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APRIL 1992



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GREENKEEPER

International

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COVER PICTURE:

Hardi Ltd. joins the Golden Key Circle: presenting a cheque are Colin Gregory, left and Bob Margree, centre. Receiving it, during the Pesticides Training Course, are George Malcolm, Neil Thomas, David Golding and Jon Allbutt. Details: Page 18.



The BIGGA Turf Management Exhibition and Seminar Programme is now recognised as the industry's most significant indoor event. Contact Debbie Savage on 03473 581 for a BTME 1993 Information Pack and find out how your company can take part.

Greenkeeper Education and Development Fund
Launched by Viscount Whitelaw at BTME 1992, the Fund provides the key to the future for greenkeeper, golf club and game. Individuals and companies can join the Golden Key Circle and Silver Key circle. For details, contact BIGGA on 03473 581.

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Augusta will bring more converts: and more questions

Writing this on a grey wet afternoon in March, I take some comfort in the knowledge that when you read this in early April, swamped in claim and counterclaim from Messrs Major, Kinnock and Ashdown, I shall be taking my annual holiday pilgrimage to Augusta and The Masters. Yes, I can almost hear you saying 'what a tough old life he has'; as you reach for the TV remote control and switch from tiresome action at Big Ben House to the sweet and fluid swing of gentle Ben – action of a decidedly better nature.

The TV cameras will of course be bringing the world's most photographed, feted, televised and talked about golf course smack bang into your sitting room; and whilst it would be a relief to think that the millions of golfers around the country – your members included – will find politics more interesting than pars and putts, the chances are distinctly unlikely. Television will bring still more new converts to the game, will make countless others want to rush off to the first tee at dawn the following day and, if I am any judge of behavioural patterns, will bring about the first rash of ill-considered demands for super-fast greens and highly manicured fairways and tees. "Why can't we have *our* course like Augusta", they will intolerantly howl in unison. "Why doesn't *our* greenkeeper produce putting surfaces like that, why can't we have *our* greens that colour?" The bleating will continue, *ad nauseam*, well into the summer!

As an on-the-spot observer I am not mesmerised by Augusta's spring gown, no matter how low it may be cut. For I know full well that Augusta's swanky style is the result of 51 weeks of preparation in order to bring one week of perfectly manicured perfection. Though greenkeepers will be aware of the sacrifices that must be made, few golfing punters will be even remotely aware – or care – that Augusta's picture postcard good looks are the result of huge budgets, state-of-the-art equipment, large maintenance crews and a positive army of volunteers who help to bring the seven day bonanza to fruition.

Furthermore, you may depend on the TV commentators to bring the most infinitesimal changes in the swing pattern of Joe Blow to your attention whilst totally ignoring to mention the span of time necessary to bring Augusta – or any other championship course for that matter – to peak perfection. Those manicured fairways don't just happen, as all turf professionals know. They are the result of months of planning, brought to a peak at just the right time.

Will our British commentators mention the difference in Georgia's balmy climate with that of, say, northern Britain, where greenkeepers will just be emerging from a spell of near zero growth that has lasted for all of six months? I'll bet a dozen Titleists that our differences don't even get a mention!

So, as the intolerance begins, tell your members they can have the perfection they seek – within the limitations of our climate – at a price. For a start, tell them that the course will



need a budget perhaps ten times its present one, probably with ten times the labour force and with a whole heap of tolerance and understanding, especially over the time span necessary for eliminating the undesirable before the quality can come good. Tell them those imperfections that suddenly seem so magnified are mostly of their own making and that you know how to bring back the quality fescues and bents – but tell them the truth: that perfection isn't cheap, it isn't quick and it isn't easy. Without a very understanding membership and a dedicated turf manager, it probably isn't there!

When the magnolias bloom at Augusta, golf course managers the world over can expect unrealistic demands to erupt from their members

DAVID WHITE

■ Colin Murphy is not one to let a thing like open-heart surgery set him back for too long, or so it would seem from the reports filtering through from South Wales. The heartening news (forgive the pun!) is that Colin has made a fine recovery from his recent ordeal and is now recuperating at home. All of his many friends and colleagues wish him a speedy recovery and return to a full and active life, as do we all at Greenkeeper International.

■ ADAS, the Agricultural Development and Advisory Service, originally set up in 1948 as a free service under the 'wing' of the Ministry of Agriculture, Fisheries and Foods and only over the past five years operating on a fee charging basis, became a fully fledged Government Agency on April 1st 1992. This is the final step toward ADAS operating as a commercial, profit orientated organisation; in the same way as Her Majesty's Stationery Office.

■ David Hemstock, long time advisor for ADAS and their specialist in matter pertinent to golf courses, has left to become an independent consultant on golf course improvement. He will also find time to contribute technical articles for publication in Greenkeeper International, starting with a provocative piece on 'Water Features'. David can be located on 0773 827115.

■ Plans for a major enhancement of golf facilities at St Andrews are set to take a step forward with the application for planning permission for a new driving range on St Andrews links. The development of the range is the latest stage of the extensive Links Development Programme set in motion by St Andrews Links Trust.

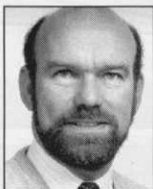
Aimed at providing the "Home of Golf" with facilities on a par with those at top international centres, the programme includes the construction of the new 18-hole course, the Strathtyrum, and the re-designed 9-hole Balgove. All three projects are scheduled to open in 1993. The driving range complex, comprising 12 open and 12 covered bays, and including a reception area, changing rooms and ball wash facilities, will be floodlit.



■ Hortech Ltd has become the first weed control company to be awarded the coveted BS 5750 quality assurance standard. Hortech MD Richard Powell, centre, received the certificate from John Gummer MP, Secretary of State for Agriculture, at a presentation ceremony in London. Mr Gummer said: "This business sets the standard. Increasingly others will have to do as well if they are compete effectively. Well done." Hortech had to show that it has an effective quality control system covering every aspect of its work, from handling customer enquiries to applying herbicides.

Mr Powell places great emphasis on safeguarding the environment when carrying out weed control work, saying "we are moving away from older herbicides toward the new breed of chemicals such as Roundup Pro, which has excellent safety characteristics and is biodegradable". Hortech is

based at Swynnerton in Staffordshire. Also pictured is contracts manager, Peter Jones.



■ West Country Groundcare have appointed Mike Taylor to their team to assist them with preparations for 5750 Approval, and to help set up a number of new projects. Mike Taylor brings a wealth of experience with him, having spent five years as a service engineer with Atco and 15 years with Veals Lawnmowers of Bristol – starting as a fitter at Veals and five years later becoming general manager. Mike leaves on a high note as Veals accounts show a 33% increase in turnover from 1989/90 to 1990/91.



■ John Brooks has joined Hayter Beaver as demonstrations co-ordinator. No newcomer to machinery, John began his working life training for an agricultural engineering apprenticeship. His technical expertise will be invaluable when working with Hayter Beaver's sales team, demonstrating the company's new extended range of professional groundcare equipment to local authorities, golf courses and other commercial end users. Married with two young sons, John lives in Bishops Stortford.



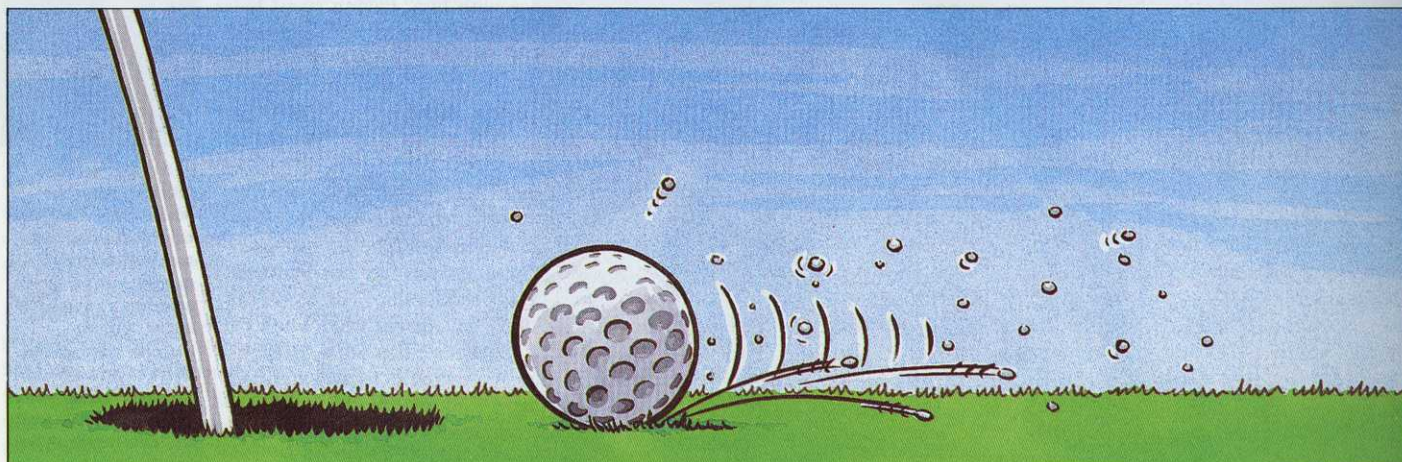
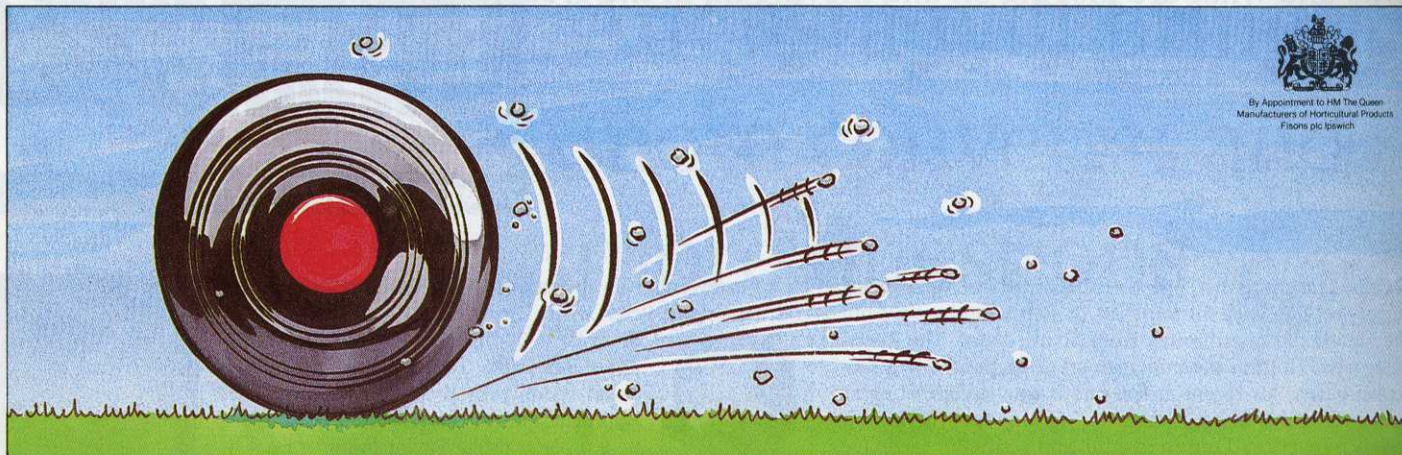
■ Chester firm Bruera Agricultural Services Ltd have been named Huxley Dealer of the Year for their outstanding achievements in 1991. At a special presentation at BTME, Brian Spruce, Bruera's groundcare division manager, was presented with a specially inscribed barometer by Huxley's field sales manager, Roger Barnes.

Bruera became a Huxley dealer early in 1991 and have already supplied the British made Huxley 358 Greensmower to the Runcorn, Hazle Grove, Old Padeswood, Rhyl, Heswall, Betws-y-Coed, Flint and Denbigh Clubs and to the Plassey Golf Course.

■ At a recent meeting held at the second Golf Asia International Golf Show in Singapore, the formation of the Asia Pacific Golf Course Superintendents Association (APGCSA) was tabled, with a committee soon to be formed and the Association formally registered. The golf industry in the Asia Pacific region has developed at a staggering pace over the past few years, resulting in the construction of numerous courses and the trend revealing an urgent need for trained personnel. That there is an evident lack of such personnel has resulted in a need to employ foreigners (mostly American and Australian) at very high costs. One positive measure to overcome this gap is the formation of the new professional body – APGCSA. Early indications suggest that the APGCSA may forge links with BIGGA in the furtherance of education and training. Though in its absolute infancy, the formation of APGCSA looks most promising.



■ Finally, on to a missing face, for which Joel Paul, the talented sculptor and golf course model maker, is offering a reward of £500. This to anyone tracing the theft of an original bronze figure, stolen recently from the smelting/casting works. The piece is instantly recognisable as a likeness of Tony Jacklin. Information to Peckham Police Station, telephone 071 639 4333.



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A chance to win and to help Blind Golf Championships

■ A unique golf team competition in which every Club in Britain can compete against every other Club is at the heart of a bid to raise funds to stage the World Blind Golf Championships in Britain in 1992.

A letter from Peter Alliss, Patron of English Blind Golf, has gone out to every Club secretary. In which he asks the Clubs to take part in the 'Hot Shot Golf Challenge' and for every player who enters to donate one pound to the fund.

The target of the competition is the short par 3 hole in the May 1992 medal round at every Club in Britain. Each participating player has his or her drive at the short par 3 measured from the pin. The distances in inches of the best six drives are totalled, any holes-in-one count minus 24, and that is the Club's recorded score.

The winning teams, both ladies and men's, will win for that Club greenkeeping and landscaping equipment and supplies to the value of £5,000. The individual players will receive inscribed trophies and the prizes will be presented at the World Blind Golf Championships at Patshull Park, Shropshire in August 1992.

■ It was with a smile that I read Seve's comments after scoring a double-bogey seven on the 645 yard tenth in the Turespana Balearic Open in March, critical of the greens: "They were much quicker - I don't know why they cut them so much. You lose your touch and rhythm. I should be leading, but you just have to be patient". It seems that green speed is the one thing that can never be right for everyone and why indeed do 'they' cut them so much? Almost certainly because 'they' are instructed to. Seve later went on to win in a gift-from-heaven play-off!

■ The IOG, which came in for some well deserved criticism following sloppy handling of the press at their last

trade show at Peterborough, have suffered a further set-back with the resignation of Gerald Snook and Frank Scott as organisers of the show, following reported internal conflict over the re-scheduling of the exhibition and some apparent accusations that Scott and Snook had put the institute in a mess over agreements with the East of England Showground owners.

The conflict was sparked off when Scott and Snook made arrangements to move the IOG show forward a week to avoid a clash with the August bank holiday weekend. The revised move to September 8th-10th, though dodging said bank holiday, now means that a part of the showground will also be occupied by a kit-car show.

The IOG are playing the whole matter down, claiming that their HQ staff, though somewhat slimmer in numbers following recent personnel cuts, can handle the bulk of administration for the show, but as has been observed before and will now be watched with even keener interest, there is no substitute for getting professionals to do a professional job.

It must also be said that the previous masterminding of the IOG exhibition by Dianne Mowat, deposed two years ago as the show organiser, is mourned in many circles, for she remains the essential 'missing link' that IOG so desperately need again.



■ A special word of praise for Rhone Poulenc on their initiative in chipping in a massive 10% of their distributor representative financial awards to the worthy charity, Physically Handicapped, Able Bodied (PHAB). Rhone Poulenc have come in for a mite of criticism just recently over the 'worm killing' saga, but on this occasion they may step forward for well deserved accolades.

Just leave the countryside alone, golf course developers are told

The Countryside Commission wants any plans for golf courses in areas designated for their scenic beauty to be bunkered. In a position statement, shortly to be set out as an advisory booklet for planning authorities and golf course developers, the Commission recommends a general presumption against new courses in:

- National parks, including the Broads.
- Areas of outstanding natural beauty,
- Heritage coasts.
- Historic parklands.
- The New Forest.

In other areas the go-ahead should be given only where such a development would contribute to and enhance the character of the landscape. And it should proceed only after a thorough environmental assessment of the likely impact, says the Commission.

Manicured greens, contouring, planting of often alien species, sandy bunkers and the removal of hedge-rows and stone walls can give an 'imposed' look which would conflict

with beautiful landscapes - especially as, on average, an 18 hole golf course spreads over 50 hectares of land. There are fears, too, that such a facility could be the thin end of the wedge, with clubhouses, hotel accommodation, roads and other development following. But the Commission is not against the idea of golf course facilities in less sensitive areas of the countryside.

Preference should be given, it says, to locating them where they can make a positive contribution to the area - for example, within degraded landscapes, such as those affected by mineral workings or where intensive agriculture has already left its mark. The 12 new community forests being planted in different areas of England, or the New National Forest being created in the Midlands, could make suitable locations for new golf courses, it suggests.

But, says the Commission, in all circumstances where golf courses are allowed, consideration must be given to their effect on

the conservation of wildlife and historic features, as well as on local communities. Furthermore, appropriate management of new or retained landscape elements should be a condition of any planning permission, together with arrangements for the provision of public access to the countryside.

The Commission, with the help of consultants, is to publish an advisory booklet on the subject later this year, giving guidance to local authorities and golf course developers on the way in which the principles should be applied.

It will cover matters such as environmental and landscape factors to be taken into account when considering a new course, design guidance for landscape treatment and enhancement, and opportunities for creative conservation, together with guide-lines for future management and after-care.

• Source: "Countryside", newspaper of the Countryside Commission

Drainage

by Dick Nugent,
Dick Nugent
Associates, Illinois,
USA

During a recent tour of British golf courses, I was told, "You Yanks take a well man and make him sick!" That was their picturesque way of saying we use too much irrigation water, make the grass sick, and then we apply pesticides and even more water.

Irrigation has been a favourite topic of the golf course maintenance industry during the last 20 years. Applying water to the golf course is the conspicuous, perceptible part of turf maintenance. But the other side of that coin is drainage — getting water off the golf course. Drainage is the hard job, the thankless job, the job nobody wants to talk about.

Drainage is not only crucial to quality turf maintenance, it also affects the playability of a golf course. A properly designed and installed drainage system keeps the golf course dry and playable, providing more playing time than a non-drained course. A drained course has the added advantage that it can be played more often with carts — no small consideration.

Rx for Turf Health

Ideally, the combination of drainage and irrigation achieve a soil condition agricultural engineers call "field capacity." This is the ideal level of moisture that, when balanced with air, enables aerobic bacteria in the soil to complete the nitrogen life cycle, thereby supplying nutrients to the grass.

Drainage can lower the water table, allowing the top part

of the soil to dry out. This fosters grass root development, especially during the spring when the water table is normally near the soil surface. The deeper roots break up the subsoil and help develop good soil structure. Drained soils also warm more quickly during the spring season, promoting turf growth and speeding winter recovery. Conversely, drained soil is less apt to suffer from freezing damage.

In parts of the United States where soils contain a large amount of salt, sufficient irrigation is needed to flush the salts from the turf root zone. Drainage is especially important in these soils to allow this maintenance practice to occur. Adding fertilisers, which are basically salts, can create a similar situation if inadequate drainage exists.

System Components

There are a variety of drain types available, including tile drains, French drains, and open ditch drains, as well as storm sewer systems.

The least expensive to install is the open ditch drain. This type is frequently used in Great Britain, even at the exclusive Sunningdale Golf Club near London. In the United States, open ditches often are used on land of low value, such as swamps and forests, where more sophisticated drainage systems would not be cost effective.

Open ditches are relatively inexpensive to construct, but they do require long-term maintenance, including the removal of weeds and sediment. They are difficult to mow, and maintaining the slopes without the sides collapsing can



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Shhh! It's a job nobody wants to talk about

be a problem. Also, there is the need to dispose of the excavated soil during construction. Although open ditches are not the optimum drainage solution for a golf course, there are occasions when physical conditions do not provide adequate slope or cover for drain pipes, and an open ditch may be the only reasonable option.

A variation on the open ditch drain is the French drain, consisting of a narrow open ditch drain filled with gravel. A disadvantage is the tendency for the upper portion to become sealed with dust and surface soils, which eventually clog the drain. To alleviate the problem, a geotextile fabric can be used to line the bottom and sides of the trench. When the fabric is in place, the fabric edges are overlapped over the top of the gravel. The fabric holds the gravel in place and, in unstable soils, prevents soil fines from entering and clogging the drain. The top can be cleaned off periodically or simply sealed off with a layer of porous soil or sand. Today, French drains are rarely recommended.

Historically, tile drains were constructed with 4 inch diameter, 12 inch long pieces of concrete or clay tile. Corrugated polyethylene plastic tubing, which is resistant to damage by acid soils and frost, is now a popular substitute for concrete or clay tile. The corrugations strengthen the tubing, which is manufactured in continuous lengths ranging from 500 feet for 2 inch diameter tubing, to 20 feet for 8 inch or larger tubes.

Although tile drains are somewhat more expensive to construct, they provide a system that functions well over the long haul, with minimum maintenance. While it is true that soil fines and sand can enter the tile or tubing, the flow of water should carry the deposits along, preventing clogging of the system.

Although a variety of materials can be used as an "envelope" around sub-surface drains to prevent clogging, the most commonly used is gravel, sized 1/4 inch to 3/8 inch. The envelope material functions as a filter for fine sands and silts from the in-flowing water.

Interceptor Drains

There are occasions when hillside surface water must be dealt with to prevent erosion and subsequent ponding in low areas. Hillside seepage occurs when previous surface soil is underlain with imperious soil that restricts vertical water movement. Hillside seepage also occurs when a water table exists at the soil surface, usually at the intersection of a hill and a flat valley. For example, seepage may occur where an elevated green

meets the surrounding land. By locating a sub-surface interceptor drain uphill from the wet area, water can be intercepted and carried away.

Storm Sewers - A Plus

The best outlet for a quality drainage system is a storm sewer system. While golf course drainage systems often do not tie into storm sewer systems, they should whenever possible. This should be a major consideration for a quality golf course drainage layout.

Storm sewers usually have two types of maintenance access: manholes and catch basins. Manholes should be placed at any point where a drain line changes direction, but no farther than 300 feet apart. Manholes have a covered top and a smooth bottom that matches the flow line of the drainage tile connected to it. The catch basin has an open, grated top to allow drainage to flow into it from the top, as well as from drain tile entering above the bottom of the basin. Since the flow is uninterrupted in a manhole, soil deposits do not accumulate. However, in the catch basin, the space between the tile and the basin bottom can fill up with drainage solids, so it must be cleaned out periodically. For easiest maintenance, it is best to run your drainage to a storm sewer system that features only manholes.

There have been cases where drainage water has been recycled for use in the irrigation system. Pete Dye's design for the Old Marsh Golf Club in Florida is a case in point. There the water is recycled to avoid contaminating the natural ecosystem of the Everglades. The drainage water is collected and taken to sumps, where it is pumped into a storage lake until needed for irrigation.

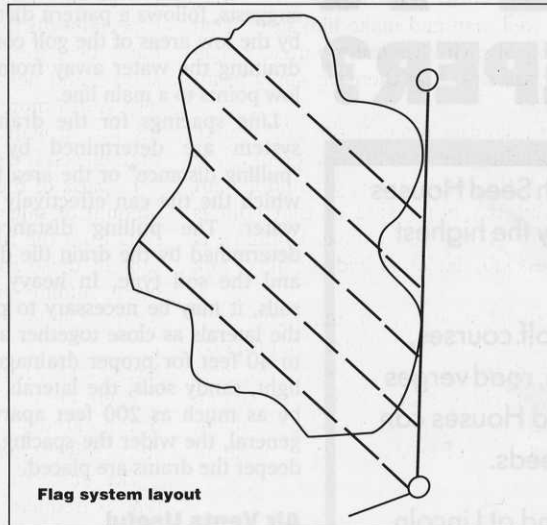
Recycling is an expensive solution, but it is a viable answer. With recycled systems, the more the water is reused, the more concentrated the salts can become. Because of this, the water must occasionally be diluted.

Drainage System Layouts

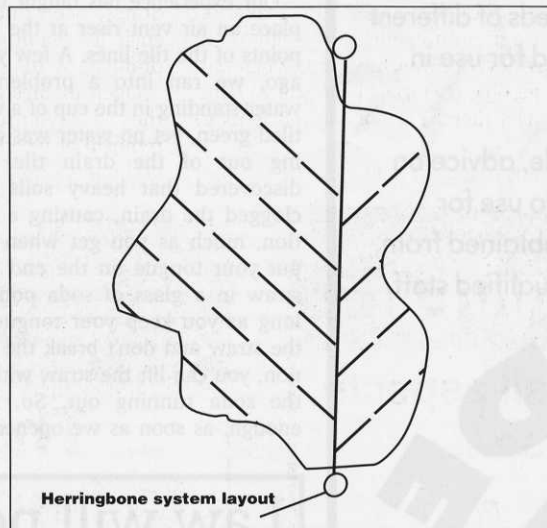
Drainage systems are identified by their layout patterns.

The flag pattern, also known as the parallel system, is used to drain areas that have uniform slopes. A series of sub-branch lines, or laterals, run parallel to each other and drain into a main line. Drainage installers must do a good job of setting the lateral lines to an established pitch that must remain constant for the system to perform properly. Maintaining a constant pitch can be difficult if the terrain is uneven.

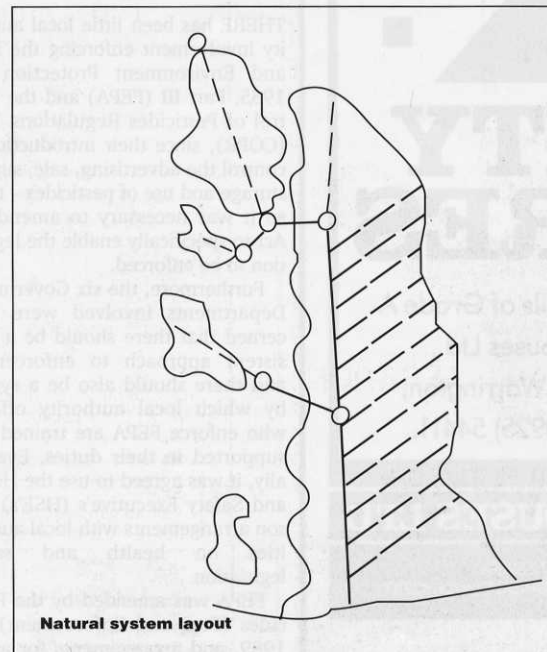
The herringbone system is used to drain swale areas. Water flows in the laterals →



Flag system layout



Herringbone system layout



Natural system layout

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Drainage

→ toward the main line, located in the lowest part of the swale. This system is frequently used because of the ease of its installation.

The natural layout, as its name suggests, follows a pattern dictated by the low areas of the golf course, draining the water away from the low points to a main line.

Line spacings for the drainage system are determined by the "pulling distance" or the area from which the tile can effectively pull water. The pulling distance is determined by the drain tile depth and the soil type. In heavy clay soils, it may be necessary to place the laterals as close together as 30 to 40 feet for proper drainage. In light, sandy soils, the laterals may be as much as 200 feet apart. In general, the wider the spacing, the deeper the drains are placed.

Air Vents Useful

Our experience has taught us to place an air vent riser at the high points of the tile lines. A few years ago, we ran into a problem of water standing in the cup of a well-tiled green, yet no water was coming out of the drain tile. We discovered that heavy soils had clogged the drain, causing a suction, much as you get when you put your tongue on the end of a straw in a glass of soda pop. As long as you keep your tongue on the straw and don't break the suction, you can lift the straw without the soda running out. So, sure enough, as soon as we opened up

the tile at the high point of the green, the water went gushing out of the tile. Since then, we have generally made it a practice to introduce an air vent at the high points of drainage lines.

The air vents accomplish three things. First, they prevent the suction from occurring. Second, they provide convenient places to introduce water into the system if flushing is needed to clear a blocked tile. And finally, the vents introduce air into the tile line, which helps to aerate the soil.

Common Sense and Drainage

Thinking about what it takes to achieve an outstanding and playable golf course, I am reminded of the story about the farmer who, every year, had the most outstanding crops in his area. His neighbours finally asked him to meet with them and share his secret. "Well," he replied, "the way I look at it, there's really not much to farming. It's about 90% drainage and about 10% common sense. If you don't have much common sense, put in more drainage!"

That story applies handily to golf courses. The secret of a great golf course is good turfgrass. One of the secrets for growing good turfgrass is good drainage. So if you want a great golf course, you'd better pay attention to your drainage!

● This article first appeared in the USGA 'Green Section Record' and is reproduced with due acknowledgement and thanks.

Law will now be enforced

THERE has been little local authority involvement enforcing the Food and Environment Protection Act 1985, Part III (FEPA) and the Control of Pesticides Regulations 1986 (COPR), since their introduction to control the advertising, sale, supply, storage and use of pesticides – to do so it was necessary to amend the Act to specifically enable the legislation to be enforced.

Furthermore, the six Government Departments involved were concerned that there should be a consistent approach to enforcement and there should also be a system by which local authority officers who enforce FEPA are trained and supported in their duties. Eventually, it was agreed to use the Health and Safety Executive's (HSE's) liaison arrangements with local authorities on health and safety legislation.

FEPA was amended by the Pesticides (Fees and Enforcement) Act 1989, and arrangements for a sys-

tem of liaison and training were completed with a view to commencing enforcement on 1 April 1992.

Local Authorities will enforce all aspects of COPR, that is, from advertisement to use, on those premises where they now enforce the Health and Safety at Work etc. Act 1974. This includes all golf courses.

HSE Inspectors will continue to enforce all aspects of the pesticide legislation with the exception of advertising. This includes the effect of use on people and the environment in the area of agriculture, forestry, and horticulture, manufacturers premises, timber treatment works, construction sites, local authority premises, private dwellings when pesticides are used as part of a work activity.

A special section has been set up within the Local Authority Unit of HSE to ensure consistent standards of enforcement and to deal with pesticide matters.