New lathe line cuts a brighter future for plywood plant

With a new $15 million lathe line now in place at its hardwood plywood plant in the Ontario town of Hearst, Columbia Forest Products is looking to ramp up production—and better secure the jobs it provides, being the largest employer in the northern Ontario town.

By Tony Kryzanowski

It was a happy holiday season this past December for employees at Columbia Forest Products in Ontario, with the successful ramping up of a new $15 million lathe line at the company’s plywood plant in Hearst, and the announced re-opening and $1.5 million investment into the company’s mothballed veneer plant in Rutherglen, Ontario.

“We’re very high on Ontario, its hardwood resources and most importantly, its smart, hard-working people,” says Gary Gillespie, vice president of Columbia Forest Products’ Northern Operations.

Gillespie says that because the North American market for rotary hardwood veneer is improving, it made sense to re-open the Rutherglen plant. The company is the largest producer of rotary cut veneer in North America.

Though it has improved, the market situation has been extremely tough in recent years. Competition from imports had a severe impact on the viability of North American-based plywood and veneer plants over the past decade. Faced with this competition, many plants closed—as did many North American-based furniture manufacturers—due to competition from offshore. These furniture manufacturers were major consumers of domestic, appearance grade plywood.

The widespread forest industry downturn in 2008—driven largely by the American housing crisis—didn’t help either, with Hearst plant manager Mike Fournier recounting the vast number of sawmills, pulp mills and veneer plants in Ontario that were hit hard by the downturn.

“Since the arrival of offshore imports and the decline of the wood industry in North America, there is one hardwood, line by line, plywood plant left in Canada,” says Fournier. The domestic decorative plywood industry’s main competition comes from Asia and South America.

For quite some time, the over 200 employees at the Hearst plywood plant held their breath and waited for the other shoe to drop as mills in communities all around them closed. But through a lot of effort, they convinced head office that it was worthwhile to upgrade one of the last remaining hardwood plywood plants in Canada, and now they are reaping the fruits of their effort.
“Four years ago, I challenged the Hearst team to show our board of directors that the facility was worthy of this significant investment,” says Brad Thompson, Columbia president and CEO. “They rose to the occasion in the days and weeks that followed.” He adds that with the new Japanese-manufactured Meinan lathe line now in place at the Hearst plant, its workforce is positioned “to be the best in the world at what they do”.

Fournier says that the plywood plant expects a significant increase in the peel quality and the yield from each log as a result of this investment in the Meinan lathe system. As a spindless lathe, Columbia will now have a log core drop of only 60 mm as opposed to 125 mm from its old Coe lathe.

By increasing yield from each log, the plant is able to manufacture the same amount of veneer using fewer logs, and by applying this new technology, Columbia is also achieving a more consistent green veneer thickness.

“The increase in recovery that we are achieving is a very large number,” says Fournier, adding that he is amazed how smoothly the Meinan lathe operates.

Production earlier this year was 6,800 panels per day, with the ultimate goal being 10,500—an increase of about 50 per cent.

In 2014, the Hearst plant produced 103 million square feet (MSF) of decorative plywood based on 3/8” thickness. The plywood is used specifically by the cabinet, design, architectural and furniture industries, with its main markets being Canada and the United States. Home Depot is one of the plant’s major customers.

The Hearst plant manufactures plywood in thicknesses from 6 mm to 38 mm, with their bread and butter product being plywood from 17 mm to 19 mm. All inner plies are aspen, and hardwood veneers applied to the face and back are any hardwood species harvested under Forest Stewardship Council (FSC) guidelines. Production is customer-driven, and a lot of their veneers come from common North American species such as birch, maple, basswood, walnut and cherry wood. Columbia itself operates a number of hardwood veneer mills in North America that supply this plywood plant. The source of their aspen inner plies is also FSC-certified.

Fournier says that Hearst is a good location for a decorative plywood plant because it is close to a good supply of aspen peeler logs, typically coming from within 200 kilometres of the plant. Columbia’s own woodlands division supplies 50 per cent of the plant’s peeler logs, with the rest coming from its hired logging contractors and contractors shared with other mills. Their annual allowable cut is 250,000 cubic metres of veneer logs.

The first phase of finding quality peeler logs takes place “right in the seat of the feller buncher,” with 36” diameter logs being the largest peeler log that the plant will accept and 8” being the smallest diameter. The length is 106” long. Smaller diameter and lower spec aspen logs are sold to oriented strandboard (OSB) producers and to pulp and paper mills.

“With the new lathe and new technology that we are installing in the facility, we want to increase the yield,”
says Fournier. “If we increase yield, and are able to go to a smaller diameter peeler log, the overall objective is to produce more metres sustainably within that 200 kilometre radius of the mill.”

With the recent investment in a new lathe system in Hearst and the decision to re-open the veneer plant in Rutherglen, the employee-owned company is looking forward to a brighter future.

“Finally, we now have our Meinan system in the plant,” says Gilles Levesque, Columbia Forest Products’ Canadian general manager. “As a follow-up to the more than $5 million investment in innovative capital projects at the facility over the past seven years, this $15 million crowning investment provides more than 200 employees in Hearst with an integral piece of capital innovation that will enable us to compete well into the future—regardless of the exchange rate or foreign competition.”

Manufactured in Japan, the 200’ long Meinan lathe line was assembled, tested and disassembled in Japan before being loaded into 35 containers destined for Vancouver. It was then shipped across Canada by train, unloaded in Toronto, transported to Hearst in 30 trucks, then re-assembled and put to work.

The production process starts with logs entering the plant and encountering a slasher to ensure that they are the correct length for the lathe. They are sorted for diameter, and then conveyed to conditioning ponds. This step is necessary to warm the logs, particularly in winter. They are debarked on a Nicholson AB5 debarker and then immersed into more conditioning ponds.

From there, they are scanned by an E-light 16-point X/Y scanner to determine the best skew on the lathe to produce a peel with maximum recovery in mind. The log is first loaded onto the old, existing Coe lathe, used as a round up lathe to produce a true cylinder for peeling on the subsequent Meinan lathe. This step is expected to extend the life of the Meinan lathe knife. The Meinan lathe will then peel a veneer thickness according to the requirements of production in the plant that day.

The green veneer is clipped using a Meinan automated clipper, measured for moisture and sorted into one of five bins before being dried in either a Moore or Coe dryer. After drying, the veneer is scanned using a Raute VDA system, which grades the veneer into one of eight sub-grades. Depending on the sub-grade, it will travel different avenues of processing. One route is the fully automated Raute Patchman line. Alternatively, it can be sent to one of three Raute composers or the new Meinan composer.

“All of the upgrading in this area is to maximize quality and yield of the veneer,” says Fournier.

Columbia has adopted the Lean Manufacturing system to maximize efficiency throughout its manufacturing process and to eliminate waste. This system was popularized by Toyota, and is now used effectively in many industries. The system at Columbia is designed so that the plywood plant is only processing a certain amount of material at one time, to minimize wait times between processes and to ensure that veneer sheets are fresh while maintaining an organized and safe work environment.
“If you keep buying tomato soup on special and you don’t rotate your stock, that first can could be pretty gritty in a year from now,” says Fournier, using the example to explain why they have adopted the Lean approach.

At this point, the plant uses a recipe system based on customer requirements to prepare the stacks of veneer on the Globe spreader. After lay-up, the stacked material encounters the pre-press and then the Burrard hot press to manufacture the panel. After the press, the panels are conveyed to the Globe trim saw, then to the putty line to repair minor defects, and then to either a Coe Tidland sizing sander or Timesaver sander. The next step is the grading station and stacking. A new dust extraction system was also installed from a closed Columbia particleboard plant as part of the recent upgrade.

Hearst-based Strategik Builders was the civil contractor on the project. The two mechanical contractors were Straight Line Plumbing and Mechanical and Rick’s Welding and Machining. The electrical contractor was B & C Automation. All were local contractors. The new line came on stream this past September and is ramping up to full production.

“This investment is very reassuring for our employees and very reassuring for the community,” says Fournier, noting the impact the plant has on the town. “We’re the largest employer in Hearst.”