

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 green-keeper'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 x 40 metres

and tees for approximately 70 x 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 create 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

TECHNICAL INFORMATION

Fairway / Tee Grass Mix:-

12.6 g/m ²	40% Chewings Fescue - Tamara
	35% Red Fescue - Oriflamme
	15% Smooth Stacked Meadow Grass - Baron
	10% Browntop - Saboval

Greens Grass Mix:-

35 g/m ²	80% Chewings Fescue - Atlanta
	20% Browntop Bent - Saboval

Fertiliser Materials for Pre-Sowing:-

75 g/m ²	10-15-10 Granular Fertiliser to tees and fairways
70 g/m ²	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 (Baumani)	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 x 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

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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 water has been tapped to provide a constant flow to the lake over a gravel bottom.

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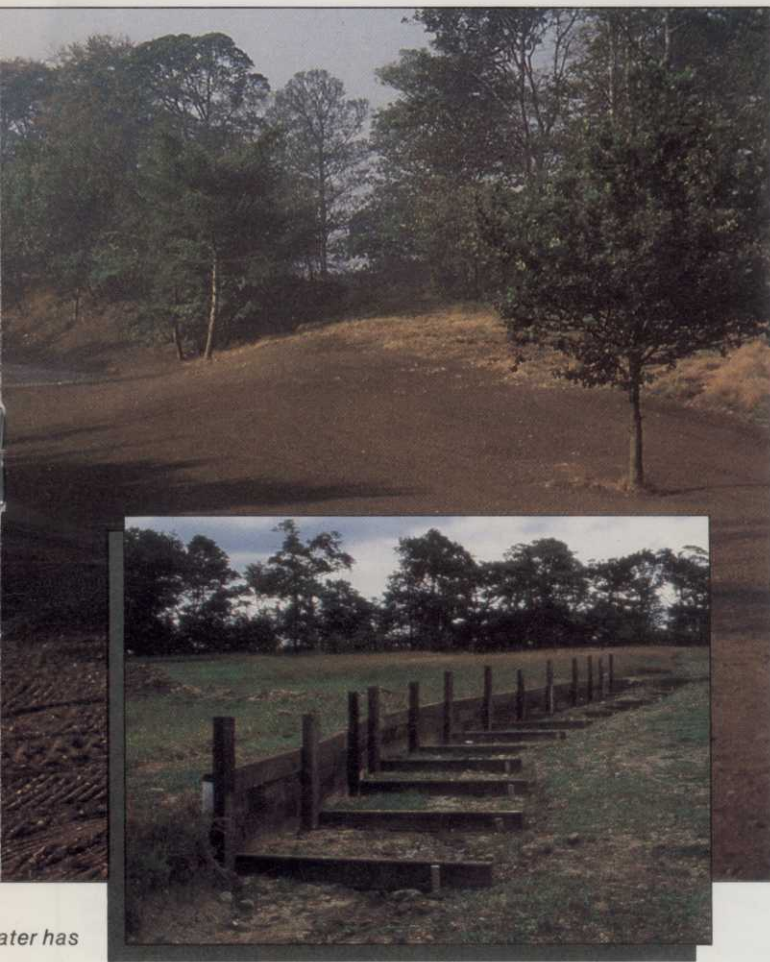
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fairways; a timber bridge and rock waterfall between the 2 new lakes; and a small narrow green in a former quarry.

An aspect of the development of this championship style golf course which may be considered by some to be controversial was the extensive use of MSC labour. In the event this has worked well, and is worthy of note.

The vast majority of MSC work has been in connection with general site clearance and in providing a land drainage system to the whole site. This has involved establishing mains, and then laterals where site conditions were found to be poorly drained, apart from the herringbone system in the greens.

The MSC team have also been involved in the work to the existing woodlands and in afforestation, including clearing and burning brash and waste timber and removing tree roots from site. They have erected all the protective timber fencing and planted and maintained forestry transplant areas, as well as the half-standard planting in the critical areas of the course.

Other works carried out by the MSC team include: erection of security fencing and gates around the perimeter of the site and temporary fencing around the decaying structure of Oulton Hall; stone picking using agricultural equipment and pond dredging.

CONCLUSION:

This article illustrates the way, in difficult economic times, how construction of a golf course can become financially feasible when the approach is toward a linked Community Programme and a Local Authority Scheme with further support from Forestry Commission and Fisheries grants.

To work on such a major recreational scheme is a real training opportunity for those seeking employment through MSC.

Lastly, the method of working illustrates how a local authority can maximise the use of its own resources and use specialist consultants and contractors in a most cost-effective way.

The Editor is most grateful to John Morgan, The Chief Landscape Architect to Leeds City Council who has tackled this enterprising project with a great deal of enthusiasm, and injected a similar feeling among those working with him.

The information contained in this article has been obtained from a paper prepared by John Morgan for a forthcoming presentation.

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