

In our April issue we reported how the farm and parkland surrounding Ramside Hall Hotel near Durham was being turned into a golf complex with course manager Roger Shaw coordinating the project. Because a greenkeeper was playing such a pivotal role and because it sounded such an exciting project, we've decided to follow it all the way through with regular updates from now until its planned opening in spring '96.

The new 27-hole golf course being built at Ramside Hall Hotel is being built by "the project management method". This is a fancy way of saying that the developer - Michael Adamson in this case - pays for each aspect of the construction work directly instead of paying through the main contractor.

But the key to using the project management method successfully is picking the right managers.

Mr Adamson and course manager Roger Shaw, who has been in charge of this project from day one, have gone for Ian Martin and Bob Hornegold, who have both been working in the industry for more than 20 years.

Work started at Ramside Hall in early March and, as we went to press, Ian Martin told us they had constructed 17 greens, 16 tee

complexes, seven lakes (ranging in size from 500 to almost 8000m sq), and 55 bunkers (greenside and fairway).

To have got these features 'constructed' basically means they are shaped up and ready for a herringbone drainage system to be installed prior to placement of drainage carpet, blinding layer and rootzone.

Once the green has been approved by the architect, Jonathan Gaunt, the drainage carpet can be spread (between 150mm and 200mm depth, 19-14mm whinstone aggregate supplied by Hargreaves) and blinded off with grit (50-75mm depth, 3-6mm whinstone aggregate, again supplied by Hargreaves). Tees will not be having a drainage carpet but will still have a herringbone drainage system and 150mm depth of rootzone.

The drainage of greens and tees is carried out by mini-trencher and linked into the fairway drainage system on the approach. MJ Abbott are the con-

Ramside Hall: an update

tractors for this major scheme which involves the installation of over 50,000m of pipework, and they have been on site since mid-March. Nine fairways have now been drained (including bunkers) ready for mole-ploughing, so cultivation works have begun over the top - two passes of the shakaerator to relieve compaction, encourage vertical water percolation and aerate the soil, followed by power harrowing and stone picking/burying, where necessary.

The drain game

Robert Donald of MJ Abbott explains what he did at Ramside Hall:

"Standing side by side with course manager Roger Shaw and looking over what was to be the 5th fairway on a cold and horribly wet October morning, I first realised the importance that the drainage system would play in the success of this venture. The client, whom I had met earlier, had given me a verbal brief: "Robert," he said, "I want the water to flee off the land!" Here I was ankle deep in an emulsion of clay with the task set to produce a drainage proposal that suited the needs of the site and that inevitably was within the client's budget.

Consideration of the soil type indigenous to the area was a key factor in the design of the drainage system, the low permeability of the clayey subsoil led to winter waterlogging of the subsoil layer and rapid surface runoff during rain. The topsoil, however, was initially good over most of the site and consequently a great deal of emphasis was put on this fact. There was to be no contamination of the topsoil with the clay subsoil.

Another important feature of the golf course was the large and frequent areas of water in the form of lakes with occasional streams between them. Lakes only look attractive when they are full of water, however these features were also to supply irrigation to greens, tees and approaches over 27 holes. Careful liaison with the course architect, Jonathan Gaunt, ensured that the water, once removed from the land, was stored in a manner that enhanced the general aspect of the course.

The design finally proposed

and accepted consisted of an intensive piped drainage system that incorporated a network of rigid twinwall pipework between the lakes. The fairway drainage was typically 60mm laterals at 10m spacings connecting into 100mm mains. The lateral spacings were reduced in areas requiring intensification. The pipe depth is another critical factor, too deep and the cost of stone fill makes the job expensive, too shallow and the effectiveness of the drain diminishes as the hydraulic conductivity is reduced. The final depths depended on the contours of the land but could be generalised by laterals at 650mm and mains at 900mm deep. A very suitable carboniferous limestone quarried locally was used as the permeable backfill medium, 20mm single size to within 150mm of the surface and 5mm grit as a blinding layer.

The installation of the coil pipework - some 40km! - was facilitated using a 180hp continuous chain trenching machine, especially equipped for golf courses with low ground pressure tracks and a spoil conveyor, the digging boom depth is automatically controlled via a series of rams responding to a laser grading device which maintains pipe falls regardless of surface undulations. The pipe is fed into the trench as it is excavated and immediately covered with stone which is discharged from a gravel cart running parallel to the trenching machine. The spoil generated is loaded directly onto a dumper thus preventing topsoil contamination.

All the greens, tees and bunkers were connected to the fairway mains using a mini excavator, this method coping well with the inherent mounding associated with such features. Following pipe laying, the area of the fairways were mole ploughed prior to final cultivations in order to assist water movement through subsoil whilst the pipe drains were "bedding in".

To close a course for any reason is undesirable, but to close because of poor drainage is intolerable as it can lead to huge losses in revenue. Addressing the drainage question in the early stages of planning will reap benefits many years after the initial cost of installation has been forgotten."

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