

Managing and milling: A good combination

Sawmills Devon processes 1,000 cubic metres of timber a year in a two-acre yard near Dunsford (Exeter) on the eastern edge of Dartmoor. The locally sourced roundwood timbers feeding this busy mill come either from two woodlands managed for clients by mill owner Mike Gardner or from stocks bought in from local harvesting companies. Carlyne Locher visited the mill to find out more.



Far left: Mike Gardner.

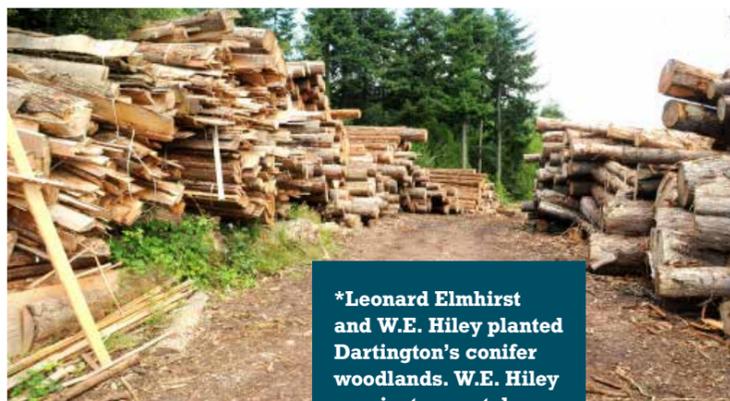
Left top: Wide view of the second smaller purpose-built, timber-framed, open-sided shed adjacent to the machine workshop. This is where Liam will finish an order of plaster lathes, a new market Mike has developed, and Greg will put the finishing touches to an oversized picnic bench.

Left: The Manitou telehandler MLT627 Turbo and JCB 410 yard machines. With the loading shovel attachment the telehandler moves sawdust and stones. With loading forks, it moves timber.

OFFERING woodland management services is advantageous for a sawmill owner. Mike says, "Forestry management forms a small part of my work. I manage 400 acres of woodlands: 100 acres for our neighbours at Idestone Estate and 300 acres at the Dartington Estate, an educational charity in Totnes*. Dartington's stock is mostly Douglas fir, Western red cedar and Western hemlock (sold in the round), with nice big stands of Coast redwood (regenerated by coppicing), Japanese larch and mixed hardwoods. They have an irregular forest: small stands of mixed ages, tending towards continuous cover forestry."

Idestone Estate's mainly broadleaf woods are literally across the road from Mike's mill yard. "We are gradually converting them by group and individual selection forestry, with small clumps of trees being planted in adjacent fields (5,500 last winter) to extend the broadleaf element. Each winter we carry out small amounts of felling, leaving trees at stump or ride side until we need them later in the year. Having written their Woodland Management Plan, management now is me with a spray can, going for walk at dawn with the dog and having a ten-minute talk with the owner as required.

"Sawmills Devon has an in-house contracting team, meaning that the estates can get a better return from their woodland.



***Leonard Elmhirst and W.E. Hiley planted Dartington's conifer woodlands. W.E. Hiley was instrumental in the development of post-war forestry throughout the 1920s, '30s, WW2 and into the '60s. Information gathered from experimental conifer plantings at Dartington was fed back to government and informed national forestry policy.**

Two-hectare log store under electricity pylons. Small oak thinnings bought from Tilhill/FC.

Not spending the whole time inducting contractors, or writing out contracts, reduces costs massively and makes management affordable. In a sense, it works like an 'old school' estate sawmill. It is great to have both of these estates to draw from."

Originally from the South West, Mike (now 50) studied Ecology (Honours in forestry) at Edinburgh University in

the late 1980s. "There were no paying jobs in ecology back then. On graduation, I knew I didn't want to work with coniferous forestry

in the uplands. I realised that there was an under-utilised native broadleaf woodland resource and ended up coppicing and making charcoal in the Lake District. Turning broadleaf timber into a high-value product paid for the management of the woods when you had the markets."

Moving to southern Scotland to work with a timber framer and to run a

carpentry business, Mike then returned to southern England, moving around, timber framing and teaching woodland skills.

Wanting to settle, he says, "I ended up buying this field in 2002."

Building his own timber-frame home (and chicken coop!) on this site, Mike started a small woodyard to support the timber-framing business. "I started sawmilling using a mobile Lucas Mill circular saw. We bought timber locally, sawing beams and building timbers for our own framing projects and to sell to order. We hired larger mobile bandsaws to cut bespoke orders of cladding where the wide kerf of the Lucas Mill was too inefficient. We were building barns, homes, extensions, barn conversions (and an outside classroom for the local primary school) and selling building timbers to others. In 2014, realising

I was competing against friends and acquaintances on contracts for the building industry and dealing increasingly with cut-throat main contractors, I gave up timber framing to concentrate on sawmilling and forestry."

The Lucas Mill was accurate but struggled to keep up with increasing demand. It was replaced four years ago with the Mebor HTZ1200 Superprofi bandsaw, which was found through an advert in *Forestry Journal*, and which was able to cut logs up to 1.2 metres in diameter. The purchase was part-funded (40%) by the European Development Fund.

"Funding ends up more as an interest-free business loan to create work. Employing

someone for five years, you have paid back the funding given in national insurance and income tax. It's a good thing really. The reason we do not have a better processing industry is (a) a lack of space, land, affordable rents and business rates, and (b) a lack of hard-working rural employment, often linked to a lack of affordable rural housing."

Of Sawmills Devon's ten multi-skilled staff, two live in Exeter, the rest in large mobile homes (or similar) on various pieces of land (some private and some council-run) locally. Either direct employees or self-employed personnel, they work part-time or full-time, depending on their skill set.

The in-house forestry team comprise climber Will Mcallister, Ross Broadhead and Josh Carter, with Adam Rees and



The Mebor HTZ1200 SuperProfi bandsaw's 24-foot log deck. Cutting Western red cedar for cladding, coming off with a waney edge (bark left on). All timber is manually loaded and manually removed.

Mebor outfeed, Western red cedar cladding with a waney edge. Mike is investing in an extension to the Mebor's outfeed system to mechanically separate the sawn timbers.

SAWMILLING

Simon Higgins coming in two days a week. Machine operator Ross and chokerman Josh (being trained up in felling big hardwoods) are the harvesting team.

In mid-summer, climber Will is usually found high-pruning Douglas fir and oak two days a week. Today, he is sorting air-dried, joinery-grade yard timbers and making deliveries. Mike says, "We really only climb in the forest now, dismantling before felling for timber value reasons or if we need a winch rope in the tree to have it fall in the right direction. We do climb middle-aged, high-quality timber oaks, pruning and deadwooding to increase the timber's quality in 50 years' time. Costing between £10 and £30 a tree, I have convinced the owners that it is worth it. As sawyers, the lack of past pruning in what we mill is always depressing."

Having moved timbers to feed the mill this morning – "at the moment everyone wants building timbers" – Ross and Josh are currently extracting oak thinnings in Idestone's woods using Sawmills Devon's new Valtra forestry tractor, with roof-mounted crane and three-point linkage PTO-driven radio-controlled 8.5 tonne Igländ winch. The tractor, bought from Jas P Wilson, was part-funded by a LEADER+ grant from the European Agricultural Fund for Rural Development. "Because we had a grant and with firewood prices being so high, we can now afford to winch these broadleaf thinnings – some cut two years ago – out from the bottom of these steep woodlands. Firewood pays for the thinning, leaving behind high-quality oak sawlogs (clean and straight) that now have plenty of room to grow."

The winched timbers are forwarded out to Sawmills Devon's two-hectare log store, one of five offsite storage areas, currently accommodating 500 cubic metres of timber. The store is a strip of land below electricity pylons, with a turning area wide enough to accommodate artics or 8-wheelers and drags, 600 yards along the road from the sawmill yard. "We forward to the mill yard what we will mill that week and take back any slabwood and offcuts. It's like having a large enough yard with a really long corridor."

Most timbers milled here come from Devon, and occasionally Somerset and Cornwall. Mike has just bought some boatskin (European) larch, which he found out later came from Reading. "Local harvesting companies such as Tilhill and Euroforest know me, offering standard loads of whatever is going: Douglas fir construction timbers; larch construction and cladding timber; Western red cedar cladding; oak construction timbers; chestnut timbers for construction and furniture. The best timbers go into store for joinery. We concentrate on naturally durable, quality



New Valtra T130 forestry tractor unloading butts of timber.

Below: Assistant sawyer Oska sorting sawn timbers into product piles.



construction timbers. Demand is more or less immediate, so we have to keep it all in stock, and we don't try to compete against spruce."

Customers are mainly traditional timber-framing companies and local building firms working on new builds and barn conversions. "Because of the bespoke market I have gone for, I buy timber months or years in advance. Naturally durable timbers can lie in the woods until clients want them. One of my best customers will order a Douglas fir frame, with cedar cladding and three curved oak collars, for delivery in a week's time. Another may want a chestnut balcony for delivery in a month. All timbers will be in differing dimensions and lengths. Some will be 7.4 metres long and some one-metre spindles."

Housed in a large, purpose-built timber-framed open-sided shed, built by Mike and the team, the Mebor bandmill runs three days a week. Logs are presented by roof-mounted crane (or handler) to the mill and all measuring and sawing is mechanised. Depending on the orders, sawyer Joe Scott generally mills 6 to 8 cubic metres a day. He could cut 30 cubic metres if all orders were uniform and from similar trees.

Today's cutting list began with a curved oak beam brought up from the woods this morning and 20 larch boards for cladding, 40 lengths of 12' x 7" x 1", for delivery this afternoon. Joe is now sawing Western red

cedar cladding with a waney edge.

All sawn products are unloaded, manually or with the handler, and stacked into their appropriate order piles by sawyer's assistant Oska: chestnut cladding from yesterday; cedar and larch cladding; and larch planks to be resawn into lathes.

Having a skilled sawyer and sawyer's assistant is crucial when cutting high-value, high-specification bespoke timber frames and cladding. "If the middle of your oak is stained brown or has shake or splits, you can't cut the beams ordered. Joe has to make a quick, cost-effective decision and cut it into something else. To efficiently utilise this wood, I then have to entice downstream buyers, generally furniture makers, to buy these interesting boards." There are 350 cubic metres of air-dried joinery-grade and character oak, chestnut, sycamore, ash and more in various yards.

All co-products are utilised. Sawdust for animal bedding is free for local farmers if they collect it. A local farmer, whose biomass boiler heats various homes, buys and chips the softwood slabwood. Hardwood slabwood is cut into low-grade firewood logs and seasoned in the log store.

Sawmills Devon does have a market for amounts of other end products. "Because we manage two woodlands, we can occasionally go in and select one or two lovely big straight trees, as required at short notice. Being located close to the sea, there



are one or two local boat-builders left, who I have supplied with boatskin larch, and occasionally slow-grown Douglas fir for ships' masts.

Value is added by making additional products as the orders come in. In a second, smaller, purpose-built timber-framed open-sided shed adjacent to the machine

workshop, craftsman/carpenter Greg Coe, who works in the yard three days a week, puts the finishing touches to an oversized picnic bench. Ordered by a local pub, it has sturdy larch legs and a generous and solid redwood top.

Managing Dartington's woodlands offers Mike the unique opportunity to develop markets for the Coast redwoods (*sempervirens*) growing there. "Fast-growing, reaching a DBH of 80–90 cm at 60 years, it is not of great structural quality, but could make good cladding when Western red cedar runs out. We are harvesting the redwood before it gets too big. The nice wide boards have more longevity than tannelised timbers."

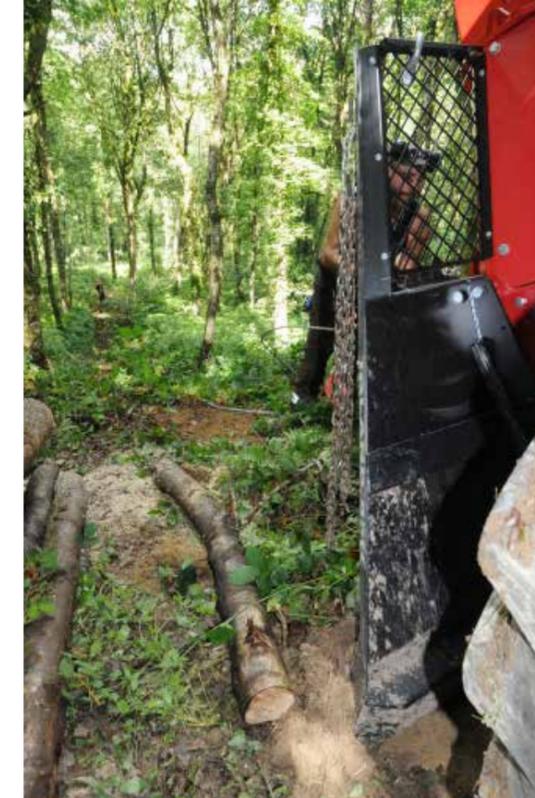
The main issue with redwood is what to do with the thick band of non-durable white

sapwood. "Harvesting a medium-sized tree, remove the sapwood and you are milling a small tree. We have to find new products for the sapwood. I am interested in cross-laminated timber (CLT) as a way of using those sappy boards. Our yard buildings are traditional-style timber frames secured with mortice and tenon joints to keep them light.

Our next building will be a cross-laminated structure, using CLT made here, to house a five-sided planer thicknesser (from Quantock Engineering, Somerset) to make flooring, profile cladding and add value to the air-dried joinery-grade timber stocks. With this addition, the business will be solid."

To make the CLT panels, Mike will plane down seasoned falling boards to 20 mm thick, lay them in moulds and glue them together to make 2.5-metre squares, 150 mm thick. Pressure will be needed too, or screws. "We

can lift and join the boards together on a very light timber frame, using Douglas fir for the ties to bind the two walls together. Sarking boards running along the roof will stabilise the structure, along with the timber sheets, rafters and purlins. The planer is a noisy machine and these CLT boards will



Left: Winched timbers – small-diameter oak thinnings for fencing, firewood or very small timber projects will be cut to length by chokerman Josh. The Valtra T130 with Forester Botex 570 crane and an 8.5-tonne Igländ winch is driven by Ross.

Above: Chokerman Josh in the distance down a steep slope in Idestone Estate's woods. Ross more visible on the right.

insulate against noise and the cold."

As a woodland manager and a mill owner, health and safety is never far from Mike's mind. Of the Confor South West Regional Field Day at Perridge Estate in June, he says, "It was useful to know FISA are there, giving helpful information and showing that they want to instill better working practices and that they are not an organisation to be feared and avoided. Us, as small contractors, need as much help as we can get. Otherwise we will leave the industry and do something easier."

Professionally, Mike believes that now is a good time to be in UK timber. "The price of timber has gone through the roof, which is good for growers, possibly for the harvesters and possibly for the mills. If there is a no-deal Brexit and the ports shut, anyone that has timber is laughing, in the short term at least."

Personally, "... running a sawmill that consumes wood that comes out of sustainably managed local woodlands satisfies the ecologist in me. I went to the Philippines a couple of years ago and saw no wildlife. Here, we have buzzards eating the chickens; we have goshawks in the woods, birds, bats, badgers, deer, foxes. It is not incredibly diverse, it could be better, but we have it. Pine martens would solve a lot of problems caused by squirrels, but then I would have to build a better chicken run."

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