

the improvement that has occurred in the Club's "Golf World" ranking over the past five years. During this time, the Notts Club has jumped from 47th to 25th and the magazine's assessors have stated that one of the major factors behind this has been the enhancement of the natural areas of the course.

At Minchinhampton Golf Club the Courses Manager, Paul Worster has assembled an enthusiastic team who work with a comprehensive Ecological Management Plan, which prioritises non-native tree removal, the enhancement of grassland rough and the competent management of hedgerows and water bodies. The relatively new Cherrington course has been built on a site with long stretches of dry stone wall which were in a poor state of repair. The Club fully appreciates the cultural value of these walls within the Cotswold landscape and has made strides towards its objective to re-build all 1.5km. The club is excellent in terms of energy saving

and waste management. Through consultation with the composting association it has arrived at a novel and cost effective composting technique. This along with the Notts Club's sheep grazing scheme and other worthy projects will be described when the best new initiative results are announced in the January issue of Greenkeeper International.

Minchinhampton were among many clubs that have stated just how much benefit they had got from entering the BIGGA competition this year in terms of knowledge, pride and as a way of assessing what they have achieved and what is still to do. In essence then all entrants are winners, though the clubs listed below take the prestige and the prizes. Congratulations to the winners and to those not amongst the prizes a message from the Clubs at Kenwick Park, St. Andrews and Thorpeness: "If at first you don't succeed try, try, try again."

And the Winners are...

AWARD	CLUB	PRIZE
Overall Winner	Kenwick Park Golf Club	£2000 and a Weather Station
Scotland	St. Andrews Links Trust	£500
Northern England	York Golf Club	£500
Runner up in winners region	Notts Golf Club	£500
South East England	Thorpeness Hotel and Golf Club	£500
New Entrant Prize	Minchinhampton Golf Club	£500
Best New Initiative Prize	To be announced in the January issue of Greenkeeper International.	

Kenwick Park Golf Club will be featured in the magazine sometime next year.

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THE WORLD OF DRAINS

Roland Taylor explores the underground world of the drain

At the time of writing this the temperature, had for a number of weeks, been well up in the 20s and the landscape was beginning to take on the look of those dry, dusty prairies that were often part of old cowboy films.

Drainage was probably the last thing most readers would have had on their minds as they struggled to keep their greens alive. By the time you read this, things could have drastically altered and areas around the course, which had resembled a dried up 'billabong', may now either be very wet or under water. Nature usually has a way of quickly redressing the situation.

Having the right drainage in place is a key factor in modern turf management. With our present climatic conditions it is very easy to get caught out.

Some courses have natural drainage, but these are likely to be relatively rare and even then there may be odd areas which present a problem. While visiting a course last year, the greenkeeper explained they had had a drainage system installed in a fairway because a spring had suddenly become established where previously there was not one.

WHY DRAIN?

At this point it is worth considering the benefits of efficient drainage:

- The most obvious is to establish a surface that dries out quickly. This is important for two reasons; it maintains playing levels and enables course maintenance schedules to be carried out.
- The turf is more healthy and durable. Imagine, if you were the grass plant, what it would be like to stand in the middle of a fairway barefooted in a bowl of water. In hot weather it might be pleasant for short time, but eventually your feet will resemble prunes. It certainly would not be the same in cold or icy conditions. Grass plants have no choice; they suffer if the drainage is poor.
- The soil structure is improved if there is free movement of water through it and nutrients can more easily reach the areas where they will be of most benefit, the root system.
- Water can do a lot of damage in the form of soil erosion if it lies on the surface too long.



A trench being cut on a green prior to the installation of a 60mm pipe. Note the turf has been removed along the line of the drain. Bands running at 90 degrees to the pipe are 25mm trenches cut with a wheel trencher and filled with Lytag



The installation of gravel bands on a green. As you can see the green has been hollow cored prior to the bands being installed

As part of understanding the need for drainage, it is necessary to look at the behaviour of water within the soil structure.

Through absorption and capillary action water moves through the soil in all directions including upwards. On entry, water is immediately attracted to the dry particles of soil, which they then proceed to soak through the process of absorption. The molecules then move on, seeking out any dry surfaces to hang onto, and in doing so pull more droplets behind them. As the droplets are joined together, capillary forces are created. From this, it can be seen that providing there are dry soil particles all around, the water droplets can virtually move in any direction. At the point when all the particles have become saturated, the soil will then be holding a large water mass and the only places for the remaining droplets to go are in the air spaces. These then fill up and as there is nowhere else available the excess water either floods to the surfaces or enters the drainage system, if one is available. The amount retained in the soil particles acts a reservoir for the plants.

The soils profile is another important factor. Compared to sand and gravel the flow is much slower on heavy clays or where there is compaction.

There are two basic forms of drainage, primary and secondary. On new courses a primary system, in all probability, was installed at the time of construction. Whether it is sufficient or satisfactory is another question. An older course may also have had one laid originally, but depending on how deep it was put may have a bearing on its present day functionality. As pointed out previously in the case of the spring, situations can change, these then require alternative systems to be installed that will alleviate the problem. The primary system forms the main infrastructure for removing excess soil water, through pipes, to an outflow.

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A wheel trencher cutting a narrow trench to install 60mm pipe. Compaction is minimised with low ground pressure turf tyres fitted to the tractor and a 4 wheel in line trailer to carry away arisings

The secondary system is for dealing with surface water and channelling it down to the primary system. This is usually achieved by slit drainage which relies on the water flowing freely through a course material which has pores big enough not to restrict its movement. The slits or narrow trenches are directly linked to the underground system, so the run off is not slowed down in the soil profile. A small diameter flexible drainage pipe, which is perforated, can be installed in the bottom of the slit and this is connected to larger outflow one. The slit is then filled to just below the surface with a course free draining aggregate.

These days virtually all machinery for laying drains is laser guided. A guidance beam controls the depth of the machine's cutting wheel through a hydraulic system. This means that the pipes are laid on a preset slope to ensure the water will flow away. These units can install drainage efficiently and with minimal surface disturbance.

Banding is another form of drainage, which is often used, especially on greens, to remove surface water as soon as possible. A series of thin trenches are cut from 40 cm up to 100 cm apart. These connect to the lateral drain system. They are then filled with either gravel sand or another aggregate, that has now become popular - Lytag. This is a by-product of the coal burning power stations and consists of pulverised fuel ash (PFA) which is made into rounded pellets by heating at very high temperatures. The result is a very light material, that does not degrade and it is said that because of its rounded shape and grading, excellent hydraulic conductivity is achieved. Because of its light weight it can also be transported over relatively soft surfaces, with less damage, than if it was gravel.

There is machinery now on the market capable of producing microbands. The main advantage of these, is said to be that play can resume almost immediately after the work has been carried out. They are designed to work on the three-point-linkage of a compact tractor and consist of a coulter disc which cuts the turf. This is followed closely by a vibrating stainless steel trench opener. A vibrating hopper is mounted above the unit and this feeds a permeable infill into the narrow trench that has been created. The infill is either brought to the surface or settled down by means of a depth adjuster. At the rear of the unit is a presser wheel that flattens the turf, ready for play to recommence.

Good soil drainage does not just rely on a series of underground systems. These can all be in place, but it is only working a relatively low level of efficiency due to compaction. Aeration and vertidrainage also play

an important role in moving water through the soil profile and they need to be a major part of every turf management programme.

There is now an alternative method of removing water from playing surfaces. These pedestrian operated machines act like giant sponges, soaking up the water in the turf. They are said to be able to remove approximately 3,410 litres (750 imperial gallons) of water per hour, so play can commence very quickly after a downpour.

Drainage is a highly specialised operation and requires specialist knowledge as it can be both highly expensive to install, and if wrong, to rectify.

For this reason it recommended that experts are called in, immediately the subject of replacing or improving an existent system is raised. This action can save a lot of problems and possible expense at a later stage. There are plenty of highly experienced drainage companies available and the best source of tracking down one of these is through the Land Drainage Contractors Association, who is based at NAC Stoneleigh Park, Kenilworth, Warks, CV8 2LG. Members are from all sectors of the drainage industry.

For readers who would like to find out more about the latest developments, the Association is staging a seminar and demonstration on Thursday, November 13, at the Sport England National Sports Centre at Bisham Abbey, Berkshire.

The programme will include papers by the leading figures in the industry and will cover the principles of sports turf drainage; contract management; drainage design and construction systems; turf establishment and aftercare.

There will also be working demonstrations of the latest machinery for pipe installation, gravel banding and sand slitting, plus vertidrainage and spoil conveying and back filling.

BIGGA members who attend this course will qualify for three CPD credits.

The cost is £111.62 per delegate and booking a place can be done either by telephoning 01327 263264, or emailing; secretary@ldca.org alternatively go to the website www.ldca.org.

Incidentally, as this article was being completed it had started raining regularly. No doubt drainage systems throughout the country will soon be working at full bore, so now is a good time to check that the outfalls are clear and working, otherwise where is the water going to go to?

Getting Better Every Year



Justin Waddell

"The standards keep going up and up and the decision was a difficult one." How often have you heard those words from a judge just before he announces the winner of a competition.

So often, in fact, that to say, "It's a cliché to say 'The standards keep going up and up and the decision was a difficult one.' is a cliché itself."

However, just to say it's a cliché doesn't detract from the truism that is being spoken and that was very much the case with the final of the 2003 Toro Student Greenkeeper of the Year Award, which was contested by eight evenly matched and extremely talented individuals.

The final judging was carried out by John Pemberton, of BIGGA, David Waldon, Chairman of BIGGA's Education Sub-Committee; Andy Brown, of Toro, and Pete Mansfield, of Lely UK.

As it was Keith Scruton, Head Greenkeeper of Colne Golf Club and Myerscough College, emerged as the winner and John Talbot, Head Greenkeeper of Ravensworth Golf Club and Askham Bryan College, and Justin Waddell, Assistant at Fortwilliam Golf Club and Greenmount College in Northern Ireland, runners-up.

Keith wins an eight week trip to the United States incorporating a six week course at the University of Massachusetts and visits to the Toro Headquarters in Minneapolis and California and the GCSAA Conference and Show in San Diego. John and Justin win trips to Harrogate next year for BTME & ClubHouse and access to all the educational events which make up the Continue to Learn programme.

The other six Regional winners were Paul Todd, Deputy Head Greenkeeper at Lanark Golf Club and Oatridge College; Dylan Jones, Pwllheli Golf Club and the Welsh College; Bobby Vining, Assistant at Mendip Spring Golf Club and Cannington College; Martyn Gray, Assistant at Bramley Golf Club and Merrist Wood College and Robert George, Deputy to last year's winner Murray Long at Coombe Hill Golf Club and NESCOL.

The competition continues to go from strength to strength and Toro must be thanked for providing such an incentive for the country's greenkeeping students.



John Talbot

Life is a Rollercoaster

Keith Scruton has experienced the lows and highs of life over the last 12 months but, as Scott MacCallum found out, he has certainly ended the year on a high.

"A year ago this Friday I was called to a meeting at my golf club and told that I was being made redundant," said Keith Scruton.

This isn't the start of a harrowing tale of a Head Greenkeeper who becomes disillusioned with the industry and begins to look for a job outside greenkeeping, but the story of a man who spots a silver lining around a potentially very black cloud, picks himself up and within a year has triumphed.

More of a Stephen Spielberg style "Against all Odds" film script than an Eastenders "Doom and Despair" story line.

A bit over the top?

Well, you be the judge. A mere 12 months on from being the recipient of bad news from a golf club which treated him poorly, Keith has a new job as Head Greenkeeper at a progressive golf club and has just become the 2003 Toro Student Greenkeeper of the Year.

"It is just starting to sink in now but when my name was announced I was just dumbstruck," said the 29 year-old Head Greenkeeper of Colne Golf Club, in Lancashire.

Keith is a character full of perseverance as highlighted by the fact that he had been an entrant in the Toro Student of the Year Award about 10 years before but failed to progress beyond the first stage. But the new resilient, tougher than teak, version took it all in his stride and can sit the

TORO
STUDENT
GREENKEEPER
of the year
AWARD

trophy alongside the Ernest Jones Award he won for being the top HND Student at Myerscough College earlier in the year. He was the first part-time student to win that particular prize.

The Toro Award brings with it an opportunity to spread his professional wings further as the six weeks study course at the University of Massachusetts will build on his knowledge immensely.

Although delighted to have reached the final eight from an initial field of 3500 applicants, and extremely impressed by the qualities of the seven other finalists Keith had told his family that he was heading to Aldwark Manor to win.

"There is no point in going to the FA Cup final and not lifting the trophy," said the Blackburn Rovers fan.

"But when he arrived at Aldwark for the final and found himself in a formal dinner on the Sunday evening with his fellow finalists and the judges it was not a football analogy he came up with.

"Sitting in the Barnes Wallis Suite in the Hotel with the huge chandeliers it was all very surreal and I couldn't help but think it was a bit like Fame Academy."

Having "sung for survival" and won over the judges he is now ready to take advantage of the superb prize.

"Nowadays everyone is looking for that extra five percent and the sort of experience and knowledge I will pick up in the States will be invaluable in enabling me to do that."

Keith was able to quiz the outgoing Toro Student Greenkeeper of the Year, Murray Long, Course Manager at Coombe Hill GC, at BIGGA HOUSE after his win had been announced and what Murray was able to tell him increased his excitement still further.

"He said that if he hadn't won the prize he would have gladly paid to go on the course himself, he had got such a lot from it. There can be no greater recommendation than that," said Keith.

"One other piece of advice he gave me was to get a warm coat and some warm gloves because Boston is freezing at that time of year," added Keith, of the trip which begins in January and also takes in a trip to the GCSAA Conference and Show in San Diego, California and the Toro Headquarters in Minneapolis and Irrigation Headquarters in California.

A great time lies ahead and all too different from the gloomy prospects which faced him when he lost his job the year before.

"I must admit I was delighted with the support I received from BIGGA. It was fantastic and I can't speak highly enough of the staff who, from the moment I got on the phone, couldn't do enough for me in taking on my case for unfair redundancy."

But he soon realised that BIGGA wasn't just there for a rainy day.

"I've also made full use of the BIGGA library in studying for my HND and also got hold of the BIGGA field guides which are really invaluable.

"I suppose I didn't have any particular perceptions of BIGGA before last year other than wondering what we got for our money. It's only when you look below the surface that you see how hard everyone works on behalf of the members."

He has also taken advantage of the Association's Ransomes Jacobsen Scholarship Scheme which helped him fund his HND.

Keith began his greenkeeping career at Darwen Golf Club where he was a junior member.

"I did some summer work during my holidays and getting good money for a 16 year old.

I told my dad that I wanted to be a greenkeeper and he wasn't happy as he wanted me to become an electrician, a plasterer or a brickie. There were a few arguments, particularly when I turned down some jobs."

Not to be dissuaded Keith wrote to Myerscough College for their greenkeeping package and with that in hand he was able to persuade his dad that there was a career to be had in greenkeeping.

"I was keen to learn the theory so if things went wrong I had that to fall back on."

One thing very much in Keith's favour was Darwen Golf Club which had a history of looking after its young greenkeeping staff - another of them Ryun Holden, now Course Manager at Oakmere GC, featured in the magazine earlier in the year.

"Darwen had a magnificent Chairman of Green, Len Sharples, who went through everything with me when I started in a two hour meeting. He told me exactly what the club would do for me with regard to college and my wages.

"I was on a YT Scheme six months trial to begin with and I remember my first wage was £36 and I remember thinking I'd need to save for two weeks just to get a pair of Levi jeans. Still I didn't question it because I enjoyed the job so much."

With the trial period successfully negotiated Keith saw his wages increase and in the end he remained at Darwen for eight years having spent six of them as Deputy.

Indeed one year Keith was the Level 3 Student of the Year and Ryun, a year younger, was Level 2 Student of the Year at Myerscough which reflects extremely well on the golf club.

Keith has been at Colne Golf Club since January and he is delighted to have joined a very supportive and progressive club whose previous Head Greenkeeper, Andrew Eddison, did his job in a very professional manner with good practices and procedures in place.



Keith Scruton



Standing L-R. Bobby Vining, Dylan Hughes , Murray Long, Ken Richardson, Pete Mansfield, Andrew Brown, John Pemberton, David Walden, Andy Campbell. Seated. Robert George, Martyn Gray, Justin Waddell, Keith Scruton, John Talbot and Paul Todd

"I have put my stamp on the course but it is very much fine tuning, evolution rather than revolution."

A nine holer Keith has developed his practices around the need to manage wear and concentrate on traffic routes more than on an 18 but he, along with his two staff, feels able to give more TLC to a course spread over 70 acres than one over 150 acres.

"There is a temptation for the golfer to go for an 18 hole course but we have a lot of quality and some excellent holes some of which are tackled from different tees on the back nine. There is talk of possibly increasing to 18 at some stage but we'll just have to see."

Few people have been in quite such a good position to appreciate the support the industry gives to greenkeepers and he is particularly indebted to Toro for supporting the competition.

As he prepares to head to the States he is thankful of the overwhelming support he has received from his wife Louise, who will be left in charge of three year old Matthew and the latest member of the family, Joshua, who was just four months old when his dad lifted the crystal bowl confirming his success.

He will no doubt grow up to be very proud of a father who turned his life around in the space of 12 rollercoaster months.



The 2003 Toro Student Greenkeeper of the Year flanked by the two runners-up



Every one a winner

YOUR LETTERS ARE NEEDED!

Send to: Scott MacCallum, Editor, Greenkeeper International, BIGGA HOUSE, Aldwark, Alne, York YO61 1UF, or email them to: scott@bigga.co.uk

What does the future hold

The STRI has indulged again in its love of writing ill informed comments about the use of soil biology to help greenkeepers produce better playing surfaces.

Based on out of date information, using results generated by a trial, the protocols of which any student with a basic grounding in healthy soil could see were seriously flawed and could not give a quantifiable result, Bob Taylor wrote an article that is many years out of date, full of contradictions and factual errors.

The whole point of using microbial inoculants and biostimulants is to reduce chemical use and toxic residues in the soil. This allows you to recreate, as far as possible, the microbial food chain of bacteria, fungi, mycorrhizal fungi, protozoa and beneficial nematodes that inhabit healthy soil.

Grass has evolved over millions of years to rely on microbial associations for growth and no amount of wishful thinking by the STRI will change the basic processes of nature. Plants will grow in a sea of chemicals; but if pesticide use is to be reduced, then methods of applying and maintaining the microbes essential for plant growth to become viable in intensively used sports turf must be used.

When the soil food chain is complete nutrients are recycled, thatch is converted to humus, and the natural growth promotion and disease suppression properties of the soil can be used to benefit the growth of sturdy, fine grasses for a good playing surface.

Cleaning chemically saturated soil takes time, incredible results can be seen in weeks or it can take a year or more, which is why all reputable biotech companies work out individual programmes and provide technical support to ensure constant improvements.

Recent research has shown more about the mechanics of disease suppression, which microbes favour poa annua and how fine grasses can be promoted, how to use thatch to produce humus, improve CEC and nutrient retention and more importantly how all this works on golf greens and tees.

Using microbial additives to develop healthy soil using natural processes to recycle nutrient, promote fine grass growth and disease suppression is now part of the modern greenkeepers management strategy, hype it most certainly is not.

Symbio will be holding a series of free seminars, covering the latest developments in creating and managing healthy soils to the greenkeepers advantage, to which all greenkeepers and STRI consultants are invited. At the time of writing the following venues have been fixed.

Three Rivers Golf Club, Chelmsford, Essex, 12th November
St Andrews, Fife 13th November (12.30 start)
Marriot Tudor Park Golf Club, Maidstone Kent, 19th November
Stamford Golf Club, Stalybridge, Cheshire, 26th November
Hinskey Heights Golf Club, S, Hinskey, Oxfordshire
27th November

Each Seminar will start at 2.00pm if you would like to attend please call Symbio on 01372 456 101.

Martin Ward, Managing Director, Symbio

What does the future hold 2

I read the article you published by Bob Taylor of the STRI "What does the future hold" with some dismay. The general tone and unscientific nature of the article seems to quite unnecessarily set out to damage a growing biotechnology industry which, in my experience, has a lot to offer Course Managers.

At Radcliffe we first started working with microbes in 1995 because we were desperate, with thatch, black layer and disease problems; we had tried all the cultural practices mentioned by Mr Taylor without success.

The STRI advised us that the solution was to rebuild our greens. The cost of doing so was prohibitive so we looked for another solution and in the end we trialed a solution developed by Symbio on five greens. The results were so good that within a month we treated all the greens and microbial additives have been a central part of our course management ever since.

Thatch and black layer quickly degraded and the greens dried out in winter, but most importantly the total programme was paid for in savings to our fungicide budget because fusarium and other diseases almost disappeared.

The improved percolation, root growth and grass cover permit play for at least an extra 30 days a year on the main greens, bent grasses are replacing poa annua and as far as I can see there is no hype, at Radcliffe all claims made for the microbial additives have been met.

Les Wake, Secretary, The Radcliffe on Trent GC

What does the future hold 3

I read Bob Taylor's article "What does the future hold" in the October issue of Greenkeeper International.

From his comments he seems to be knocking Symbio. I used Symbio products when I worked in Greece, from 1997 until I left at the end of last year. I used them under very difficult conditions, temperatures on greens in June, July and August were 40 degrees plus. My irrigation water came from the hotel's sewage treatment plant, with the only good thing about that, being I did not need any additional NPK.

I believe you feed the soil and not the grass and everything that Martin Ward of Symbio told me about his products and what they would do for me worked.

I cannot speak highly enough about Symbio's products and their employees.

In his article Bob states we still need to use aeration, and I agree with him. However, in the trial the STRI conducted between May and November, which I make that a six-month period they only aerated once, I aerated 12 times a year, and I am sure I am not alone in believing in aerating every month.

Symbio never told me that I could get better results by using their products and I could also stop aeration. If the STRI were going to conduct a trial I would expect them to conduct it as any sensible Head Greenkeeper would.

Anybody reading this article who had never used bio products, would think that all of us forward thinking Greenkeepers had wasted our club's money. Oh, how wrong they would be.

J.H.Bragg, Ex Head Greenkeeper, Porto
Elounda Golf Club, Crete, Greece

This debate will continue in next month's issue

Trees

Trees on the Golf Course - Friend or Foe?

Simon Marrington, woodland consultant with John Nicholson Associates Ltd examines the role of trees on a golf course.

Landscapes are constantly evolving. It is nature's law that everything on a golf course grows and where it is not kept in check by nature itself, then managerial control becomes essential. It is all too rarely accepted by 'preservationists' (as opposed to conservationists) that change is inevitable and that positive management is required simply to maintain the status quo.

A good example is Flackwell Heath Golf Club in Buckinghamshire where work has recently been completed in the form of a three year programme of scrub clearance and woodland management operations. As with many of the more established clubs, the age of the course was beginning to tell. Recent decades had seen a natural increase in tree cover as regeneration occurred away from the manicured playing surfaces. Ingress had affected the strategy of several golf holes, as the woodland and scrub expanded and trees had grown up in places which were not appropriate. Tees and greens had begun to suffer due to the heavy shade cast, with dense crowns restricting both light and air circulation.

Furthermore, large areas of valuable chalk downland habitat were being eroded due to the succession of hawthorn dominated scrub and other associated vegetation. Most members' clubs are fortunate to enjoy well documented histories and a wealth of historical pictures. Having studied photographs of Flackwell Heath across the decades it became clear to Course Manager Dean Jones that the course had previously benefited from an open aspect and that management intervention was imperative. He recalls 'heathland communities (as suggested by the golf clubs name) from the upper reaches of the course had already disappeared and we were faced with losing another part of the club's heritage'.

A management plan was commissioned with John Nicholson Associates. The existing tree and vegetation cover was surveyed and management prescriptions which would ensure their sustainability were identified. A holistic approach was adopted, with the overall aim being to create, or to maintain a mosaic of grassland, woodland and scrub habitat within the framework of the golf course.

Numerous benefits are achieved by adopting conservation management on the golf course. By producing a management plan for instance, a better understanding of habitats, soils and ecology is likely to come hand in hand with improved relations with statutory bodies, such as the Environment Agency, English Nature and local authorities. Most golf clubs share common interests, with management objectives being landscape and conservation based. Clubs which demonstrate a firm



Marbled white butterfly



Orchid

commitment to nature conservation are far more likely to secure funding through the range of grants that are now available. The work at Flackwell Heath was part funded by the Forestry Commission under the Woodland Grant Scheme.

Large areas of scrub were removed completely, using a tracked excavator based mulching unit. Such machines have incredible work rates and are capable of clearing up to a hectare per day. The woody material is shredded and stumps reduced in one pass, yet the machine is manoeuvrable enough to ensure desirable stems may be marked and retained.

Existing woodland was selectively thinned by 30% ie. nearly one third of the total number of trees was removed. This may sound drastic, but it must be remembered that there are literally thousands of trees on most inland golf courses and once thinning is complete club members are amazed how little the woodland has changed to the layman's eye. The woodland edge was cut back completely where encroachment had occurred. Poorly formed, suppressed or defective stems were targeted for removal. The opportunity was also taken to reduce the proportion of exotic or non native tree species within the woodlands.

The result? Reclaimed chalk grassland has been colonised by spotted, pyramidal and bee orchids, a variety of wildlife (including marbled white and chalk blue butterfly species), flowers and grasses during the first growing season after scrub clearance. These areas are complemented by patches of scrub retained for habitat and landscape diversity and large areas of managed, predominantly native high forest, where future growth will now be concentrated on the better, more attractive trees that remain. These stems will now be able to develop unhindered and reach their true potential. Adjacent playing surfaces will benefit from improved light penetration and air circulation. Course agronomist Andy Cole (PSD) agrees, 'fine leaved grasses such as bents and fescues are simply not shade tolerant and the grass sward had deteriorated as broader leaved grasses started to prevail around the woodland edge.'

From the player's perspective, Associate Consultant at John Nicholson's, Ken Brown, concludes.