$15 million Kaituna Sawmill **upgrade** a ringing endorsement

BY **JACQUIE WALTERS**

PHOTOGRAPHY BY **TIM CUFF**

The multimillion-dollar upgrades currently being implemented at Kaituna Sawmill near Blenheim are a resounding endorsement for the sawmill's engaged and committed team.

Kaituna Sawmill is the wood processing asset owned by Nelson Forests Ltd (NFL). NFL itself is owned by Global Forest Partners (GFP), an investment company based in the USA. The sawmill provides 65 full-time equivalent roles.

Kaituna produces some very innovative, high-quality timber products for an extremely competitive global market but, for a number of years, the sawmill has struggled to achieve consistent, year-round energy production using its existing wood-drying technology.

Unpredictable drying conditions made managing production consistency and quality of output from the mill challenging. The bottom line was that the sawmill needed to upgrade its plant, but such an upgrade comes with a hefty price tag.

Four years ago, it was clear to General Manager Darrell O'Brien that changes were needed. A LEAN* approach was already being applied to operations within the business, and O'Brien decided to take this one step further and implement a LEAN programme that focused on the sawmill team. Every year since then, six employees from the sawmill have been sent to Japan to learn more about LEAN and how its principles can be applied in their roles and the working environment in general. At a cost of $20,000 per person to make this trip, this is no modest undertaking.

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>
> **DARRELL O'BRIEN, GENERAL MANAGER**

"As a result of LEAN thinking, the team here have provided 700–800 Kaizen (improvement ideas), most of which have been implemented," says Darrell. "These ideas have made a compounding, tangible difference to our operation and we have been able to see the benefits of these low-cost improvements. However, we had arrived at a point where a quantum leap in production capability was required. The way to do this was by introducing new processing technology."

At the same time, Projects Manager Bryan Phillips and Darrell O'Brien himself were visiting other sites in New Zealand and Europe to investigate alternative plant with a view to proposing large-scale improvements at Kaituna.

"When we sought a significant investment from GFP to bring the sawmill up to a competitive and consistent standard within the rapidly changing global marketplace, we weren't sure what kind of reaction we would get," says Darrell. "However, having seen what the people at the sawmill had already achieved, GFP believed in the team's commitment to the business and its ability to deliver a measurable return on their investment."

Since receiving the green light for the project, which is known as Project Emerald, a state-of-the-art Polytechnik 4MW biomass-fired energy centre and a Windsor continuous drying kiln (CDK) have been installed and commissioned. Phase two of the project, set down for later this year, will involve the installation of a new Wienig planer sourced from Germany, and upgrades to the green mill side of the business, such as a new horizontal saw. In total, the project scope represents a $15 million investment.

Only weeks after the commissioning of the new energy centre and kiln, it is clear that GFP's faith in the team at Kaituna is being rewarded.

Dry Mill Manager Shane Johnson is particularly noticing the positive change in his area of operation, which traditionally struggled to maintain a consistent production flow, especially during the winter months. "The new energy centre burns wet and dry fuel and runs at a constant temperature," says Shane, "which gives us the ability to plan more accurately and to manage our product flow.

"Products are coming out of the new kiln at a consistent dryness and as a result they're a lot straighter. That means a huge reduction in deviation in the boards. It used to be that around 10 percent of a run wouldn't be straight enough to go through the planer accurately, possibly 30m^3 in a batch, now it's less than 0.5m^3, or around 12 to 15 boards per run. In an industry where getting maximum value out of each log is crucial, improvements such as this are hugely significant."

Work flow has also markedly improved. "With the new kiln, we can accurately predict when the product is going to come out. It takes an hour to set up a planer, but with such a consistent and predictable flow of wood, those changeovers can be planned for and set up ahead of time. Previously, we would open the kiln and it would take four to six hours for the timber to cool down so that we could plane it. Now it's already gone through the cooling-down process when it exits the continuous drying kiln and we can run it straight through the planer."

The new kiln has meant that a fresh approach is needed, says Shane. "I've been working for this company

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> **SHANE JOHNSON, DRY MILL MANAGER**

ABOVE Dry Mill Manager Shane Johnson (left) and Kaituna Sawmill Projects Manager Bryan Phillips
LEFT General Manager Darrell O'Brien looks at the Polytechnik energy centre
BELOW Product comes out of the Windsor continuous drying kiln

Polytechnik engineer Marcin Maczollek (left) and Boiler and Kilns Team Leader Don Boon

for 15 years and we've been set in a way of doing stuff because we've had to. Now it's a new beginning and we're starting to get our head around it. It's only taken us probably a month of trial and error.

> "You have to keep the gear in to keep up with the industry or else you get swallowed up"
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> **DON BOON, BOILER & KILNS TEAM LEADER**

"There are some really good minds working here that have nutted it out. The problems we used to focus on aren't there anymore. It's a real game changer. It's enjoyable to have change like that, especially when you're like me and you've been in a business for so long. It's nice to have change. It makes it a bit more diverse so you're not stuck in a rut. You've got something new to think about every day, which is good. It's a challenge."

Boiler and Kilns Team Leader Don Boon agrees. Standing beside the impressive and beautifully designed Polytechnik energy centre, Don almost seems astonished to find himself in such a setting after 28 years working at Kaituna. "When I first saw it, I thought 'Heavens, an old codger like me, hell, how am I going to get my head around this?' It's still a learning curve, but it's brilliant, aye!" Don is acutely aware of the responsibility he and his team have to make the new technology pay its way. "Now they've given it to us we've got to make it pay. We've got to make it work, and we do. That's what it's about. I'm very proud of it. To me this is what we should have had 10 years ago. You have to keep the gear in to keep up with the industry or else you get swallowed up."

Projects Manager for Kaituna Sawmill, Bryan Phillips, has managed the project in-house and has the relaxed smile of a man who is seeing what he has envisioned producing benefits. "Bryan has done a stunning job of planning and executing the projects," says Darrell.

Bryan explains that the energy centre itself will result in a saving of $500,000 per annum in fuel because the sawmill can now produce all the steam energy it requires using wood residues from its own sawmill operation, rather than having to buy in non-renewable oil and other fuel. The continuous drying kiln also results in a 30 percent energy saving compared with the previous batch kilns.

"We had carefully researched other operations for years," says Bryan. "We wanted a solution that reduced emissions and provided the energy output we needed. We've replaced a 4.7MW boiler with a 4MW boiler but it's producing more energy. There were two tonnes of refractory bricks in the old steam boiler compared with 90 tonnes in the new boiler."

One measure of how efficient the new boiler is can be seen in its ash production. "In two months of operation we've had about one and a half ash bins," says Bryan. "Previously, there was about a wheelbarrowful every day."

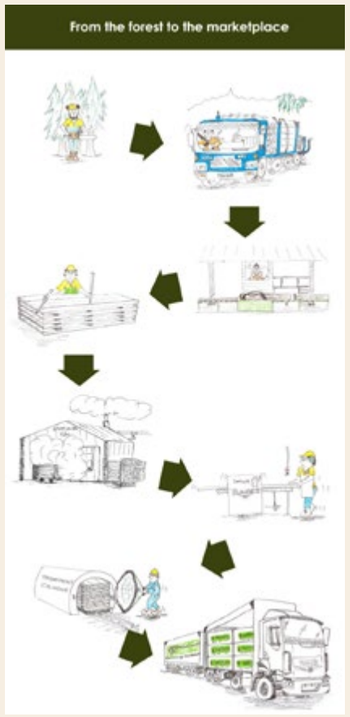
For many people, like Bryan, who have been working at Kaituna Sawmill for a number of years, the improvements they are now seeing have been long-anticipated and are deeply satisfying. "If you don't keep up with technology you're not going to survive in the long term," says Bryan. "I've looked forward to this for a long time. Customers will notice a change."

"This project is an investment in our people and it provides commercial viability of our business into the future," says Darrell, "and the ongoing success of this business is directly important for the local community."

The sawmill team won't be resting on its laurels, however, even when the next phase of the project is complete. The search for continuous improvement is a constant at Kaituna Mill.

"Since I've been here we haven't stopped," says Darrell. "When we complete this project, we will have the satisfaction that we've got through the upset conditions that projects like this bring and we'll feel great about the improvements, but we won't be taking a big breather and feeling like it's all over. We'll be focusing on driving the business consistently and looking at the next improvements for the operation of the business.

"That's the way business is, really. You're constantly looking to improve. In any business, if you sit on your laurels and don't put yourself out there, you just come to a stop. We need to remain very focused on our capabilities and opportunities to improve and the ideas that come from our people. Engagement, training, and people wanting to be here, they're very important in our business, and to me." WT



ABOVE Kaituna Sawmill
BELOW Boiler and Kilns Team Leader Don Boon looks at the furnace in the Polytechnik energy centre

KEY IMPROVEMENTS:

A Polytechnik energy centre burns wet sawdust and shavings and produces energy more efficiently and with lower emissions, and will save $500k per annum on fuel costs, including eliminating the need to buy $200k per annum of non-renewable oil.

A Windsor continuous drying kiln provides more consistent and predictable drying, and produces timber that is straighter and easier to plane (reducing wear and tear on planer blades), with a greatly reduced number of rejected boards.

**LEAN is an approach to manufacturing and business processes that originated at Toyota in Japan. The approach looks to limit "waste" in processes and increase value by identifying and implementing often small but inherently valuable and measurable changes within a business.*

Contact

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