too much and the turf grass will become prone to damage from wear, insects and disease, too little and growth will slow and the plant will wilt and eventually die. The turf grass’s need for water is variable throughout the year according to environmental factors such as temperature, humidity, and wind speed and light. Individual turf grass species also have variable water demands.

There is, therefore, a need for the irrigation system to deliver the correct amount of water to the correct place, to ensure that the surface remains uniform and playability of the surface is maintained at acceptable standards.

Irrigation uniformity is important, and is founded on a basic premise - all irrigated areas should receive the same amount of water. If water is not applied uniformly then a number of consequences will occur:

- Some areas will be over watered.
- Some areas will be under watered
- Some areas will receive the correct amount of water
- And some areas may not receive any water at all

Whichever of the combination of consequences that occur will, to a greater or lesser extent, affect the health of the turf grass and likely to produce a playing surface which may not perform to the required standards.

How to Carry out a Survey

Catch cans are placed at 3m centres across a golf green in a grid pattern. The catch cans can be any type of container as long as they all have vertical sides, with a thin edge/mouth and the diameter of the opening needs to be identical - try baked bean or soup cans - depending on taste. To prevent the containers being knocked over by either the wind or the water stream, put golf balls inside them, although you should not do this test if it is too windy, certainly no more than 5mph.

Irrigation heads/valves should be operated in the same pattern as they would be during a normal irrigation cycle and run sequentially if required; this will ensure the test cycle is as close to operating conditions as possible (Wilson and Zoldoski 1987). Run the system for one double your normal irrigation cycle to ensure you have enough water in the cans to record it.

Pour the water collected in each container into a measuring cylinder and record the figures. It will help identify problems if there is a sketch made of where the measurements were taken from.

Total up the amount of the water collected and the
amount collected in the lowest quarter. You can then calculate the Distribution uniformity using the equation referred to later in this article.

The resulting value will give an indication of the uniformity of the applied water to the surface. 80% distribution uniformity is classed as 'achievable', but it should come as no great surprise to find that your system will fall below that level. There are several reasons why the uniformity could be low, but the likelihood is that it will be one, some or at the very worst, all of the following:

- The pressure at the sprinkler*
- Variation of the pressure in the operating set*
- Incorrect spacing of the sprinkler heads
- Incorrect or worn nozzles
- The water distribution pattern of the sprinkler
- Wind speed and direction

*Pressure variations may not be attributable to something as major as pump problems it could simply be a blocked or damaged filter.

At least one study (Ainscough and Kiker 2002) has shown that well maintained irrigation systems, operated correctly, generally have a high and acceptable DU. The uniformity of application of the irrigation water can be effectively checked via a fairly quick and simple method, it may pinpoint where problems lie and, if corrected, should save both money and, of course, a valuable environmental resource that some day we may all be wishing for more of... water

Low Quarter Distribution Uniformity

Although there are other methods, low quarter distribution uniformity (DU_lq) is now the method most commonly used for turf grass and golf (Burt et al.; 1997, Millar et al; 2003). Instead of incorporating an absolute minimum it uses an average of the lowest quarter of the amount applied.

\[
DU_{lq} = 100 \times \frac{\text{avg' } LQ}{V_{avg'}}
\]

where,

- DU_{lq} = Low Quarter Distribution Uniformity
- \text{avg' } LQ = Average of the lower 25% of sample
- V_{avg'} = Average catch-can volume

Although the figure produced is expressed as a percentage, DU is not an efficiency term (Burt et al.; 1997) and should be considered as a ratio. Zoldoski et al. (1994) also argue that this method has flaws stating that the location of the Low Quarter may be in a single area within that being irrigated or may be made up from several smaller deficit areas. If however the figures are recorded in the location from which they are taken then this information can be almost seen at a glance therefore providing accurate recording is carried out, this problem may be overcome and closer examination of the system becomes possible.

Ascertaining the uniformity of application of the system is therefore critical to ensuring the good health of the turf grass and the playability of the surface and doing so in a cost effective way in terms of both financial and environmental considerations.

Good irrigation systems should have a distribution uniformity of 90%. It has been accepted that a DU of 100% is impossible to achieve, (Solomon 1990, Burt et al; 1997, and others), all arguing that even rainfall does not achieve a uniformity of 100%. In their study on golf course irrigation uniformity, Miller et al; (2003) stated that DU values of 80% had been set as achievable for golf courses by the American Irrigation Association.

- 80% - Excellent - Achievable for golf courses
- 70% - Reasonable
- 55% - Poor - System should be analysed to find the cause

The full article, with references, can be read on www.pitchcare.com
Laurence Gale MSc meets up with Alan Penn, Technical Manager of the National Playing Fields Association, to get the low down on their ‘Acre a Day’ campaign

To the FUTURE and beyond!

FOR eighty years, the National Playing Fields Association (NPFA) has been working to protect and conserve playing fields in the United Kingdom. It has been a constant battle, but they have had some big successes - and, to celebrate their 80th birthday, they’ve set themselves a new and ambitious target.

The “Acre a Day” campaign aims to preserve a minimum of 365 acres of public green space every year until 2010. “It’s a tough challenge, but we believe we can meet it,” says NPFA Director Alison Moore-Gwyn.

The NPFA was granted a Royal Charter in 1933. Its purpose then, as it is now, was to ensure that everyone had access to quality recreation space close to where they live.

Since those early days, the NPFA has campaigned ceaselessly for national funding for sport and recreation. It has also championed children’s play and the improvement of safety on play facilities.

Its core work remains, as always, the protection and improvement of playing fields. The fields which came into its stewardship in 1925 remain protected for the communities they serve. This is the NPFA’s distinctive contribution to play, sport and recreation.

At present, there is no statutory protection for our playing fields so the country’s irreplaceable recreational heritage is constantly at risk. The NPFA believes they deserve better protection.

Play, sport and informal recreation environments are the focus of the NPFA’s action, and its Council works to safeguard facilities for communities across the UK.

It is the UK’s only national organisation with specific responsibility for acquiring, protecting and improving our fast disappearing playing fields and playgrounds.

But NPFA experts also work to ensure that the fields which are available for the public are maintained and looked after. One of them is Technical Manager Alan Penn, whose role is to advise and oversee construction and maintenance projects for both NPFA owned fields and outside parties such as schools and Councils.

“I spend a lot of time out on the road, visiting and advising a number of customers and clients,” he says. “This often leads to the NPFA being employed to carry out specific inspections and surveys. Usually, the clients are looking to improve the condition of existing pitches, and we help them to draw up appropriate specifications, drawings, and plans of the necessary work.”

Alan takes considerable skills and qualifications to his job - ten years’ experience at the NPFA for a start, along with formal qualifications in turf grass management. He has recently passed his Master Degree in Sports Surface Technology at Cranfield University.

“The main problem I have to deal with is a lack of maintenance or understanding of what is needed to maintain natural grass pitches. Once people have the advice and the knowledge, they are generally very keen to take the right steps,” he says.

But there are also new construction projects to be managed - such as a recent project to create a new school playing field in Jersey. Alan was called out to inspect and make recommendations to help the School maximise the playing space available and go for the most effective construction - while keeping within their budget.

“The school ended up with a new grass football pitch with both primary and secondary drainage schemes,” he says.

“The job was an interesting project, carried out during the summer by White Horse Contractors - all the materials had to be imported from the UK mainland because the quality and quantities of material were not available in Jersey.”

Projects like the one in Jersey are vitally important for the health of the nation - the very fields that the next generation of sportsmen and women will come from. Protecting them, maintaining them, and promoting the use of natural turf pitches are vital steps for Britain in ensuring sporting success in the future.

Such recreational space is a vital part of every community - but an average of one playing field every day still comes under threat from building development. Once this land is built on, it is lost - forever.

The ‘Acre a Day’ campaign is aiming to keep the house builders and developers at bay - but at the same time, the NPFA’s teams of technical specialists like Alan are struggling to see that the fields we have are kept in the sort of condition which gives young sportsmen and sportswomen the best possible chance. It’s a worthwhile job - and it never ends.

Further information available from www.npfa.co.uk
Introducing the versatile MT313
Mini Triple Turf Mower

A superbly engineered, reliable and cost effective mower.
Ideal for Tees, Surrounds and Fine Finish Areas.

Also introducing to the Hayter range
the Toro Out Front Rotary Mower
and Zero Turn Mower.

Buy Hayter and you buy after sales service second to none, low lifetime operating
costs and of course, a machine with functionality, comfort and reliability.

Call us now on 01279 723444 or visit our website www.hayter.co.uk
Hayter Limited, Spellbrook, Bishops Stortford, Herts CM23 4BU  email: sales@hayter.co.uk
Buying a computer of your own ...

Jargon busting

Laptop or Notebook
A computer that can be easily carried around and has an integral battery for ultimate portability. Can easily be used on your lap whilst sat down!

Desktop
A computer that is too large to carry around, has a separate monitor and peripherals. Will make indents in your leg if used as above! Al is pictured with one below.

Hardware
Physical things that make up a computer system, eg the computer itself and the peripherals, the keyboard being a good example.

Software or Program
A list of commands that tells your computer to do something, eg Display a picture on the monitor.

Operating System
The software that tells the computer how to work. The three main types are currently Microsoft Windows, Linux and MacOS.

Hello, me again, Alastair, Pitchcare's Web Developer and IT expert. I've been asked to write a simple, concise and informative article to help you read the online version of this magazine, as well as provide tips for those of you who already have experience with this kind of thing.

In part one, last issue, I showed you how to get online if you don't already have a computer of your own. So in part two I'll be focusing on buying your own computer.

I'm not going to pretend that computers are cheap to buy, unless you decide upon something second hand and old, but ongoing maintenance is usually inexpensive. There are many different types of computer, and an array of options when choosing one. It can be quite confusing, even for someone as geeky as me!

I estimate that you would have to spend a minimum of £300 for a new computer. You can buy one from a big electrical retailer such as Comet, Currys or PC World, from a smaller specialist computer retailer, or you could buy through mail order. There are many computer magazines available, and the one that I know is bursting with special deals is Computer Shopper. It's usually very thick, costs £3.50 and should contain all you need to make an informed decision.

For used computers I would estimate you would need to spend a minimum of £150 to £200. Newspapers such as Bargain Pages or Loot, local newspaper classifieds are filled with adverts for used machines, or if you know someone that is upgrading to a newer model, they may sell you their old one.

However you get a computer, there are some basic things that it needs to have for you to be able to read Pitchcare online. It needs to come with an operating system, be modern enough to be able to run a web browser, and needs to have some method of connecting to the internet. You also need to make sure it comes with a monitor, mouse and keyboard.

There are two styles of computer, desktop and laptop, the only difference being portability. A laptop is designed to be used anywhere (on your lap being a very good place - but not underwater). They are very lightweight, compact and have an internal rechargeable battery. A desktop sits on your desk and doesn't move easily. Laptops are more expensive because they have to be well engineered and contain more expensive components.

Each style of computer can be bought in one of two types. By far the most popular is the IBM Compatible. The (traditionally) more expensive, but more user friendly option is an Apple. You have to make the decision to have one or the other, but the arguments for and against each are too long to go into here.

Which type you choose dictates some other things. Apple computers come with their own MacOS operating system, while IBM compatible computers can use Microsoft Windows or Linux. Software you buy or use will only work with the chosen operating system, and also for most of the Apple
computers, only certain Apple branded peripherals are compatible.

Without an operating system, the computer is nothing but a rather expensive doorstop. If you have chosen an Apple computer it will come with Mac OS, a commercial product that only works on Apple computers, is well designed and simple to use, but is not connectable to as many software packages as Microsoft Windows.

For IBM Compatible computers you will need to check with your supplier what operating system comes with it. Briefly summarised, the two operating systems that you may have to choose between are: Microsoft Windows, a commercial product, expensive to buy and upgrade but works well, especially the latest version of Windows XP, or Linux, a free or cheap operating system written and distributed by computer enthusiasts worldwide, not compatible with as many software packages as Microsoft Windows.

Computers have been connected to the internet since it was first formed in 1969, so it is difficult for me to say that you need a modem to access the internet. However, to view Pitchcare online properly, you need to run a reasonably modern web browser, which in turn will only be possible on a reasonably modern computer. If you are buying a new computer this won’t worry you as new computers will be able to do it all, but for used computers I would recommend nothing past four years old.

The last tick on our checklist is a printer, so you can have permanent paper copies of things you look at on the monitor (making them easier to read). Software bundles, the most common of which is an office productivity program, allowing you to write letters, CV’s and family announcements. Finally, TV Tuners, that let you use the computer as a TV and digital video recorder.

I’ve not wanted to get too technical here, or too specific, but I wanted to provide some recommendations for what I think you should spend your money on. If you don’t mind the additional expense, the Apple Mini is a very impressive little computer, and very stylish too. For a full system you should expect to pay upwards of £600. If you want to spend less, I suggest a large supplier such as Dell, where £300 should be enough for a full desktop computer system. A desktop for the smallest budget should be available from a smaller retailer for £150 to £200. Ask them to install Linux to keep the cost down. For a laptop, Dell’s Inspiron range would set you back £500.

If you need help setting the computer up, and some tuition with the first steps, a smaller local specialist computer retailer should provide this service when you buy the computer from them. They may be a little bit more expensive than a large retailer but they will give you good customer service and will guide you through the process of choosing a computer without giving you the hard sell.

I hope that I have provided enough information for you to think about buying your first computer. If you decide to go for it, I’m sure you will not regret it. In the next issue I will tell you about different ways to connect to the internet, and ways to make the most of your time online.

Speakers, so you can hear your computer telling you things or listen to music on it. Printer, so you can have permanent paper copies of things you look at on the monitor (making them easier to read).

Al’s best of the net:

- Rather than trawl through lots of current affairs websites, read and search through automatically gathered and aggregated news at www.news.google.co.uk
- If you need to travel and don’t know the way, the best free online driving directions are available from www.map24.com
- All the BBC radio stations now have “listen again” so you can listen to a large array of radio programmes that have been broadcast in the last 7 days. Look out for “listen again” on www.bbc.co.uk
- The last tick on our checklist is a printer, so you can have permanent paper copies of things you look at on the monitor (making them easier to read). Software bundles, the most common of which is an office productivity program, allowing you to write letters, CV’s and family announcements.

Days OFF!

DAVID GOLDSMITH, MD Tower Chemicals - Ever since I left school at 16 I’ve been in chemicals. Tower started in 1984 and I’ve been here since day dot. Being a naturally shy person! it took me some time to adjust to the industry, the characters and, particularly, the socialising, but now I feel totally at home. Likes within the Industry, the people, the constant challenge of being innovative, to see a product working to help solve a problem. Dislikes: committees, apathy, rumours and delayed planes. My quality time is spent with the wife and children, playing golf, going out for dinner and trying to catch up on sleep! On Sundays I am torn between watching William play rugby and Jack play football. I support both my local teams, Leeds United and Leeds Rhinos, and get to games whenever I can. I used to play both sports but now I have to be content with watching. My days of playing are over, except for golf, and some may say they never started! Social time is NOT going on a plane. I travel throughout Europe 3 weeks out of 4 so planes are not my idea of relaxation. Nor is using my laptop or mobile phone. All this modern technology is supposed to save time, not eat it away!
Why not visit our on-line classifieds at www.pitchcare.com
Or visit the Pitchcare Shop for great savings on a host of quality products
MACHINERY SALES & HIRE

Providing TURF-CARE CONTRACTING TURF-CARE EQUIPMENT SALES TURF-CARE PRODUCTS & LOAM S

Central Area 01283 704664
South East 01895 634411

For more details contact Julian on 07774 746083 or email for pictures - jsimpson@boughton-loam.co.uk

MACHINERY SPARES

Sales & hire of used commercial mowers
Northwest main dealer for Benye compact tractors
We stock all types of grass cutting equipment from 4ft to 50ft cut

SOIL SCREENERS

Producing high quality topsoil from your own recycled materials
HIRE AND SALES
Contact Dave on 01380 828337
Mobile: 07971 843802
email: sales@synergyproducts.ltd.uk
www.synergyproducts.ltd.uk

SPARE PARTS

To subscribe to pitchcare magazine log on to www.pitchcare.com

Tines
Slitters Scarifiers

for turf maintenance machinery
Tel: (0044) 0114 251 3344
Email: sales@tines.co.uk
Fax: (0044) 0114 251 3000
www.tines.co.uk

Tines Slitters Scarifiers

For all your Golf and Turf Machinery Spares

THE UK’S PREMIER SUPPLIER
FOR ALL YOUR GOLF AND TURF MACHINERY SPARES

SEED SUPPLIERS

British Seed Houses
Sportsground Mixtures
• Next day delivery
• Technical advice
• STILL in 25kg bags
Tel: 01522 868714
Fax: 01522 868095
seeds@britishseedhouses.com

Hurrells
Possibly the largest stockist of amenity grass and wild flowers seed in northern England
Hurrells Specialist Seeds, Beverley Road
Driffield Driffield East Yorkshire YO25 9PF
Tel: 01377 271400
Fax: 01377 271500
email: nick@hurrells.fsbusiness.co.uk
www.hmseeds.co.uk

For pictures please click on the relevant response number

SEED SUPPLIERS

You can respond to advertising in this issue by logging on to www.pitchcare.com/re
Clicking on to the relevant response number will take you direct to the advertisers website
Or email peter@pitchcare.com

OVERSEEDING

NEED TO OVERSEED?
Moore Uni-Drill is the proven machine for accurate seed placement on flat or undulating areas
Contact Dave on 01380 828337
Mobile: 07971 843802
e-mail: sales@synergyproducts.ltd.uk
www.synergyproducts.ltd.uk

Plant Nutrients

Strength against Stress

At BENSON we have long understood the problems of Stress in plants and have concentrated upon the effects and alleviation.
Half a century of development and understanding of plant hormone production has resulted in the manufacture of specialised premium products facilitating healthy root growth, disease resistance and most importantly, protection against Stress.

You can buy our products on-line at www.pitchcare.com

You have the grass, we have the machine
Lane Ends Cottage, Highfield Gate Lane, Baidstore, Blackburn BB2 7LJ

PLANT NUTRIENTS

BENSON PLANT NUTRIENTS
Strength against Stress

Consolidate
Consolidate Plus
Renascent

GOT A PROBLEM? Contact Paul Benson on 07733 233333
e-mail: paul@bensonplantnutrients.com www.bensonplantnutrients.com
Avonmore Associates

Vertidraining, Hollow Coring, Overseeding, Draining, Gravel Banding, Field Top Maker, Deep Scarifying & all types of Sports Turf Maintenance

Mobile: 07860 259692 Tel: 01284 735241 Fax 01284 735105
Email: peter@buryturfcare.com www.buryturfcare.com

Chris Boniface Ltd

A qualified cricket groundsman with 20 years experience in the maintenance and construction of cricket pitches

Tel: 07795 634948
email: chris@cboniface1.wanadoo.co.uk

Fineturf

SPECIALISTS IN CONSTRUCTION AND RENOVATION OF SPORTSTURF SURFACES
Pet: 01400 250796 Fax: 01400 255306 www.fineturf.net
The Fastest Growing Name in Turf

J&R Alker

Sportsground Construction Ltd

Specialists in full construction, drainage, sand sitting, verti-draining, top dressing.
Tel/Fax: 01695 622983 Mobile: 07974 462465

To subscribe to pitchcare magazine log on to www.pitchcare.com

Why not visit our on-line classifieds at www.pitchcare.com
Or visit the Pitchcare Shop for great savings on a host of quality products
**SPORTS TURF CONTRACTORS**

White Horse Contractors Limited

Design - Construction - Renovation - Drainage

www.whitehorsecontractors.co.uk

**TURF SUPPLIERS**

County Turf

“For landscaping, for sports, for amenity…”

Growers of natural & rootzone sports turf with the very best STRI cultivars.

Tel: 01724 855600
Fax: 01724 262777
Email: andyfraser@countyturf.co.uk

www.countyturf.co.uk

**SPORTS TURF CONSULTANTS**

Sports Turf Consultancy Associates Ltd

A multidisciplinary Turf Consultancy Service for all Golf and Sports Clubs and Turf Managers

www.stca-ltd.com

Director: George Atwood-Harris
Phone: 01782 516527
Mobile: 07712 779473
Email: enquiries@stca-ltd.com

**Fineturf**

Dedicated to Growing Quality Sportsturf

Custom Grown Root Zone Turf

Install ‘n’ Playball Turf Tiles

Tel: 01400 250796
Fax: 01400 251606
www.finerturf.net

The Fastest Growing Name in Turf

**TOP DRESSING**

Top quality dressings
Kaloam & Ongar Loam • Fertilisers
Specialist grass seeds, machinery & tools

Contact: Alan Ford - Tel:0870 242 1090
alan.ford@monrogoundrey.co.uk
www.monrogoundrey.co.uk

Contact: Philip Furner - Tel:01277 890246
sales@binderloams.co.uk
www.binderloams.co.uk

**TREE CARE**

Lindum

We are specialist turf growers who go to great LENGTHS to please our customers...

Contact: Sales on Tel: 01904 448675
Fax: 01904 448713
Web: www.turf.co.uk

**TYRES**

P.I. Limited

Always a huge selection of used machinery available

Commercial Mowers
Pedestrian Mowers
Tractors
Utility Vehicles
Attachments

Machines wanted

Tel: 07917 434345
Fax: 02392 585724
sales@pilimited.co.uk
www.pilimited.co.uk

**USED MACHINERY**

Why not visit our on-line classifieds at

www.pitchcare.com

Or visit the Pitchcare Shop for great savings on a host of quality products
You CANNOT be serious!
The not so serious side of the industry

City star earns his stripes

There's been a bit of debate about it on the Pitchcare website but Lee Jackson, deputy head groundsman at the City of Manchester Stadium, has made headline News in the Manchester Evening News.

Apparently Lee has become a household name in the North West, thanks to his artistic trimming of the hallowed turf at the Stadium.

Lee said "The patterns started after manager Kevin Keegan left. He wanted to stick with traditional cuts, so I did, but present manager Stuart Pearce hasn't mentioned it. To date we've had eight games at home and won all but one, so if it was affecting play I'd have been asked to change it by now.

"I'm sure the manager would have said something if he was unhappy and so would the players. I used to do the odd one at Maine Road, but the first proper design I did was for the England game against Iceland at Eastlands last summer. I was amazed when the patterns began to be mentioned on TV."

Whatever your view, well done to Lee and the team for raising the profile of the industry. The article prompted a number of positive comments not least from Jay at Old Trafford who said "It's nice when Groundsmen get the praise they deserve. Well done to the City Groundstaff. Wouldn't be able to do this on a synthetic surface! Keep pitches natural grass and support your Groundsmen - they work very hard and are extremely professional."

What's in a name?

William Stroker Esq. is an agricultural judge in Ireland. It's a pity that his parents didn't judge their actions before heading off to register his birth. Ah well, it's been going on since time immemorial. Only recently Drew Peacock entered this world.

But perhaps the best is Francesca Wiper. Confused? Well just ask yourself what Francesca often gets shortened to!

It's been a tough month this week!

Richard and his staff had very little devoting to do after matches.

During my visit to Yorkshire I was able to meet up with two of the most influential Groundsmen in Barnoldswick Town.

A rare Mediterranean fish has somehow ended up on the green of the fifth hole of Royal Portrush golf course.

The fish, weighing 1½lb and about 12in long, with silver scales, an orange patch on its belly and unusual fins, was identified by the Fishery Conservancy Board for Northern Ireland as a Mediterranean Trigger fish.

The unusual visitor was found by greenkeeper Trevor Stewart when he went to sweep the green last Thursday morning. He said: "There was no smell and it certainly had not been floating about in the sea for long. There was no damage, other that a small cut on one side."

The course's fifth green sits high above the beach near the rocks. Occasionally bits of fish are found on the course, but a whole fish in good condition is very unusual.

The name trigger comes from the prominent dorsal fin above the eye, which is shaped like a spine.

Any similarity between the trigger fish and our editor is purely coincidental.
NEW EVENING CLASSES FOR MEN
ALL ARE WELCOME
OPEN TO MEN ONLY

Note: due to the complexity and level of difficulty, each course will accept a maximum of eight participants.

DAY ONE

HOW TO FILL ICE CUBE TRAYS
Step by step guide with slide presentation

TOILET ROLLS- DO THEY GROW ON THE HOLDERS?
Round table discussion

DIFFERENCES BETWEEN LAUNDRY BASKET & FLOOR
Practicing with hamper (Pictures and graphics)

DISHES & SILVERWARE; DO THEY LEVITATE/FLY TO KITCHEN SINK OR DISHWASHER BY THEMSELVES?
Debate among a panel of experts.

LOSS OF VIRILITY
Losing the remote control to your significant other - Help line and support groups

LEARNING HOW TO FIND THINGS
Starting with looking in the right place instead of turning the house upside down while shouting “It’s not there!”, You’ve moved it!” or “We’ve run out!” – Open forum

DAY TWO

EMPTY MILK CARTONS; DO THEY BELONG IN THE FRIDGE OR THE BIN?
Group discussion and role-play

HEALTH WATCH; BRINGING HER FLOWERS IS NOT HARMFUL TO YOUR HEALTH
PowerPoint presentation

REAL MEN ASK FOR DIRECTIONS WHEN LOST
Real life testimonial from the one man who did

IS IT GENETICALLY IMPOSSIBLE TO SIT QUIETLY AS SHE PARALLEL PARKS?
Driving simulation

LIVING WITH ADULTS; BASIC DIFFERENCES BETWEEN YOUR MOTHER AND YOUR PARTNER
Online class and role playing

HOW TO BE THE IDEAL SHOPPING COMPANION
Relaxation exercises, meditation and breathing techniques

REMEMBERING IMPORTANT DATES & CALLING WHEN YOU’RE GOING TO BE LATE
Bring your calendar or PDA to class

GETTING OVER IT; LEARNING HOW TO LIVE WITH BEING WRONG ALL THE TIME
Individual counsellors available

TWO greenkeepers had a lucky escape when they found an anti-tank mine on their golf course and then picked it up and washed it to see what it was. The Second World War mine was found by Peter Fiske and his assistant Dave Murdoch when they were digging a new bunker at Buckpool Golf Course, in Buckie, Moray. A bomb disposal team was called and it blew up the device in a controlled explosion.

Pitchcare’s new course details announced!

January 2006
22nd to 27th - Harrogate Week (including BTME and Clubhouse - 24th to 26th), UK (www.harrogateweek.org.uk)
25th to 26th - The Hire Show, Excel, London (www.hireshow.co.uk)
29th to 30th - GolfEx, Dubai (www.golf-ex.com)

February 2006
6th to 11th - GCSAA Golf Industry Show, Atlanta (www.golfindustryshow.com)

March 2006
1st - Amenity Forum, Edgbaston (www.bcpc.org)
1st to 2nd - GCSAI Annual Conference, Galway (www.gcsai.org/annualconference.htm)
1st to 3rd - Fairway 2006, Munich (www.fairway.de/english/esuche.htm)

May 2006
11th to 15th - England v Sri Lanka - 1st npower Test, Lord’s (www.cricketworld.com)
23rd to 27th - RHS Chelsea Flower Show (www.rhs.org.uk)
25 to 29th - England v Sri Lanka - 2nd npower Test, Edgbaston (www.cricketworld.com)

To add your event to Forward Thinking please email details to ellie@pitchcare.com and don’t forget that you can add it to Pitchcare’s online calendar yourself! Simply log on to www.pitchcare.com, select the yellow ‘calendar’ button on the left hand side of the screen and click on “Add event” at the top of the page.
Synergy Products Ltd

"bringing together quality proven products for a better playing surface"

Synergy Products Ltd
www.synergyproducts.co.uk
Seend Row House, Seend, Melksham, Wilts. SN12 6PR
Tel: 01380 828337