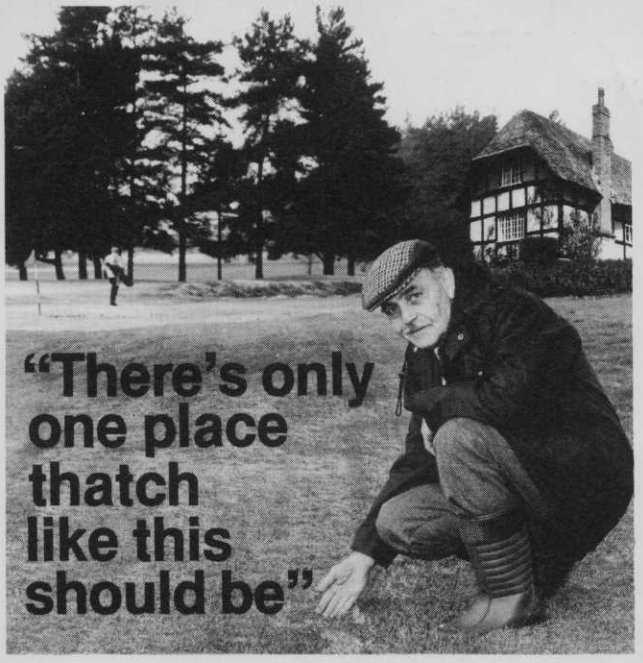


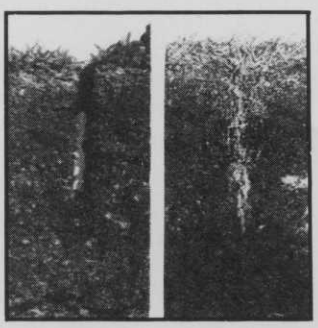
"When you think how weather-tight a thatched roof is, you can see how a build up of thatch will block out air, light and water from reaching the roots. Of course, a little bit of thatch is normal and helps turf to wear better. But, if it builds up too much, you will soon have problems.

"Thatch build-up and soil compaction are the twin problems of any well used sports turf areas. And hollow tine aeration is the answer to both. In fact, I reckon what the Ryan people call Core Cultivation should be a routine part of any turf maintenance programme, not just a problem solver.

"Why do I think Ryan hollow tine aerators are the best? They're exceptionally well made. Tough and reliable.

And they've got a lot of special features, like the Greensaire's 2 inch by 2 inch core pattern. And the unique design which makes each tine go in and out absolutely vertically so that it doesn't damage the top surface like some others can.

"In fact, you should have a look at the whole range of Ryan turf maintenance equipment. It's the best you can buy".



New vigorous growth after hollow tining

The Ryan Range

Aerators

Greensaire 16in
Greensaire 24in with optional Core Processor
Ride-Aire 19in ride-on
Lawnaire 19in
Lawnaire 3ft tractor towed
Tracaire 6ft tractor towed
Renovaire 6ft contouring tractor towed

Scarifiers

Ren-O-Thin 5hp 18in
Ren-O-Thin 7hp 18in
Mataway 10hp 19in self propelled

Turf Cutters

J.R. 12in width
Heavy duty 12 and 16in widths with automatic chop off and turf rolling

RYAN
Turf Care Equipment

Distributed in the UK by
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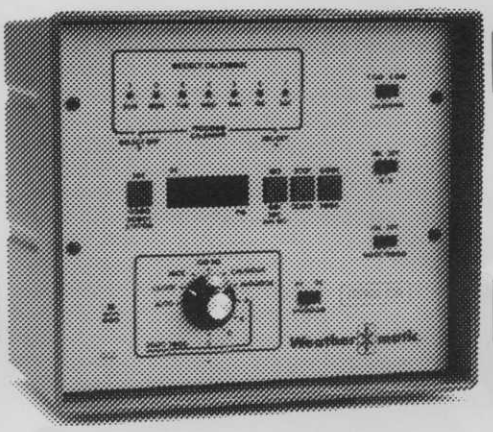

Whether you need a 6, 8, 12, 16 or 24 station irrigation controller, you can't beat the micro-computer Mark Series from Weather-matic. Available with three types of housings, they can fit every application.

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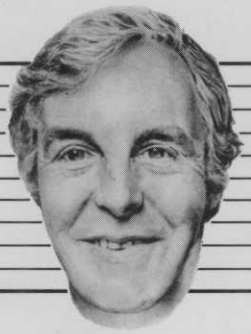
LAWN AND TURF IRRIGATION

Greenside Comment...



Enterprising Developments

This issue of **Golf Greenkeeping** is the first as a completely independent publication for the management and maintenance of golf courses in the United Kingdom. Regular readers will notice several changes in the presentation and layout of the magazine, designed to provide not only up to date information on the latest techniques, but in-depth articles featuring interesting projects, concerned with golf course constructions.

The development of a new municipal course at Oulton Hall at Rothwell near Leeds, this month is an example of the type of projects **Golf Greenkeeping** intends to highlight during the coming months.

The Oulton Hall Golf Course is quite unique in its concept, because the local authority have used a combination of resources; their own parks and recreation facilities, outside advice and most importantly MSC labour. Not only has this ambitious scheme provided people who would otherwise have been unemployed with a job, but because there is an 'end product' for all to see, considerable enthusiasm has been generated among those involved.

Whether one approves of the political aspects of job creation schemes or not, in this instance there is a considerable benefit for everyone. A golf course is under construction within the budget the ratepayers can afford; a worthwhile job has been provided for people who would otherwise spend their time waiting for pay day on the dole; not least the golfers of Leeds will have the pleasure of another fine course.

The driving range which opened shortly after this article was prepared is so popular, customers are queueing up to use the facilities, providing income already to off-set the costs of construction.

There is a desperate shortage of golf courses around our densely populated cities requiring a combination of finance, land, enterprise, drive and enthusiasm, as well as a relaxation of rigid green belt restrictions.

Because of the crippling costs involved in building an eighteen hole golf course, future developments can only take place in one of two ways.

Firstly by municipal authorities who have vast tracts of land, though they may be earmarked for other uses. Secondly by private enterprise, if the planning controllers will accept that golf courses not only provide leisure activities for thousands, but they are conservation areas in themselves.

Collingtree Park, also featured in this issue is a case in point. A total of £50 million has been made available for this enterprising development, most, it must be accepted, will be for the construction of high-class housing, hotels and a private clinic, but there is nothing wrong in building a golf course with a profit motive.

What is certain, the established member-owned clubs, the backbone of golf in this country, will never increase in number.

Next Month:

FRED HAWTREE DEVELOPS THE HUGGING & KISSING SYNDROME
COMMUNICATION SYSTEMS FOR GOLF COURSES
FURTHER DEVELOPMENTS AT DUBAI
THE COURSE FOR THE OPEN CHAMPIONSHIP
PRODUCT REVIEWS

Golf GREENKEEPING
MANAGEMENT AND MAINTENANCE FOR THE GOLF COURSE INDUSTRY

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contents contents contents contents

NEWS ROUND-UP 5,6
ROTHWELL... A NEW 27 HOLE COURSE IN LEEDS 7,8,10,11
NEW £50m GOLF COMPLEX FOR NORTHAMPTON 12
APPOINTMENTS 13
SEVE SCHMITZ VISITS MINNEAPOLIS 14,15
HUGS AND KISSES... GOLF'S BIG LOVE AFFAIR by Fred Hawtree 16,17
TRADE DIRECTORY 18

"From grass to shrubs, from flowers to trees Floranid gave us fast and long lasting results."

David Jones said, "Floranid cut leaching to a minimum so we needed fewer applications. We used it on a wide range of areas including raised shrub and flower beds."

Bill Matthews was looking for strong, even growth sustained throughout the season. "Floranid more than lived up to my expectations. It produced the hard wearing grass that I needed and also gave me vigorous, healthy shrubs with good colour and appearance."

Geoff Sadler considers that he has already saved money. "Our grass has to look good. Floranid gave us good colour and rapid recovery even after hard wear but without any excessive growth. Floranid has certainly worked well for us."

That's what these professionals think of Floranid slow release fertiliser. So whatever your requirements the Floranid range can work for you.

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NEWS ROUND-UP

PEOPLE, PRODUCTS AND DEVELOPMENTS IN THE GOLF COURSE INDUSTRY

Irish Farmer seeks finance for new golf course

A top golf course architect has given the thumbs up to an Irish farmer's plans for developing a new first class 18 hole golf course near Dublin.

Farmer, John Wilkinson wants to turn about 130 acres of farmland just 13 miles north of the city centre into a course to ease massive waiting lists at local clubs.

Keen golfers face a wait of up to 10 years to join one of the other 10 clubs in the Leinster area.

Most clubs are refusing waiting list applications because of the huge backlog among an estimated 50,000 golfers within 25 to 30 miles from the centre of Dublin and John Wilkinson is looking for backers to help him get the project off the ground.

Eddie Hackett, one of Eire's best known golf course designers has drawn up a detailed Feasibility Report and plan for the course.

His proposed course would be in the shape of "an impressive arc" and consist of two loops of nine holes each, starting and finishing at a Club House. The total length would be 6,700 yards, giving a par of 72 (ss 74). There would be four par three holes, four par fives and ten par fours. The eighth hole would be a "fine dog leg line of play" and the long holes would be broken up by shorter ones. Existing trees, hedges, ditches, a stream, a large pool and a river would provide a course of very varied and attractive character.

Mr. Hackett envisages that the course could be constructed and opened within two years. He summarised the excellent potential for the course as follows:

"I must say that a combination of situation, pleasant and varying gradients, adequate acreage, good drainage, magnificently featured land, mixture of terrain... and superb golfing virtues, would all combine to make a golf course here uniquely attractive and memorable".

NEWS 4

New Powered Aerator from Sisis

The new Sisis Hydrocore is a powered aerator developed from the well proven Autocrat, ideal for all fine turf areas.

It is a highly manoeuvrable machine which will turn in its own length. There is also a reverse gear for tight spots and the tines are raised and lowered hydraulically.

With its speed of operation and its 3ft. (91cm) working width, the Hydrocore gives a fast rate of coverage; an average size golf green can be completed in approximately 30 minutes.

Interchangeable hollow coring, slitting and solid tines are available for penetration to 3″ or 4″. Adaptors can be fitted to the tine holder tubes to effectively double the effect of the Hydrocore. By fitting a set of 8 adaptors and 16 tines approx. 150 holes per square metre can be achieved. When hollow coring, a considerable amount of thatch is thus removed as well as the extensive relief of compaction. The tines enter and are withdrawn completely vertically so there is no tearing of the turf and minimal disturbance of the playing surface. Depth of penetration is adjustable. Integral swath boards are fitted to windrow the cores when hollow tining.

NEWS 1

Appointment of Head of Horticulture

NEWS 2

Mr. Tony Bass, has been appointed as Head of Horticulture at the Cambridgeshire College of Agriculture and Horticulture.

Mr. Bass has been at the Farm College in Milton since April 1986 and prior to that was a Lecturer at the Northumberland College of Agriculture for three years.

The newly-formed College is an amalgamation of three centres - the Cambridgeshire Farm College of Milton, its Agricultural Education Centre at Sawtry and the Horticultural Station of the Isle College, Wisbech.

In addition to a range of part-time and short courses, other courses offered by the College include:

National Certificate
of Horticulture
Amenity . Commercial
Interior Landscaping

New Pump from Grundfos

A horizontal single stage Jet Pump, suitable for a wide variety of water supply applications, has been introduced by Grundfos Pumps Ltd.

Designed to cater for shallow well water supply, boosting and sprinkling, the new pump, known as the JP5, is suitable for both continuous and intermittent operation.

Both JP5 and CH pumps can be supplied with a booster set for automatic operation, comprising a diaphragm pressure tank, an adjustable pressure switch, pressure gauge and five-way adaptor.

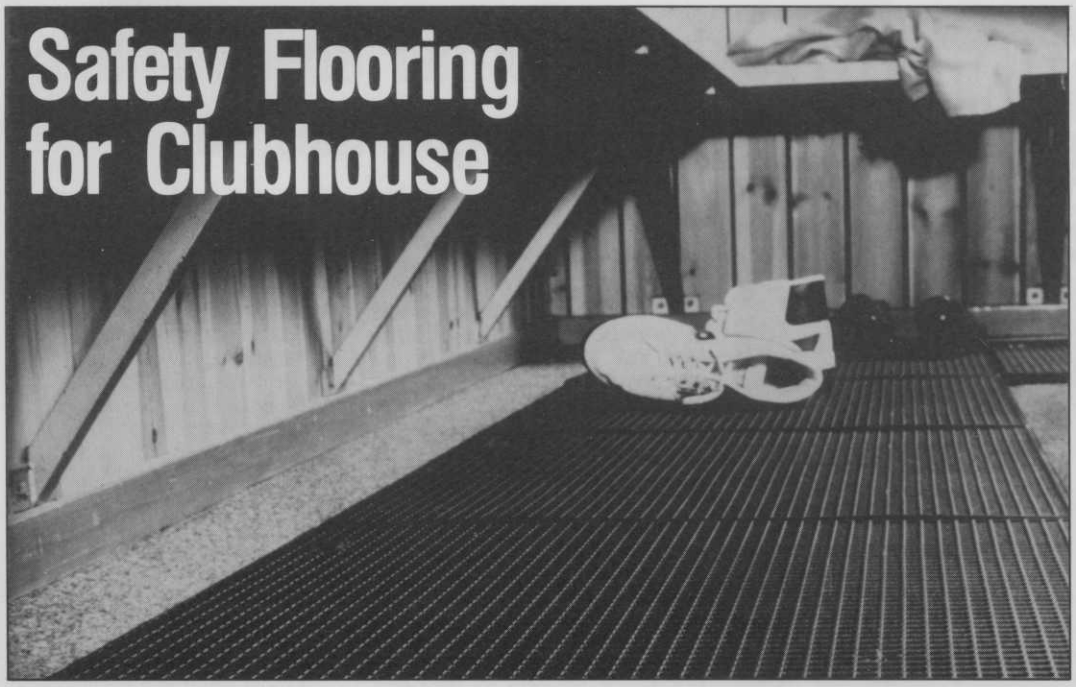
Further information and prices can be obtained from:-

Grundfos Pumps Ltd.,
Grovebury Road,
LEIGHTON BUZZARD,
Beds. LU7 8TL
Tel: (0525) 374876

NEWS 3

Booster Set (centre) and Hydrostat (left)

Safety Flooring for Clubhouse



Increased safety with Perstop floor slats

The new floor slat from Perstop Form, provides the perfect solution for hard, cold and wet floors.

Easy to install, clean and maintenance free, the floor slats are manufactured in a special grade of low density polyethylene, chosen particularly to provide the correct cushioning effect.

Resistant to most chemicals, the slat is hygienic with surface profiles that enable good drainage and have no dirt trays.

NEWS 5

The floor slat reduces the risk of skidding and slipping by keeping the walking surface dry.

Several sections can be linked together to cover large floor areas, without the need for additional parts, and are easily cut to shape to fit awkward corners.

Available in standard brown or beige ex-stock, but with other colours available on request and subject to minimum order quantities, the dimensions of the slats are 600 × 600 × 15mm; the weight is 0.9kg.

Contact: The Editor, Golf Greenkeeping for further details.

Two new Representatives join sisis

Mark Mills, joins as a Sales Demonstrator. He is single and lives in Ashstead in Surrey and will cover the South East of England as Demonstrator/Sales Mark was formerly with Sisis Distributors, T. Parker & Sons Ltd., Surrey.

Tony Cundall, will cover the Greater Manchester, Cheshire and Staffordshire area.

He previously worked on the greens staff at Crewe Golf Club and then became a landscaping contractor. Golf was a major hobby but for the past 6 years all his spare time has been taken up with fund raising as an active committee member of the South Cheshire branch of the Muscular Dystrophy Group.

New Company organisation for Mallard Trucks

Formerly known as David Brown Developments, the company, after major re-organisation has adopted the trading name of Mallard Trucks Ltd. They will continue manufacturing at their Ferry Road, Fiskerton, Lincoln address and David Brown - a well known figure in the industry - will continue his role in product design and development, and carry responsibility for sales and leisure markets.

The re-organisation has meant becoming part of the Wood Group Ltd., a substantial private group of companies with a turnover of some £25m. The group is run by Mr. Sidney Wood who will have a non-executive role as Chairman of Mallard Trucks. Two new Directors have been appointed to the Board of Mallard, Mr. David Kilby - Finance and Mrs. Chris Hewitt - Marketing.

Product developments in the pipeline include a new Mk.5 4-wheel truck - shortly to be released - and a completely new Golf Caddy Car. Both of these will utilise the unique transmission developed by David Brown, which links the latest Ford 4-speed gearbox to a variety of suitable air or water-cooled, petrol and diesel engines, thereby giving the customer an unsurpassed range of power options together with a full 1-ton carrying capacity. Fitted with the Mallard Multilift, all of the trucks in the range can be connected to a wider range of existing turfcare implements and this, without the removal of the 1-ton capacity body.

NEWS 6

New Safety Blade for Rotary Mowers

A revolutionary new blade to replace conventional steel blades in rotary mowers has been developed in Australia by Merlin International, Melbourne, and is being distributed throughout the UK and Eire by Garfitts Ltd. of Sheffield.

The new Merlin blade is manufactured from a rugged polyamide composition "Zytel" developed by DuPont Corporation. Its performance on wet and dry grass equals that of a steel blade, but the well-known dangers inherent in the latter are reduced drastically in the new product.

Cable-cutting, for example, is virtually eliminated with a Merlin blade, which tends to reject the insulated cable rather than tangle with it.

The fear of flying chippings from stone and concrete is all but removed, and in the event of the feet coming into contact with the rotating blade, any injuries will undoubtedly be less than if caused by a comparable steel blade - although strong footwear must always be worn when using a hover mower.

Garfitts of Sheffield, are the leading manufacturers of steel replacement blades for rotary mowers and John and Derek Cooper the joint M.D.'s are enthusiastic about the new Merlin blade.

"Anything that contributes to greater safety in the garden has to be welcomed", says John Cooper, "and I see the Merlin blade as a positive advance in rotary mowing. Garfitts have a strong connection with the mower repair industry throughout the British Isles, and I'm sure we will quickly establish supplies for greenkeepers wishing to replace his present steel blade.

NEWS 7

FOCUS ON ROTHWELL

... JOHN LELEAN REPORTS ON THE BUILDING OF A NEW 27 HOLE GOLF COURSE FOR THE LEEDS CITY COUNCIL.

The City of Leeds, has sixteen golf courses, including five run by the municipal authority. By next year this will increase to seventeen when the new public course at Rothwell is due to open, initially as eighteen holes and later with another loop of nine.

Moortown and Alwoodley, designed by Dr. Alister Mackenzie with Harry Colt are listed in the top fifty for the British Isles. Moor Allerton, Robert Trent Jones's first British course although not regarded as a classic nevertheless is a redoubtable test of golf. Now the Leeds Council are aiming to produce a course of championship standard on the rolling parkland at Oulton Hall, seven miles south of the city centre.

The demand for more golf courses can be seen by the enthusiasm displayed by golfers wanting to play the municipal tracts. Teeing off by the light of car headlights is a common feature at weekends by those using the two courses at Temple Newsam. At Middleton and Gotts Park, nearby cafes open at 5.00 a.m. to provide refreshment, to those fanatics waiting for the pro's shop to open, to book a tee off time.

The private clubs all have full membership lists and at Wetherby where residential development is mushrooming, the pressure is so great even those wanting Monday to Friday golf will be waiting many years before consideration for entry.

Oulton Hall is a listed building, built by Sydney Smirke in the early 19th century. Unfortunately by the time Leeds MDC was able to acquire it, vandalism and the passage of time had brought the building to a dilapidated state. A planning brief for the Hall had been approved, and it was intended to convert the Hall into a hotel and conference centre with associated facilities for golfers.

Such is the state of our society mindless destruction could well have put this superb house beyond the state of repair. For many years the grounds have been used informally by local residents and the pond in particular has attracted interest from coarse anglers.

The feasibility of developing an 18 hole golf course on the Oulton Estate was investigated in 1972 but difficulties with land ownership, tenancies, underground coal mining, and finance, hindered progress. Furthermore it was recognised that acquisition of the Hall grounds was essential to allow development for an 18 hole golf course. The grounds were acquired last year and coupled with a modified financial climate readily available MSC labour, provided the impetus for development to start.

As well as developing 18 and 9 hole golf courses a 16 bay driving range was proposed and farm buildings picked out for conversion into a maintenance depot and irrigation control point., with the possibility of a greenkeeper's cottage. Clubhouse facilities will be sited in the Victorian stable block.

Leeds wanted to be sure that the golf course, would attract a range of golfers from beginners to professionals. With this in mind Dave Thomas Ltd., were engaged in the spring of 1985 to provide the overall design input and occasional site inspection. The day to day design and management of the project, however, has been under the direction of the authority's own Chief Landscape Architect, Mr. John Morgan, who has drawn together expertise from various sources.

Forestry advice was provided by the City Forester, ecological advice has come from the West Yorkshire Ecological information and advisory service. Turfgrass matters were overseen by the experienced parks staff. Water and fishery matters were dealt with the help of the Yorkshire Water Authority, only irrigation design is being sub-contracted to a specialist company.

On the implementation side, the scheme is unusual in that the works have been by a balanced combination of MSC labour, Parks, Landscape and some contract labour.

Construction commenced in the spring of 1985 when an MSC team started preliminary works on site, including fencing and clearing out existing ditches and drainage works. At this time the condition of the existing woodlands was assessed by the City's forester.

During early 1985 Dave Thomas, in conjunction with the authority, provided the sketch layout for an 18 hole course. A detailed planning application based on this plan was submitted, and approved. Subsequently the consultant provided green and typical tee drawings, and a general specification.

Woodland area opened out to take the tee for the 3rd green.

August 1985 saw rapid progress on the course with the hire of a 915 International and a Caterpillar D8 and Box. The major earthworks then began.

Firstly the position of all the greens, tees and dog-legs to fairways were transferred from the plan and positioned exactly on site. This enabled the consultant to check the positions where he had anticipated that they would be, and if not, to slightly amend them as he thought necessary. After final agreement to these positions, they were then surveyed for future reference. For all positions in wooded areas, tree felling works were carried out carefully to remove only the minimum number of trees.

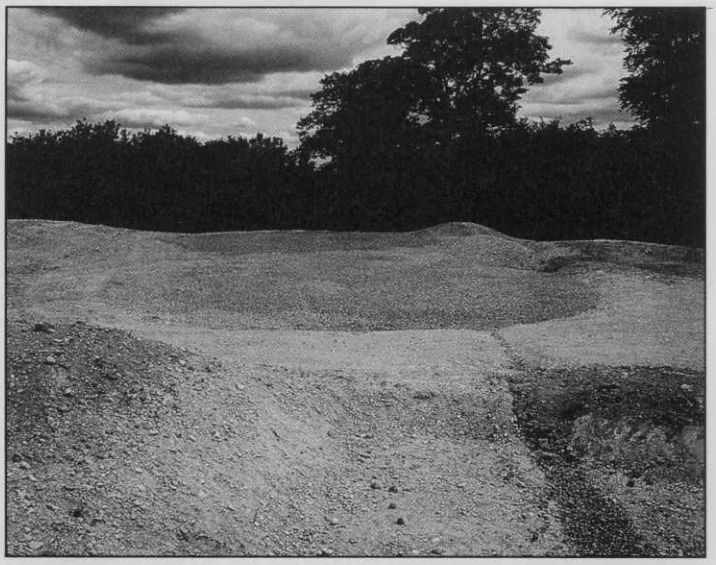
The next stage was to strip and stockpile topsoil from areas requiring regrading. To avoid problems of grass sods in the soil stack, grass areas were either chemically treated with 'Spacor' or rotovated before being stock-piled. Fairways were stripped over a width of approximately 40 metres. Greens for approximately 40 × 40 metres and tees for approximately 70 × 30 metres. This allowed adequate room to shape them and marry grades into the surrounding landform.

Earthworks involved both large and small areas, and different machines were required depending on the scale of the job. The machines ranged from a D8 and Box to a 951 Caterpillar excavator, 915 International excavator, and a JCB.

The greens were constructed by first removing the topsoil. The perimeter of the greens and any bunkers were then marked out on the ground using spray paint and the level profiles were erected. These areas were then shaped using a 951 Caterpillar excavator for the main cut and fill works, and a JCB to creat the initial shape of the bunker, allowing for approximately 400mm of stone, sand and peat on top of the formation level.

On certain greens the D8 and Box (and sometimes the D8 on its own) were used to obtain an initial shape and level to the greens when, for example, they involved cutting into an existing sloping area.

Waterfall built by the M.S.C. labour linking the two lakes.



Early stage of construction to the 2nd green, showing the stone base.

When formation levels were achieved, trenches were dug to accommodate herringbone land drainage, using wavencoil pipes, 80mm diameter for mains, and 60mm diameter for laterals, all wrapped in 'Terram' and covered with 37mm diameter clean hard stone. 'Terram' sheets were then laid over the formation base and the land drains, and then a further 100mm of stone carpet was provided. This was then blinded with 3mm 'Lytag' before receiving a 350mm layer of 4:1 sand and peat by volume, which was mixed on site using a hand rotovator, to provide a seed bed.

Earthworks and grading for tees was either on a cut and fill basis or using surplus materials from other parts of the site. The tee surfaces were constructed flat from side to side and the majority were sloped to drain rearwards from the front edge at between 1 in 100 to 1 in 200. Every effort was made to compact the tees in layers to prevent subsequent settlement. Slopes between individual tees and tee banks were kept to a maximum of 1 in 5 and wherever possible tees were not excessively elevated so that they blend smoothly and naturally into the surroundings.

A 150mm depth of topsoil was placed on all the tees, followed by sharp sand at 2500kg per 100 square metres. The whole tee surface was then rotovated to produce an even mixture of sand and topsoil prior to seeding operations.

On any fairway where major earthworks were proposed, longitudinal level sections were prepared so that cut and fill areas and depths could be identified easily on site. The topsoil was then removed by a D8 and Box and deposited in stock piles as near as possible to where the soil was to be respread. In many instances the works were phased so that the topsoil went straight back onto an adjacent area that had been regraded. Profiles were erected to achieve proposed subsoil levels.

After the subsoil had been graded a 150mm layer of topsoil was spread over the areas and prior to the seeding operations some of the more compacted areas were subsoil ploughed at approximately 1 metre centres in two directions.

The seeding operations on the fairways and around the greens involved breaking up any hard pans by ploughing, disc harrowing dutch harrowing, seeding, chain harrowing and cambridge rolling, followed by stone picking as necessary.

Bunkers were excavated to a depth of approximately 500mm by using both the JCB and the 951. First the JCB marked out the area and generally shaped the bunkers, and then the 955 tracked and married the bunkers into the surrounding ground. The bunkers were constructed to allow for 100 to 140mm of bunker sand on top of a lateral connection to the land drainage system or a soakaway at some distance.

When the fairways and surrounding areas of the greens had been soiled the bunkers were soiled and seeded to the bottom of the inside banks. This was so that the actual shape and size of the bunker could be marked and cut out nearer the time of the opening of the course. This allows a lip of at least 180mm thickness to be left to act as a retaining structure to prevent loss of sand by erosion. When in place, the bunker sand comes up to within 50mm of the top of the lip.

An interesting feature of the course involved the creation of two small lakes, a meandering stream, and the dredging of three existing ponds, one of which was in use by anglers. Great care was taken to safeguard the ecology of the ponds. However, in order that the largest pond could be

Continued on Pages 10 & 11

TECHNICAL INFORMATION

Fairway / Tee Grass Mix:-

12.6 g/m²

40% Chewings Fescue - Tamara
35% Red Fescue - Oriflamme
15% Smooth Stacked Meadow Grass - Baron
10% Browntop - Saboval

Greens Grass Mix:-

35 g/m²

80% Chewings Fescue - Atlanta
20% Browntop Bent - Saboval

Fertiliser Materials for Pre-Sowing:-

75 g/m² 10-15-10 Granular Fertiliser to tees and fairways
70 g/m² 20- 5-10 Granular Fertiliser to Greens

Sand Specification:-

The sand used is uniformly graded sand, free from silt and clay, stones, roots, rubbish and chemical contaminants and has a pH of less than 6.8.

Partical Sizes are as follows:-

Maximum 2% above 2.00 mm diameter
Maximum 5% between 2.00 mm and 1.00 mm diameter
Minimum 80% between 1.00 mm and 0.300 mm diameter
Minimum 45% between 1.00 mm and 0.600 mm diameter
Maximum 15% less than 0.150 mm diameter
Maximum 5% less than 0.075 mm diameter

Gradation Index D90/D10 = less than 5

Salinity - The sand has an electrical conductivity of less than 2 m/mhos per cm at 25 degrees Celsius.

Peat Specification:-

Finely textured (preferably milled and sieved) peat having a pH of 5.5 to 6.5.

Trees Planted:-

Trees for the Main Woodland Area:

Sweet Chestnut . English Oak . Sessile Oak . Beech
Sycamore . Larch . Scots Pine . Austrian Pine

Trees for Large Groups:

Lime . Hornbeam . Field Maple
Norway Maple . Sweet Chestnut

Trees for Small Group and Individuals:

Hornbeam . Cherry . Lime (Large Leaf)
Chestnut (Baumanii) . Field Maple

The shrubs to be used as an understorey and fringe planting amongst the groups and also in the existing woodlands where appropriate, and will include:

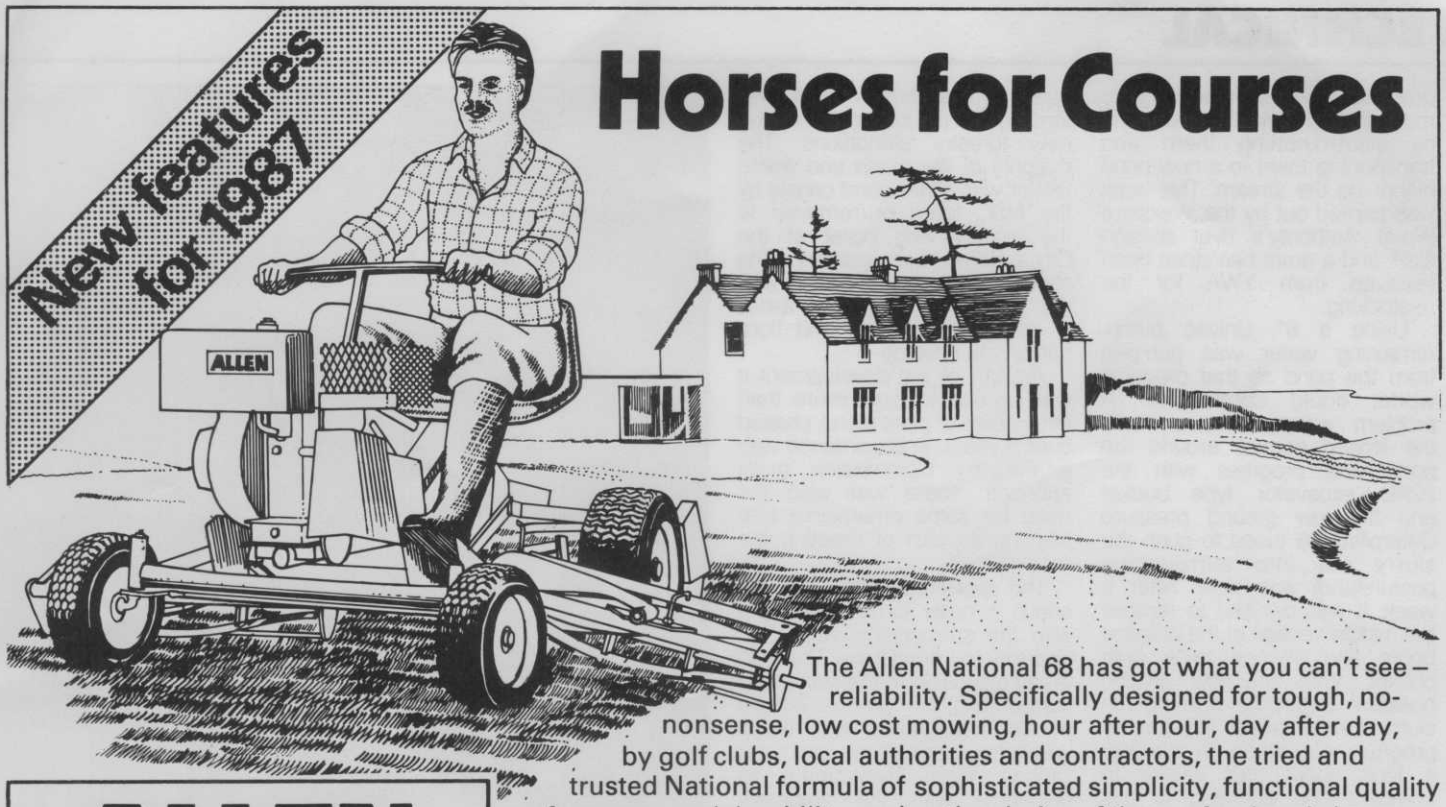
Hazel . American Elder . Hawthorn
Guelder Rose . Snowberry

Equipment used for Construction:-

Caterpillar D8 and Scraper Box	-	Topsoil strip, regrading sub layer, topsoil spread
Caterpillar D8 and Ripper	-	Relieving compaction
Caterpillar 951C with 4 in 1 bucket	-	Final grading and formation works
JCB 4×4 Turbo Extradig	-	Digging drain trenches, initial work to bunker, etc.
915 International Harvester with 4 in 1 bucket	-	Final grading and formation works
Caterpillar D5 LGP Bulldozer	-	Cleaning out lakes
22RB Dragline	-	Cleaning out lakes, formation of new lakes
Moxy D16B Dumptruck	-	Moving slurry from lake
1390 David Brown Agricultural Tractors and attachments including sub soiler, plough disc, dutch and chain harrows and Cambridge Roller	-	Working up prior to seeding Preparation and seeding works
Caterpillar 215B Hydraulic Excavator	-	Placing sand and peat on greens
Dumpers, Rollers, etc.	-	Miscellaneous site works

Horses for Courses

New features for 1987



The Allen National 68 has got what you can't see – reliability. Specifically designed for tough, no-nonsense, low cost mowing, hour after hour, day after day, by golf clubs, local authorities and contractors, the tried and trusted National formula of sophisticated simplicity, functional quality performance and durability, makes the choice of the professional clear – Allen National

Send today for full specification and nearest stockist.

- ☆ 8hp I/C Briggs & Stratton or Honda engine
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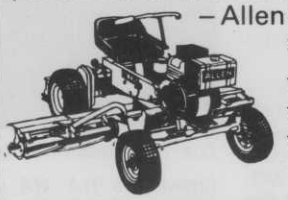

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dredged, it was necessary to move the fish, and this was done by electro-netting them and transporting them to a new pond higher up the stream. This work was carried out by the Yorkshire Water Authority's river division staff, and a grant has since been received from YWA for the re-stocking.

Using a 6" Univac pump, remaining water was pumped from the pond so that dredging works could commence. A problem arose, however, with the limited access around the pond and progress with the 22RB + excavator type bucket and the low ground pressure Caterpillar D5 (used to push the slurry out into surrounding pastureland) was slow. After a week, it was decided to remove the middle section of the dragline boom and change to a grab bucket. With the low ground pressure Caterpillar pushing the slurry further afield satisfactory progress was made. In this way it took about four weeks to complete the dredging to this pond and two and a half to clear the two other smaller ponds.

In line with the City Foresters recommendations, a management programme of selective thinning, surgery and replanting began in late 1985. A great number of the trees felled were cut up on site, using a diesel powered saw generator and re-used for the timber protective fencing on the perimeter of the new forestry plantations. The majority of the brash and waste timber was either burnt on site by the MSC team or removed to the woodburning boiler at the City's horticultural nursery. The remaining brash and timber was left within the woodland areas to encourage wildlife and flora habitats to develop.

As part of the development it was agreed to plant more than thirty acres of plantations, phased over 3 years, in accordance with a Forestry Commission grant approval. There was also the need for some ornamental tree planting as part of creating the course itself.

The species planted are indigenous in order to be compatible with the surrounding vegetation and the soil conditions. The tree areas alongside the fairways and surrounding the greens will be mainly broadleaves, with shrub understorey and places, and sizes ranges from transplants to standards with the emphasis on feathered whips. Protection against vermin involves fencing to large blocks and rabbit collars to individual trees.

The layout incorporates a number of interesting features. These include: several greens and tees cut into existing woodland; a meandering stream with a timber ha-ha across one of the

The 15th green has been set into a former quarry after landscaping.

(inset) *The 'HA - HA' under construction approaching the 4th green. Spring w been tapped to provide a constant flow to the lake over a gravel bottom.*