

# FLAGSHIP MILL

## Howie Forest Products' new sawmill line began production in December.

Howie Forest Products of Dalbeattie in south west Scotland now operate the largest sawmill in the country. Their latest £15 million investment is now fully in place, and the first logs passed along the new line last month. It should enable the company's turnover to double from £20 million to £40 million over the next three years. The new mill will replace an existing facility on the site, and it safeguards the jobs of the mill's 120 employees.

The mill produces sawn timber for the construction and building industry, up to C16 grade, as well as timber for the manufacture of pallets, packaging and fencing products. Anticipated output of the new facility is 285,000 cubic metres of sawn timber from every 500,000 tonnes of logs.

The new sawmill will ultimately be capable of processing over a

million tonnes of logs a year on two shifts, an ambition owner and chairman Robin Howie would like to see fulfilled by the end of the decade. "The new mill is typical of a number of major European plants constructed in the last five years," he said. "This investment ensures the company's competitiveness for the next 20 years."

The sawmilling equipment in the new facility has been supplied by Linck of Germany, while the log handling and sorting equipment comes from Springer of Austria. The two companies are accustomed to working in collaboration. At the time of FMJ's visit their engineers were still on site, monitoring the operation of the new mill and ironing out any teething troubles.

The total length of the new line is 350 metres. Starting point is the new laser scanner. Costing



Peter Ross (right), project manager for the new mill, monitoring throughput.

£100,000, this uses eight scanners to measure 360 points round the circumference of each log every ten centimetres. Accuracy is such that 98% repeatability is achieved, which means that 98% of the logs passing through the scanner would be deposited in the same bin (there are 52 of them) if passed through a second time.

The scanner is able to distinguish between red, green and reject logs, which are set aside to be collected by the supplier if desired. However

the percentage is much lower than before, having fallen from 4% to just 1%. The scanner is not tempted to err on the side of caution, and it doesn't get tired on Fridays, fall out with the wife or moan about the weather! "We've proved that we can accept slightly redder logs than we thought," said Managing Director Hamish Macleod. "We've taken out the human element, and the human eye can exaggerate things." He added that it was not in Howies' interest to reject any logs.



(Far left) Logs entering the log line. Next stop will be the new scanner.

(Left) Managing Director Hamish Macleod in the saw room.



Logs being selected, scanned and sorted on the log line. The new scanners are housed in the green hut.

This only wastes time and money for all concerned.

A record is kept of every lorry load passing through the mill, and each and every log's measurements are recorded. Howies pay a number of suppliers on volume with the new system, although every load passes over the weighbridge, and hauliers are paid by weight. This approach also gives a match for every load coming in, enhancing the integrity of the system. A self billing invoice is produced by Howies once the load has passed through the scanner and been measured.

A high proportion of the logs come from the Forestry Commission (Howies only handle FSC certified logs) and the FC are able to access records of all loads from their own computers. They can see which logs were green, red, or rejected, their length, volume and degree of sweep. The logs are automatically deposited in the correct bin according to their length and diameter.

Using this system it is possible to spot problems and rectify them at an early stage. For instance, if a harvesting head is producing logs of the wrong length, it can be identified and recalibrated at once.

Integrity of the system is guaranteed by a checksum. This is generated automatically by the computer, and is based on data pertaining to the load. This cannot be overridden by the computer operator.

Logs pass through the mill in batches, so the line can run continuously on a given size, using a particular cutting pattern. This has many advantages and simplifies the handling of the sawn timber at the end of the process. Normally the mill operates on a two week cycle of diameter / length combinations. Favoured cutting patterns can be tweaked according to demand.



*(Left) General view of part of the opening section of the line. (Top) The first thing that happens to a log as it enters the mill is that it is turned the right way up to maximise recovery. (Above) After the canting process, the log sets off towards the profiler.*

The first thing that happens to a log as it enters the mill is that it is turned so as to be the right way up to maximise recovery. The mill is a straight line with no edgers, but the system is able to work out where to position the cuts to maximise the amount of board which can be recovered from the cants along the side of the log. The cut taken from the centre of the log will not vary.

The system is also able to cut in a curve, where there is slight sweep, rather than cutting across the grain. Apparently if a log is cut along its natural curvature, it will straighten out as it dries. This steals an extra half millimetre or so on the sweep

to maximise the output from the log.

The more sophisticated aspects of the line are not confined to cutting procedures alone. Energy usage of all the equipment is closely monitored, and there are six panel rooms housing frequency converters and inverters along the line. These control and adjust line speed to optimise energy consumption. For instance throughput will be reduced as blades become blunt, which means they work more efficiently and are less prone to damage. The overall approach means that the machinery takes only what energy it needs at any point in time,

and the total energy requirement per cubic metre is far lower than in the other mills still on the site.

Howies handle exclusively spruce logs which come from forests in Galloway, Dumfriesshire, Argyll, the Scottish Borders, Cumbria and Northumberland. The new investment will enable their throughput to increase to 380,000 cubic metres in 2007, from 280,000 in 2006. The plan is to increase it to 500,000 cubic metres over the next three years. To go beyond 500,000 cubic metres would require additional kilning capacity. Of course, sales have to grow alongside throughput.



*(Left) One of six panel rooms along the line, which ensure energy consumption is kept to a minimum. (Right) Operator monitoring the timber as it enters the sorter.*