



should be located outside the playing areas. The location and condition of any existing land drains should also be determined during the planning and design stage, as they may be incorporated into the new design.

The depth of the surface drains depends on their function as well as soil type. For example where the drains alone are used, the soil type is an important consideration, where other secondary treatments are used subsurface drains act mainly as carriers and the soil type has less importance. In free draining soils, deeper drains may allow wider drain spacings. In heavy clays with poor filtration, drains should be shallower and closer together.

The appointment of a well-established consultant/design and build contractor will ensure that the client receives a comprehensive design service and that a suitable system is installed, providing the necessary infrastructure for any subsequent secondary drainage operations.

Once the design has been agreed and the costs approved its time to get the job underway. It is worth making the effort to find a specialist Sportsturf Drainage Contractor, as it is important that those who undertake the project are properly trained, equipped and fully experienced. Contacting associations like The

Land Drainage Contractors Association is a good starting point. Their members include companies such as, White Horse Contractors Limited, with over 43 years experience in the industry. These specialist contractors will have invested in the most up-to-date equipment and plant specifically adapted for working on sportsturf and as members of the association their workmanship has already been assessed and won the approval of many bodies within the industry.

On an existing site there may be some surface disruption. However, this must be kept to a minimum, the trenching machines should be fitted with elevators and conveyors in order that the trench spoil can be conveyed to suitable trailers to avoid contamination or damage to the playing surfaces. On new constructions before topsoil placement it may be possible to spread the excavated soil on either side of the trench line. Trench spoil may also be used to create a landscape feature, but all unsuitable spoil must be removed.

This year the ground conditions for trenching are as near perfect as they could be on many sites, the damp subsoil layer mixed with the dry top layer creates a crumb effect which helps to provide smooth sides and bottom which allows the pipe to sit

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Drain power



level in the trench. Today's modern trenching machines are fitted with lasers, which take away the guesswork in levelling and ensure that a true fall is achieved.

Once the primary system has been installed secondary drainage may also be a consideration. These range from sand slitting and banding, which consists of an intensive matrix of narrow sand or gravel bands running at right angles to the under drainage. The trenches some 250mm

deep are normally filled with suitable coarse sand or with 5-10mm washed gravel topped with sand. Sand grooving may be used in areas of high usage.

If the drainage system is to be efficient a certain amount of maintenance will be required. For an intensive piped drainage system to work efficiently, it is important to try to maintain an 'open' surface to all drain lines; regular applications of approved sand top dressing in conjunction with vertidressing can help to delay the natural capping process. This should be carried out twice a

year for a minimum of three years then reviewed. It should be noted that on heavy clay soils, settlement of the trench lines might occur during dry periods. This may lead to future requirement to top up these trench lines and must be budgeted for.

Funds invested in quality schemes will from the outset provide value for money and produce lasting improvements to the facility, allowing greater use throughout the year.

Most new builds will benefit from the installation of a comprehensive piped drainage system. This must be of prime importance and should be given due consideration at initial design stage.

Is it too late to get help? The answer of course is: - it is never too late to take action to maintain and renovate the surface. However funds invested in preventative measures are always more cost effective in the long term. The only difficulty you may have now is trying to find the right contractor to do the job, as many are inundated with enquiries and requests for work.

Everyone has a budget and as stated earlier you might be tempted to cut costs, but if you already have a problem, why add to it. Face the problem now and with the help of an experienced drainage contractor your facilities will be enhanced and leaving you content in the knowledge that whatever the weather you are prepared.

The many clubs and facilities that have invested in primary and secondary drainage schemes are reaping the benefits now and will continue to do so in the future.



Jim Crabbe is Contracts Manager for White Horse Contractors Ltd Tel: 01865 736272

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Greenkeeping on a tight budget does not have to be restrictive and can be the driver for best practice. Kevin Marks visited Bargoed Golf Club to look at the innovative equipment maintenance regime that is reaping great benefits for the members at the Mid Glamorgan club.

Maximum impact

Bargoed Golf Club is located 15 miles north of Cardiff, 350 metres above sea level in the Rhymney valley with stunning distant views of the Brecon Beacons. The club was formed in 1913, but it took a further 10 years to raise the funds to build the initial 9-hole course. In 1972 a further nine holes were added, at a cost of just £8,000, to produce the 6,049 yards long, par 70 course that is in use today. There are over 500 playing members including a very

strong junior section of 60 very keen youngsters.

The original nine holes were created from the rocky valley slopes following the natural ground contours, while the 1972 addition was built on nearby farmland and this has resulted in two distinct characteristics for the course. Head greenkeeper Robert Wilkinson often describes it as one half 'mountain links' with natural fescue grasses and heather and gorse lining the fairways, while the other half is a typical parkland course punctuated with trees and bushes.

Clive Poole has been the Greens Chairman at Bargoed for the past three years and said, "We have one of the best inland courses in South Wales, with immaculate greens and fairways. Although not the longest course in the region it offers an excellent challenge for golfers of all levels, while offering easy walking and spectacular views."

Like many smaller clubs, Bargoed has to keep a tight rein on finances, so it is vitally important that the annual greenkeeping budget of £18,000 is used to maximum advantage. This budget covers all greenkeeping requirements such as fertilisers, grass seed, top dressings, spare parts and lubricants but excludes wages and capital expenditure on new equipment. Far from constraining Rob Wilkinson and his

Below: The greenkeeping team of Paul Jeffries, 22 years at the club; Rob Wilkinson, 10 years, Richard Greenway, 14 years and the most recent member of the team, John Davey, who has just completed his first year at Bargoed



three-man team, working within the demands of the budget actually inspires them to be innovative in the way that they undertake their daily tasks.

A new 600 square metre workshop and storage facility was built in 1996 at a cost of £40,000 and integral to the design is a small kitchen and rest area, together with shower and toilet facilities. A special chemical store was also constructed to comply with H&S legislation. The workshop is the responsibility of Assistant Head Greenkeeper and Mechanic, Paul Jeffries, a self-taught technician from his days as an amateur rally-driving enthusiast. Paul has been with club for 22 years and will tackle any job however large or small, he even services, repairs and maintains the club's JCB. The workshop is a testament to his commitment; there's a place for everything and everything was in place, from hand and air tools to welding equipment and cylinder grinding machines to gang mowers

Below: Assistant head greenkeeper and mechanic Paul Jeffries on the pristine, 10 year old Ransomes GT Classic



and trailed aerators. They have also purchased an hydraulic pipe repair kit and carry out all their own puncture repairs, making it almost totally self-sufficient. However large a storage area is, it's never quite large enough and equipment has to be double-parked. This means that it has to be moved frequently to access equipment at the back. Paul Jeffries has looked at this and devised a clever method to alleviate the problem.

Every item of equipment, however large or small, is stored on wooden pallets. A hand-operated pallet truck is used to lift and move the equipment around the shed. There's no need to hitch any of the larger trailed or hydraulic equipment to a power unit or for any manual heavy lifting of smaller items, which is excellent from a health and safety perspective, a point emphasised by the inspector during their last H&S review.

Looking at the turf maintenance equipment is yet another revelation. Much of the equipment is over five

years old, but from the immaculate condition you would never realise it. This is epitomised by a pristine Ransomes GT Classic, now entering its 10th season, and looking as good as when it left the factory. Paul has lavished considerable care on this machine, including a complete overhaul, rewiring, respray and new decals.

The course uses predominantly Textron equipment including Jacobsen greens, tees, surrounds and rough mowers, Ransomes hydraulic gangs, an Iseki compact tractor and a Cushman Turf-Truckster with various attachments. However, head greenkeeper Rob Wilkinson also runs a Kubota G1900 rotary, an Allen National triplex, a Wiedermann verti-drainer, a Massey Ferguson 240 tractor, a Wessex greens sweeper, a Sisis scarifier, a 3-tonne 4-wheel drive dumper and the JCB already mentioned.

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Maximum impact



Above: Equipment is stored on pallets and a hand-operated pallet truck is used to lift and transport the items around the shed. This prevents any manual lifting and saves time and effort hitching to a power unit

Below: A section of the 'Mountain Links' part of the course featuring natural fescue grasses with heather and gorse lining the fairways



consuming task, it's just a case of a regular maintenance regime that everyone on the team buys in to. Oil and water checks and a visual inspection are carried out daily and it is the responsibility of the operator to wash down each piece of equipment used during the day. This is a policy that is followed with an almost religious zeal as the corrosive nature of macerated grass is fully appreciated by the team. This is done in a special wash down area using an industrial, heavy-duty steam cleaner, powerful enough to reach the most inaccessible areas on any machine.

"We purchased the steam cleaner second-hand about 5 years ago and it has been excellent. Being of industrial quality it is much more powerful

than most other machines and cleans the equipment brilliantly," says Rob Wilkinson.

Every week, each machine receives an extensive lubrication, with every grease nipple located and lubricated with a transparent grease. This involves putting the machines on ramps to get to every lubrication point, not just those that are visible.

This is followed every month by an intermediate service including the resetting of blades and back lapping with both an 80 and 120 compound, if required. Each winter, every machine is stripped down, completely overhauled and rebuilt for the following season. Every second year the machines are resprayed.

There's a report board in the workshop where notes indicating any faults or problems are posted so that rectification can be carried out as soon as possible. Each machine has a detailed logbook designed by Paul Jeffries containing a complete history of every service, maintenance and repair carried out. He also has parts books for every machine and ensures that when parts and spares are ordered, a part number is quoted every time, thus ensuring that the correct part arrives. Over time he has built up an extensive stock of parts and consumables, mainly items that are used regularly such as hydraulic filters, oil filters, drive belts, plastic drives, etc.

"This might appear to be an unnecessary expense," he says, "but it has been built up over a number of years and ensures that we have as little down time as possible. If I don't have an item in stock I can always call R S Bird our local dealer in Cowbridge

and they normally get the part to us within 24 hours."

Paul continued, "Readers might think that our maintenance regimes are excessive, but our policy is little and often; we never let things deteriorate. Regular maintenance at any club, large or small, is essential but here on our limited budget we have to get as many hours out of each machine as possible and this system works for us."

Rob Wilkinson added, "We used to lease purchase the machines in the past, but by making sure that we maximise the life of the kit we have been able to accumulate funds and we now purchase new equipment outright, as we have done when we bought the Jacobsen Turfcut and Iseki tractor last year."

News of the success of the service and maintenance work undertaken at Bargoed has spread to some of the smaller clubs in the valleys and they now use Paul Jeffries for some of their more difficult repair tasks. "This has worked well, as we sometimes carry out servicing and repairs in exchange for an unwanted piece of equipment which I know I can refurbish and use here at Bargoed," he said.

The final words are left to Club Secretary, Geoff Williams, "The club is very proud of the greenkeeping team, the way they maintain the course and look after the equipment. Lifelong learning is becoming the norm in all professions, especially greenkeeping. I hope that by sharing some of the practices adopted here at Bargoed that every club, however large or small, can benefit in the longer term."

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Paul will be taking on the role of Technical Area Sales Manager and will be covering the Yorkshire Region.

Paul can be contacted direct on 07976 596 214 and we welcome him to the Sportsworld Team.



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Those lucky enough to be entered in the 2001 BIGGA National Championship have a real treat in store with the rare opportunity to play two of the finest courses in the country possibly on the way to winning some of the most prestigious silverware in the Association's possession. Royal Birkdale is regarded by many as the finest course in the country while Southport & Ainsdale, a two time Ryder Cup venue in the 1930s., but a scan of the web produces other tributes to both of these great courses...

Just Champion



I know everyone at Royal Birkdale is looking forward to hosting the first day of the BIGGA National Championship and my team and I will be making sure that the course is set-up so that everyone will enjoy their visit. We shall certainly look forward to meeting up with fellow greenkeepers from all over the country

Chris Whittle Head Greenkeeper,
Royal Birkdale GC



We are delighted to be hosting the final round of the 2001 BIGGA National Championship and I am sure the players, whether in contention for a prize or not, will thoroughly enjoy playing the course we shall be preparing for them. I am also looking forward to meeting fellow greenkeepers from around the country and I'm sure it will be a superb occasion

Mike Mercer, Head Greenkeeper
Southport and Ainsdale GC

Southport & Ainsdale (S&A), situated in the famous belt of linksland near Southport, lies adjacent to the main Southport to Liverpool railway line, across from Hillside.

Established in 1906, Southport & Ainsdale soon became famous. Having already held several tournaments, S&A was chosen to host the Ryder cup in 1933 and 1937. Few changes have taken place since then and many of the holes are still as they were when Sam Snead and Percy Alliss graced a course which was regarded as the toughest in the country by professionals at the time.

S&A also hosts many local and national championships, including the Open qualifying rounds. A links course by nature, S&A is a fair test of golf, stretching to 6,687 yards in length off the championship tees and 6,285 yards off the yellow tees.

Royal Birkdale is a championship course par excellence. It provides a most formidable, yet always fair, test of links golf and fully deserves the accolade of recognition as a venue for the one of the world's golf classics.

The test it provides is a complete one. It tries the golfer's skill, character, nerve and intellect.

Along with Muirfield it is justly regarded as the fairest of all the British Championship links courses. It is modern and progressive without

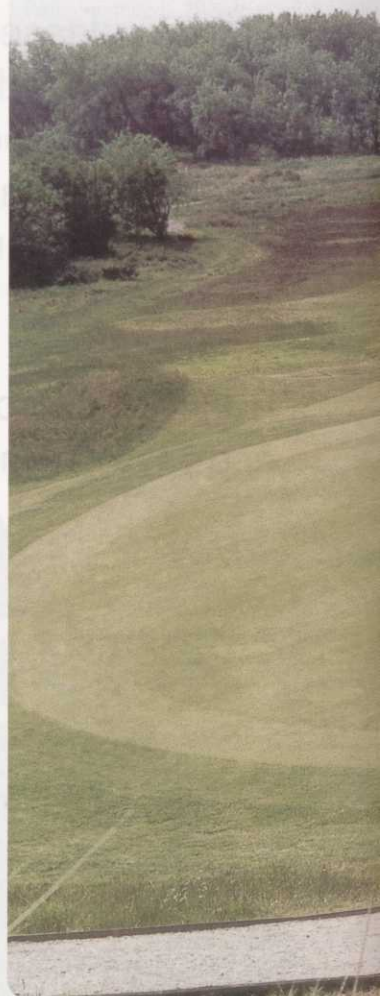
betraying the game's heritage. If ever the Open were to be given a permanent venue, Royal Birkdale would have a widely-accepted claim.

Birkdale exploded onto the championship scene in 1946 with the Amateur Championship and celebrated its centenary in 1989. Since then it has staged numerous championships and international matches for the best amateur and professional, men and women golfers, including the biannual matches between teams representing GB&I and America; the Curtis Cup; the Walker Cup and the Ryder Cup. Above all though, Royal Birkdale is an established venue for the Open Championship.

Each hole runs in the valley between towering sandhills. The problems are clearly stated but if you stray from the fairway, the sandhills, buckthorn and scrub can be punitive. The signature hole at Royal Birkdale is the 17th – a 547-yard par 5. Great accuracy and boldness are required – the twin sand dunes, some 240 yards from the tee, pose a real challenge, even with help from the prevailing wind.

Royal Birkdale can also boast the accolade of being voted number one in the top 100 golf courses in the British Isles.

Information from:
www.golf-england.co.uk/golf/sanda.htm



Pictures by Alan Birch



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