

# K2: Modern sawmilling

## - at the foot of Ben Nevis



Top left: There are around 16,000 tonnes of logs held on site to keep K2 and K3 lines operating.

Left: The 'Hotties' line, where chips are dried down to 12-14% moisture content and then go through a hammermill and are then compressed under heat to form the hotties logs. No additives, just heat and chips; very clean!

Above: The K3 sawline log infeed and main bandmill carriage, where the logs are cut into the sections required for selling.

**T**HE original K1 site had been operating as a sawmill since 1974, with BSW acquiring it in 1988. The 'K' represents a shortening of the name Kilmallie, the area in which the mill is located. BSW took the opportunity, 12 years or so ago, to purchase the 26-hectare site of the Corpach paper mill, knowing that the K1 site was going to need expansion in the future.

Olly Stephen, mill manager for BSW Timber at the K2 Fort William site, invited Forestry Journal up to take a tour around the site and see the operation at first hand.

Olly explained the background to the development of the site. "Having purchased the paper mill site, after flattening it the first development that took place was the building of a pressure treatment plant and the installation of ten Mahild kilns. This was to allow added value to be achieved to the production from the K1 sawmill, which was creaking at the seams cutting 5,000 tonnes of logs per week."

Olly explained that this was all part of the company strategy, of starting at the back end and working up to the beginning of the operation. K1 had its own kilns and boilers, but the planned new K2 HewSaw SL250 saw line would have the capacity to produce more than twice the sawn volume of K1. From 2008 onwards BSW installed various pieces of kit to enable different elements of the operation. Following on from the Mahild kilns, in 2011 two 5MW KIV biomass boilers were installed, replacing the original oil-fired ones. This allowed co-products produced from the mill operation to be used as a power source. This was followed by a Springer grading and planing line, comprising a Microtec Golden Eye 702 X-ray grading system and a Ledinek planer; a combination of the most up-to-date

The transformation of BSW Timber's northernmost flagship sawmill was completed in 2013 when the K2 site, which had been gradually replacing the K1 site across the road since 2008, came fully into operation.

technologies available at the time, with the capacity to deal with all future production from K2. Overall productivity on the grading and planing line has increased over the last two years and a three-shift pattern now operates. This starts on a Monday from 6 am to Saturday at 6 pm. The boiler, kilns, and treatment plant operate 24/7.

The main part of the K2 operation came into full service in 2012 when the saw line, sorting, and stacking systems started to be installed. This took the total investment by BSW Timber at Fort William to over £50M. It was into the following year before the first cut logs rolled off the line. The decision was made to opt for a HewSaw SL250 saw line from the Finnish manufacturer Viesto. Kalfass supplied the sorting units of the centre core and sideboards, while Prologic scanners were incorporated into both the saw line and the log-sorting units.

Walking around the line, the wooden floor produced in Douglas fir sourced locally, cut on K1 and planed on the new Springer line, strikes you immediately, as well as the real tidiness and cleanliness of the

operation.

"This saw line can deal with logs ranging from 2.4 metres to 6 metres in length and from 14 cm to 45 cm in diameter and we have found it can cope with almost anything that is put through it. The K2 line works on a two-shift pattern, 6 am - 3 pm Monday to Friday and 3 pm - 1 am Monday to Thursday. We process spruce predominately through this line but also Douglas fir and larch."

Two years ago, further investment by BSW saw the K3 large logline come into production. K3 has a Primultini band saw and carriage and Pribo handling equipment. Olly explained that it could cut logs from 2.4 metres to 8 metres in length and from 30 cm to 90 cm in diameter. "With this line we can deal with bespoke orders and with big logs. We have produced everything from railway sleepers to tall ships' masts and we have put some giant pieces of Douglas fir through this line. This line allows us to be able to plan and deal with one-off and very specific customer orders."

BSW Fort William is the only sawmill in the world that operates a circular and band saw line together on the same site.

He also said that while this offers great advantages in terms of being able to deal with most customer

requirements and orders, it does take a lot of planning - thinking about how to process production through both lines to minimise downtime and waste. In effect, he explained, K3 and K2 are used to complement one another.

The Fort William sawmill is next to the sea port at Corpach and, while three-quarters of the logs to be processed at the mill come via road, the remainder come in by sea. Wood chips also go out by sea. Olly is certainly open to the prospect of moving more goods in and out of the sawmill by sea. There are the obvious 'green' benefits as well as economies of scale with a lorry only being capable of carrying 25 tonnes of wood, while a ship could bring in or out up to 1,200 tonnes.

Logs are supplied by Tilhill Forestry, Forestry Commission, Iggesund, Scottish Woodlands, Euroforest and private landowners and estates, through a mixture of long-term contracts and standing sales. Olly said that they face competition in the marketplace for logs, not just in Scotland but from Ireland too because of the potential for logs to be taken across the sea from Scotland.

100 per cent of the logs that come into the sawmill are used. They can be turned into an end product - finished boards, sleepers, fencing, other wood materials, and also domestic and commercial heat products, marketed under the labels Hotties Heat Logs and Pizazz Pizza Logs, as well as chips, and other co-products are burnt in the biomass boilers. Fort William, as the biggest sawmill in the BSW group, is used for long-run,

high-volume production runs. Timber end products, as well as being sent directly to the sawmill's customers, are sent to the BSW sawmill at Carlisle where they are stored until needed by BSW customers throughout the country. Olly is the youngest mill manager in the BSW group at 37. His route to becoming mill manager is an interesting and varied one. Moving from England to Scotland with his family, he attended boarding school (which he didn't like very much, but believes the experience has made him the person he is today). In his youth, he had several entrepreneurial adventures - one that involved him selling fish for a fish merchant and then himself before he ended up a

scallop fisherman. An accident at sea while diving, which could have ended in tragedy, made him seek other employment. He spent time in the hospitality industry and then the banking industry with RBS which saw him working in Fort William, Oban, and then finally in Edinburgh as a Senior Business Manager. At around the time of the banking collapse, he took the opportunity to leave the industry and, having decided to move back to Fort William with his own young family, and having heard good things about the BSW sawmill at K1, he took the opportunity to send his CV to the then mill manager Andy Rogers, to seek a role working at the sawmill.

"Seeing that I had developed a wide range of skills and expertise which Andy thought could be of use, knowing that there was going to be a major investment in the sawmill in the coming years, he offered me a role at K1, based not on my experience in the sawmilling industry but more about what I could do in a wider capacity."

Olly became a Production Planner, which gave him experience in planning volumes and production runs and what he described as an 'amazing grounding in the operations of a sawmill'. With the development of the K2 sawmill starting with the installation of the kilns, the treatment plant, and then the planer line, Olly became Secondary Operations Manager. This role gave him the opportunity to work with suppliers and experience what was needed to get a new line and installation up and running.

"I worked a lot on managing de-bottlenecking and improving uptime and this gave me a whole new skill set. When the K2 saw line became operational, I became Commercial Manager, with responsibility for planning, operations, and sales. With the support of BSW Timber, Adrian Tarrant,

I WANTED TO  
CREATE A PLATFORM WHERE  
PEOPLE COULD BECOME  
COMFORTABLE TALKING ABOUT  
ASPECTS OF THEIR  
PART OF THE  
BUSINESS

Above: K2 meets Ben Nevis.

Right: Olly Stephen.

# SAWMILLING

Group HR Director, and Andy, I completed a Business Management degree at Robert Gordon University via distance learning. With Andy looking to step back from being mill manager, I was then appointed mill manager designate in April 2017 and worked alongside Andy as his number two. Andy concentrated on the strategic planning and I did the hands-on, day-to-day work."

This was the start of an intensive period of learning for Olly. "I was living in Andy's pocket, working very closely with him, and doing what he did." This gave him the final bit of experience required for him to take over the running of the sawmill from Andy on 1 January 2018. Olly is grateful that Andy's experience and expertise has not been lost to him and BSW, as Andy now works in a business development role - effectively doing all the things he could not do when he was mill manager, because he did not have time to do them! Andy is there in the background to offer advice to Olly if he needs it or asks for it.

As mill manager, Olly has 12 direct management reports and is responsible for the 192 staff that work on K2. His management style, he says, is one of empowerment of his management and wider team to make decisions, and, if necessary, learn from any mistakes or when things do not quite go according to plan.

"I believe in inclusion in decision making; decisions made in isolation don't always work. For me, it is all about relationships and I have spent a lot of time getting my leadership team comfortable with each other and trying to appreciate each of their colleagues' pressure points and to see if, working together, ideas and solutions can be developed to help relieve these."

At the sawmill, Olly and his management team take part in a weekly walk around the site to see the operation at first hand and to help develop understanding of each department's role in the successful running of the sawmill. This routine has seen a greater understanding of the mill's overall operation and, in Olly's eyes, this helps with team cohesiveness. At the monthly manager's meeting Olly has also introduced a 30-minute presentation section at the end of the meeting to get each of his 12 managers to present on something going on with their department or within their area of the sawmill. "I wanted to create a platform where people could become comfortable with each other and with talking about aspects of their part of the business. One of the first presentations given was about yield and how to improve the percentage of sawn timber against co-products. We were getting a yield of around 52% with the rest going to chips and sawdust. Once Henry, my operations manager, had made his presentation and we opened the meeting to the wider group, there were



Above left: Mahild kiln being loaded with 18 packs of sawn material (approx. 200m<sup>3</sup> per kiln), these are then dried with heat from the biomass boiler over 4-7 day cycle. Once dried timber is presented to the grading and planing line.

Left: The log scanner of the Hewsaw SL250 3.4 line, which determines which products to optimise for.

Top right: The Hewsaw SL 250 3.4 sawline control console for the log infeed, sawline and co-products.

Right: The K3 sawline edger breaking down extra products.

several suggestions put forward on ways to improve yield. These were the exact nuggets of information I was looking for and these and some of the other outputs from the meeting have led to a 2% improvement in yield, which has a major implication to our bottom line!"

Another tool that Olly has used to get his message across to the workforce is the use of visual aids in the form of pictures. He and his team take many pictures on their weekly walk around the sawmill of the good things they see - and the bad - with a commentary added to each. He believes that pictures are a great way of communicating. In the gatehouse where the workforce clock in and out each day there is a weekly display of the

six good and six bad things that have been seen at the sawmill. The fact that there are up to four levels of management and workforce below Olly means that the use of pictures is a great way of getting a message right down the chain. This idea has been such a success that it has been rolled out across the other BSW sites.

Olly took me through some of the impressive statistics of the Fort William sawmill. In the past 12 months, K2 has produced 250,000 m<sup>3</sup> of sawn timber and 500,000 m<sup>3</sup> of processed logs, while K3 has produced around 30,000 m<sup>3</sup> of sawn timber and around 60,000 m<sup>3</sup> of processed logs. Up to 100 lorries arrive with logs and up to 35

leave with sawn timber daily and the grading and planing line has put out over 7.6M pieces of finished timber in the past year.

The workforce is cross-skilled in the added-value area, which includes the biomass boilers, kilns, treatment plant, and the grading and planing line, so they can work across each of these areas when needed. In the primary operations area at K2 and K3 the roles are job specific and quite specialised so this is not always possible there. The overall workforce is flexed up and down to cope with the production volumes needed. There are around 16,000 tonnes of logs held on site to keep K2 and K3 operations going, and these are cut into three core lengths of 3, 3.6 and 4.8 metres. Wood arrives at the sawmill and goes over the weighbridge before being taken to the log-sorting yard, graded and then cut on each of the saw lines. 45 cm and less diameter logs go to K2 line while 50-70 cm larger logs go to K3 line.

As well as being a major employer in the area, Olly is also proud of the involvement that the sawmill has with the local community in and around Fort William. "We sponsor

local shinty and football teams; we supply strips and cups for local competitions. We have also supplied wood for benches, sheds, decking, and fences needed by local community groups. In essence I have made it known that if there is a need in the local community for wood, we will supply it."

I was also intrigued to learn from Olly that BSW operate a retail outlet at the Fort William site, the only such unit in the whole of the group. "We sell direct to the public and it gives us an opportunity to sell wood that wouldn't perhaps meet the specification for our normal business customers. One of the challenges is being price competitive without undercutting some of the retail outlets of our national customers. The outlet has always been part of the setup here and it does contribute turnover and profit to the sawmill."

Before I left Fort William I wondered what Olly's thoughts and plans were for the future. On the supply of timber, he confirmed that in his area of operating there was probably an adequate supply now but that in 10-15 years' time this situation will change. He feels that there will need to be more planting but that

the Scottish Government are aware of this and are, in general, supportive of forestry. With Brexit, things are more difficult to predict in his opinion. With current exchange rates UK timber is more competitively priced, but that could change depending on the end deal that is struck.

With regard to the sawmill, Olly explained, "The last five years have been about getting it up and running; the next five years are about sustaining it and making it more efficient. I want to keep training and developing the teams here at the sawmill. I see this going from taking on board apprentice workers, to developing the workforce and offering promoted roles for them such as advanced operators and team leaders, with the overall aim that some will make it through to the leadership level of management."

There has been a lot achieved at Fort William already. It is certainly an impressive operation, and from what I saw on my visit, it is set to be successful well into the future.

**James Hendrie**