ideal. Fitting grooming reels has also increased the 'professional' look of the greens, removing thatch and horizontal grasses.

At the end of the day everyone agreed that the exercise had been a real success and one or two members even admitted that perhaps they would spare a thought for the organiser's next time they were in the bar. petrol as a safeguard of our environment, they are aware of the problems arising from the un-availability of two star petrolthe grade most widely used for powered turf-grass machinery.

The Association has issued the following guidelines for four-stroke engines used to power mowers and other machinery.

All engine manufacturers approve and

combustion chamber and valves.

This action is recommended as a precautionary measure, as in a few instances the use of unleaded petrol could result in existing carbon deposits breaking loose causing mis-firing and internal damage.

Where two star petrol is not available, and the user does not wish to change to unleaded, four star may be used, although some engine manufacturers caution that prolonged use may lead to over-heating when full power is being developed.

For more detailed information individual engine manufacturers or concessionaires should be consulted.

New company enters turf market

The multi-million pound market is about to be joined by a new South Humberside company which expects to be one of the top five producers in the UK in its first year. Tillers of Worlaby, near Brigg will produce several different grades of seeded turf aimed at the top end of the market primarily for golf courses, bowling greens and general landscaping.

Managing director Tim Fell has wide experience in both horticulture and agriculture - he established Lindum Seeded Turf in 1984, a business which he ran successfully for five years until setting up this new

A graduate in Agricultural Botany, he spent several years as an agrochemical sales-



Toro machines at Cotswold Hill Golf Club

Guidelines for use of leaded and unleaded fuel

Whilst the Garden Machinery Association whole heartily support the government moves to promote the use of unleaded

recommend the use of unleaded petrol in new engines.

When changing from leaded to unleaded petrol in engines that have run for a considerable period of time i.e. 50 hours or more, most engine manufacturers advise the removal of carbon deposits from the



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For Less

man for Fisons, before returning to the family farm in Lincolnshire.

Investment in the new company is in excess of £1/2 million and the first field-grown turf will be available from the spring of 1990.

Tim Fell told THE GOLF COURSE; "We have spent considerable time finding the best soils for turf production, selecting A1 high quality speciality seed and putting together an experienced team of growers and sales personnel-we are aiming for the top in terms of output and quality".

The company plans to sell through wholesale distributors, large volumes of high quality turf which will be available all year round.

Mower saves hard work on banks

One of the country's most beautiful golf courses, Broadstone in Dorset is a tough test of golf. The undulating heathland also poses supreme problems for maintenance with its many steep banks.

In the past, tee banks and similar areas, have been cut by hand - with difficulty and labour intensive. However, the recent purchase of a Ransomes Turftrak 4-21D with its four wheel drive and a 60in rotary deck has allowed most of these steep areas to be cut by machine - with a greater degree of safety, in less time by one man. "It is amazing where it will go", said Adrian Archer, course manager. "As yet we havent used it anywhere near it's potential". The club bought the Turftrak following a demonstration by Stanley West Ltd of Ferndown because they saw and believed in its sure-footedness - furthermore 'the price was right'.



Adrian Archer cutting a tee bank with the Ransomes Turftrak

In justifying the selection of the 21hp model Adrian stated that this diesel provides ample power without being stressed. The wide tyres not only provide exceptional grip but never mark the turf. The good weight distribution of the Turftrak was seen as an important contributory factor in both grip and in minimising turf damage.

The rear hydraulic linkage - category 1-will allow him to use Broadstone's existing implements for the full range of slitting, sanding and other duties. He also intends to buy the triplex reel mower unit. As staff become used to the Turftrak's capabilities, Adrian expects them to take it into places "where no machine has gone before" - and to do it with ease.

Already he has been amazed at the ease with which the machine climbs grassy banks, only tempered by the worry of finding rabbit burrows in its path to upset

IRRIGATION PRODUCTS

the equilibrium, a problem only likely to be encountered when working at extreme angles.

Adrian commented about the speed with which the machine could cut but then added that perhaps this comment should be deleted as some club members already thought that his staff drove too fast!

The machine has already become a favourite with the five staff for its comfort, quietness and effortless manoeuverability - it has full hydrostatic steering. Other plus points already noticed have been the strong halogen lights and the large toolbox which takes waterproofs as well as the tools required for basic maintenance. Another plus - was the ease of tensioning the drive belts or the speed and simplicity of changing or removing equipment.

The prime use for the machine - the one for which it was principally bought - is for



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Always ahead of the game

cutting the extensive areas of the rough at Broadstone. It is also a safer method of cutting steep banks than using hover mowers with ropes.

French students at Sisis

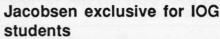
Sisis Equipment (Macclesfield) Ltd hosted a party of French greenkeeping students, from the Lycree Agricole Henri Queille at Neuvec, in mid May.

The students travelled from France by coach and spent two days with Ransomes

professional products outside North and South America;

Ransomes USA will control the United States manufacturing and distribution operations of Ransomes professional grass machinery products together with sales of all Ransomes professional products throughout North and South America. Ransomes Consumer Division will look after the UK and European manufacturing and distribution of Ransomes' consumer products including the businesses of GD Mountfield and the recently acquired

Roy Ashwell, Managing Director of G D Mountfield Limited, becomes the Director responsible for Ransomes Consumer. Eric McCoy and Helmut Adam continue as Directors responsible for Ransomes Commercial and Ransomes USA respectively. Colin Booth and Keir Wyatt will continue as Finance Director and Marketing Director, respectively, of Ransomes Commercial.



For many years the Institute of Grounds manship has led the UK in organising seminars, training courses and examinations on all aspects of turf culture. Now with the help of the Jacobsen Division of Textron Inc in the UK the Institute is to organise a Turfcare Seminar for 20 top students from colleges throughout Britain. Students will be invited to attend on the recommendation of the Institute in association with accredited educational centres. The three day venue will feature lectures and demonstrations from respected worldwide turf care professionals and educators.

In addition to the August seminar, two British students, along with an IOG representative, will be invited to attend the US Jacobsen College Student Seminar at Racine, Wisconsin, the home of the Jacobsen company.

The Jacobsen College Student Seminar has been running in the United States for over 25 years and is recognised as being the major event in the Turf Care Industry.



John Ashton demonstrates the Hydromain 20

at Ipswich before arriving at the Macclesfield factory.

Pictured John Ashton, one of the Sisis demonstration team, putting the Hydromain 20 through its paces at a local golf club.

Name change at Ransomes

Ransomes Sims and Jefferies PLC is to ask for shareholder approval, to change its name to Ransomes PLC. This change in name reflects recent changes in the Group's activities, particularly its withdrawal from the farm machinery market to concentrate on grass machinery, where it is one of the world's leading manufacturers. It also proposes a restructuring of its business into four divisions reflecting the key markets in which the company now operates:

Ransomes Commercial Division will handle the UK and European manufacturing and distribution operations of Ransome's professional grass machinery, together with worldwide sales of all Ransomes Granja, France and BTS Green, Italy. The Property Division will be responsible for Ransomes' property activities through Ransomes Property Developments Ltd and Ransomes Park Ltd which are involved in property developments and investments respectively within Ransomes' 170 acre site, outside Ipswich.

This restructuring of the Group's operations will give greater focus to the four key areas of Ransomes business. It will also enable Bob Dodsworth to devote more time to the development of Ransomes' worldwide business. He previously combined his role as Group Chief Executive with the management of Ransomes' lpswich operation. He will be supported by a newly appointed Group Financial Director, Geoffrey Comer.

A number of Board changes have also been made. Geoffrey Comer a chartered accountant becomes Group Financial Director. He joins Ransomes from London International Group where he was Group Treasurer.

Better to be safe than sorry!

Kerrypak's Tildenet safety perimeter netting is used widely throughout the sports industry worldwide, providing cost-effective and discreet protection for spectators and property from possible damage from stray balls.

It is particularly practical for golf courses and ranges where it blends sympathetically into the local environment whilst playing its important safety role.

Rot-proof and tear resistant, Tildenet safety perimeter netting is available in various widths, and advice on exact requirement and how to install the netting to achieve its maximum effect is readily available from Kerrypak or their agents.

In addition to safety perimeter netting,

Bristol-based Kerrypak also offer golf practice netting either for cladding existing golf net frames, or in full frame kit form. Designed to professional standards, the kit is easy to assemble, and dismantles to a compact size for easy storage.

Both Tildenet products are competitively priced and can be obtained through Kerrypak's UK and international distributor network. Further information is available from Kerrypak Ltd, Longbrook House, Ashton Vale Road, Bristol BS3 2HA. Tel: 0272 669684/662455.

the clients planning permission that the course must be constructed by a recognised contractor under the architectural supervision of a member of the British Association of Golf Course Architects. This is a sure way of stopping housing applications in conjuction with golf courses being used purely for financial gain on planning and with a poor quality golf course resulting.

The company is also involved in the reconstruction of the Eden Course at St Andrews including the first ever lake on

providing a construction management team again working under the direction of Donald Steel at Vila Sol, an 18 hole course on the Algarve.

Grass care system from SCH

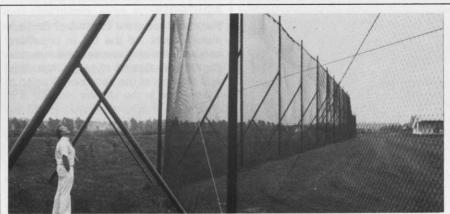
S.C.H. (Supplies) Ltd has recently introduced a new grass care system which has been named the 6-1 Grass Care System. The system in standard form, has a working width of 48ins (122cms) and is an ideal low cost grass care system for



sports clubs, colleges and schools, amenity grass areas and larger estate gardens which require a grass care system but cannot justify the cost or have the use for a more sophisticated system.

New manager for Wessex Peat

Wessex Peat Group has appointed Carl Crome as general manager in order to maintain the expansion of the peat products growing mediums and sports turf dressings. Carl joins the company after 15 years management experience within the industry.



Tildenet safety perimeter netting

Pierson's progress

Brain D. Pierson (Contractors) continue to dominate the UK golf construction scene with two 18 hole courses currently under construction at Tarporley in Cheshire and at Bodmin, Cornwall. Tha latter to a design by Hamilton Stutt is the first occasion where is has been written into the agreement of

the hallowed turf as well as the completion of the new Jubilee course. Both these contracts are under the direction of architect Donald Steel and links management trust secretary Alec Beverage. Throughout the construction Walter Woods links supervisor and his staff have been of great assistance. On the continent Pierson's have been rebuilding at Chantilly and they are

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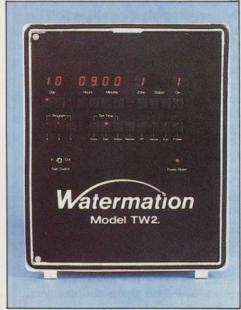




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IRRIGATION



Never use water to make greens soft

Jim Arthur discusses the methods of irrigation and gives advice on the correct use of water.

hile everyone plays lip service to the fact that the main problem measured in terms of weeks duration in Northern Europe golf greens is drainage and not drought, nevertheless a week of sunshine has most of those controlling course management, (and this is not synonymous with golf course managers!), rushing to put water on. It would be more sensible to use this heaven sent gift to control annual meadow grass on the lines of the old Scottish greenkeeping adage 'a good drought gets rid of a deal of rubbish' but one has to accept that most of today's golfers like it green and in their books if grass is not green its dead or dying!

Automatic pop up irrigation is here to stay – I suppose today there are more clubs with it than without – so it is important that this useful facility is not abused. Pop ups are only a way of watering at night, when there is minimum evaporation, without tying up staff during the day (when often in the old days of hose and sprinkler watering greenkeeping staff could do little more than mow and water greens). They also prevent players interfering with hose and sprinklers, which is far more significant an advantage than hoses interfering with play!

What pop ups cannot do is apply water other than uniformly and that only when the system is properly designed, fully functional and efficiently employed. Badly designed systems are less commonly found than they were a decade ago - the 1976 and 1977 droughts demonstrated only too dramatically how bad was the coverage on some - notably the three headed systems for large greens, where one could stand in the middle of a green and not get wet! It is no answer to such poor coverage to merely increase the duration of irrigation, the dry areas stay dry and the wet ones become waterlogged and thatched.

The aim of pop up irrigation should be to apply the equivalent of a light shower

each and every night, to give the minimum needed to keep the grass alive in the low wetter places, and to apply the balance needed to the drier, raised or sloping areas by hand-held, open hose preferably early in the morning.

Penetration overall must be achieved by long term aeration (however this is done), backed up locally on drying patches by using even hand forks or local quite deep (4" minimum) slitting or solid tining, and employing wetting agents copiously and before the soil has become dry and waterproofed.

There is nothing new in dry patch – (although it is often made more obvious because of the contrast with wetter lower areas). Sixty years ago greenkeepers were using hand forks and soft soap solutions on dry patches long before detergents had been invented, let alone the modern wetting agents based on them and designed for turf use.

There is one hearsay that must be demolished, namely the theory that

IRRIGATION

greens should be watered heavily at periodic intervals, and allowed to dry out before applying more water.

This probably derived from the restraints imposed by hose and sprinkler watering. Unless an army of men could be deployed at night to constantly move hoses and sprinklers from green to green as well as to different areas of greens, this meant leaving them on a few greens all night – or at least for long durations. Thus greens were over-watered, but no hose system could cope with watering 18 greens simultaneously, even if, semi-automatic control measures could be devised. The folly of developing this technique to pop ups is that it needlessly perpetuates a fault.

If, reducing the argument to the absurdities preached only a few years ago, greens were watered with pop ups once a week in one application, the demand on the system to water all greens at once would astronomically increase costs, in terms of much larger reservoirs, pumps and pipe work. Consequently when watering in sequence, assuming that ten minutes a night was the norm we would be watering each green for 70 mins, i.e. the cycle for 18-19 would be in the region

of 20 hours a night and day! When would we play golf?

If the course is split into three or four zones to reduce the nightly watering period to more reasonable levels some greens at any given time would be waterlogged bogs, others drying out and others rock hard and virtually impermeable even with aeration.

The answer is little and often - every night in drought, emulating a good shower i.e. about 200-250 galls per 500 sq. yd. green. Of course, stress symptoms must be noted ('shine' on greens means they have gone too far), but it is vital to use water as an aid to management, starting as late in the season as one dares stopping early (late August) to go into the winter with dry greens. Never use water to make greens soft and holding, to make the greens grow or to make it green. The old motto 'If in doubt don't water' is still a good one, but it is fully accepted that some compromise on appearance is necessary, but the problem with pop ups originally was that it was fatally easy to apply too much without realising it. Once annual meadow grass invades, it needs more water to stop it seeding and dying - so a vicious spiral ensues.

Modern and well designed systems give much more precise and accurate control and distribution, but since we are aiming at wide surrounds and approaches, identical botanically and in all aspects save height of cut to putting surfaces, then we should water surrounds periodically not constantly in relation to their poorer permeability by setting the pop ups to 'full circle' and back with an 80% increase in duration. This counteracts to some extent the effect of wind and other factors, but missed areas must be tackled by hand held hose - it is no answer to step up the time. Fixed arc heads should be changed to adjustable arc heads, especially if the former are 180º.

Individual greens e.g. elevated ones drying out quicker will need more than others (some may need no irrigation at all) but a very rough guide is not to exceed 50 gass/100 sq. yards which on most systems equates with about 6 minutes on the controller or 10 mins full circle. The correct use of water as a servant, not a master, on long term green condition and all year round play cannot be over emphasised.

APPOINTMENTS

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CONSTRUCTION

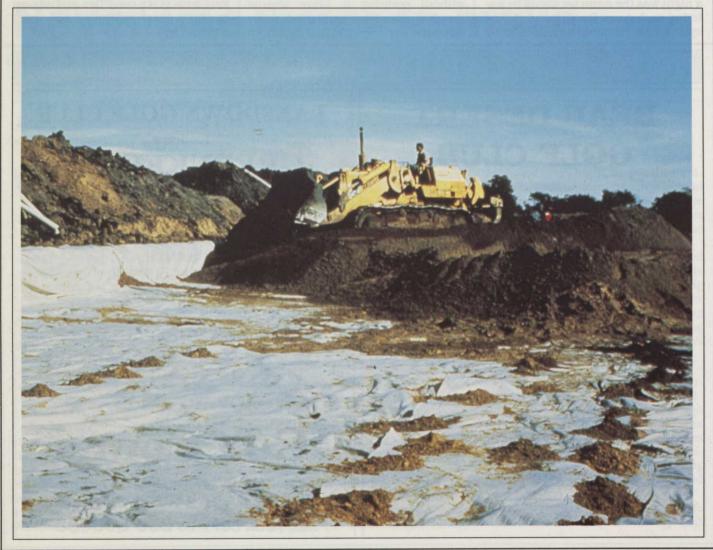
Geotextiles in golf course construction

Sometimes referred to as filter membranes or separation layers, geotextiles have a history of use in the construction industry going back some 20 years. Alan Cudmore manager for Geo Synthetics at Chemie Linz looks at their use on golf courses.

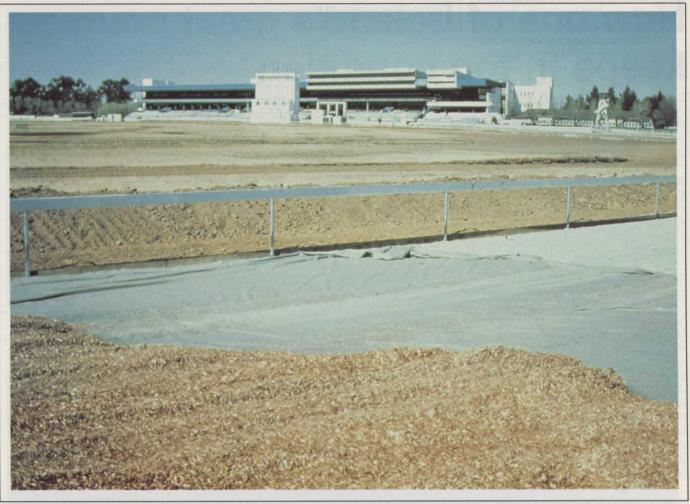
he industry has now defined the functions of geotextiles as separation, filtration, drainage, reinforcement, protection, and sealing. These functions are as important to golf course construction as they are to other forms of ground engineering, and it is not surprising to learn that whereas previously the only use of geotextiles in golf courses has been in separating the sand in bunkers from the ground below, that other and more varied uses are now commonplace.

Taking each function as defined, not only can these products be used in bunkers as a separation membrane, but consideration can be given to this use when constructing an access path or road when there is the need to perhaps separate a granular chip from the sub base in approaches to the Club House, or in car park areas where there is a need to separate the base course from sub base, or the base course from the surface dressing. Such products can be used to separate wood chips from the underlying ground





CONSTRUCTION



Geotextiles being used in the construction of a sports ground

where an all weather walkway is constructed.

The filtration function of geotextiles is well known and is used in conjuction with the separation function to allow rain water to pass easily through the geotextile without harming the separation function.

Used in drainage trenches geotextiles can separate the filter media from the surrounding earth, whilst enabling water to flow in easily without contamination of the filter media. Additionally perforated pipe drainage systems can be wrapped in geotextiles to perform the same function.

Geotextiles manufactured by the needle punching method also have the capacity to drain water within the plane of the material. Thus by installing one of the thicker varieties of this type below the surface of the area to be drained on a crossfall, new concepts of controlled drainage of rainfall can take place.

The reinforcement ability of a geotextile is best defined as placing a blanket below ground level to support material above, whilst separating the different soil layers to stop collapse of the structure. A new concept of interest is the use of these products to provide reinforcement to near vertical earth embankments, by formation of retaining walls, consisting of the existing material within the embankment contained in mattresses of the geotextile. Such embankment can be made aesthetically acceptable by implanting vegetation through the geotextile.

The protection function of the geotextile is best illustrated by its use in conjunction with a geomembrane (impermeable liner) used to contain water in man made lakes. The geotextile prevents puncture of the liner by migrating flints from the ground surrounding the lakes. Another protection function is the use of the geotextile some 100-150 mm below the surface level of grass to enable root growth to penetrate and bind into it. When divots are taken from the grass surface the root growth remains intact, and the grass returns more quickly to the damaged area. Similarly any flints or other rubble migrating from below will be contained below the geotextile.

The function of sealing is to use the

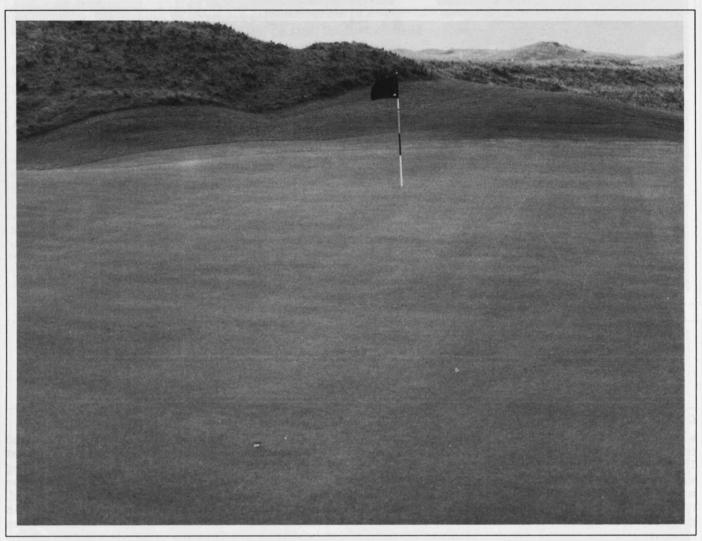
geotextile as a host to a liquid material which hardens when set. The most wide use of this function is in resealing areas of roads and car parks whose surface are badly cracked or spalled. Both concrete or asphalt surfaces can be effectively sealed before the top dressing is applied to prevent the ingress of water. The function is also applicable to sealing flat roots on existing buildings.

Based on these functions many derivative products are now available with such diverse capabilities as protecting bushes and plants from frost, protecting concrete from natural elements whilst setting, stopping weed growth and increasing crop yields. A definitive Design + Practice manual is available to enable designers to select the correct grade of geotextile.

For more information: Alan Cudmore Chemie Linz UK Ltd 12 The Green Richmond Surrey TW9 1PX Tel: 01 948 6966

MANAGEMENT

How one of Ireland's great courses keeps in top condition



hen Sid Arrowsmith took up his appointment as Course Manager at Royal Portrush Golf Club in County Antrim - the only venue outside England ever to have hosted the Open Championship - he had barely five weeks to prepare both the Dunluce and Valley courses for the Club's Centenary week celebrations in the second week of June '88.

The greens and fairways of the Par 72 Dunluce and Par 70 Valley courses where some 100,000 rounds of golf are played each year were all suffering from threatened infestation by perennial ryegrass, the cause of which he puts down to the wind, and to a far lesser degree, birds carrying the previous season's seed from the surrounding agricultural land. His answer to this and to the added problem of the

emergence of annual meadowgrass on some of the greens was to use a predominantly organic spray regime to encourage the thickening out of the finer - fescues and bents - which in some areas were very weak and thin. To clip the greens much finer to discourage the broader leaf grasses and to hand pull clumps of ryegrass from both sandy mix courses.

Given the right conditions, Sid would adhere to a 100% organic regime, but the sandy soil necessitated the use of Nitrogen immediately prior to the Centenary week and in readiness for 4 major tournaments over the next 2 months.

When greenkeeping at Southport he had regularly used Maxicrop foliar sprays and the success there made Maxicrop the automatic choice for Royal Portrush.

Starting in mid-May when the soil had warmed up a little he used a mixture of Maxicrop plus 17% Nitrogen and Maxicrop Mosskiller and turf conditioner (itself with a 3% Nitrogen content) at a rate of 5 litres of each per 227 litres of water every 3 or 4 weeks on the greens and 3 applications of 12 1/2 litres of each per 227 litres of water per hectare on over 200 hectares of fairways.

This same basic programme continued through 'till Christmas although the level of Maxicrop Mosskiller and Conditioner was increased a the expense of the Maxicrop plus 17% Nitrogen.

In terms of nitrogen content, this mixture equates quite closely with that of Maxicrop Supergrass which he also tried and discovered the grass looked even better, which is why, in 1989, he