

SOMETHING OLD, SOMETHING NEW

HOW CASCADES AND GL&V
REBUILT AN AGING DRYER SECTION
INTO A HIGH PERFORMANCE
DRYING SYSTEM.

What happens when a dryer section is a major production bottleneck and requires imminent replacement – but there’s insufficient funding available for the newest, easiest and most obvious solution? What’s more, if everything went according to plan, a debottlenecked dryer solution would mean that the performance in the wet end would need to be upgraded as well. This was all part of the dilemma facing Serge Tremblay, at Cascades’ East Angus, Quebec mill.



Dryers prior to reconditioning.

But there was more. Mr. Tremblay also needed to find a supplier partner with three important characteristics. First: A supplier who understood his mill’s goals and limits, and who could work on the mills terms and timetable. Second: A supplier who could agree to upgrade, test and install machine parts and pieces pulled together from shuttered mills in Europe and the United States. Third: A supplier who had the process savvy, technical competencies and commercial willingness to see his mill as a complete enter-

Tending Side of felt driven dryer section showing reconditioned felt rolls and dryers with new framework.



Felt rolls prior to reconditioning.

prise, not just a bunch of fragmented process islands.

The solution he constructed shows how smart thinking, careful planning, and the right partners can use a limited budget to transform an older machine into a competitive one.

The dryer section on the No. 3 machine at Cascades East Angus, which produces kraft bag paper from 100% recycled fiber ranging from 41 to 122 GSM had been installed in 1915. By the late 1990's, its aging cast iron frame was weakened with cracks and repairs that compromised the frame's structural integrity. Despite frequent maintenance the constant vibration under load not only loosened the sole plates and cracked the concrete foundation, it also caused drive system misalignment, bearing failures, and loose rolls. Even with frequent shutdowns and ongoing maintenance, steam pressure, dryer speed – and critically, production and quality targets – were all severely limited. And the situation was worsening with time. "It got to the point where basically, the combination of shuts and dryer maintenance was exceeding the time and cost we projected replacing it would take," Serge Tremblay recalls. "The financials weren't making sense any more and besides we ultimately would have to produce a higher quality sheet at a lower cost to keep the machine going. And we couldn't be where we needed to be in



Felt rolls after reconditioning.

the market with a slow, breakdown-prone dryer section."

Without the available time, budget or the justification for the newest equipment in the dryer section, Tremblay and his team began exploring the alternatives. In 1999, after some solid research work they found 37 Sandy Hill dryers in a Pennsylvania mill. Six inches wider than No. 3's production width and rated to over four times the operating pressure of the existing cans, the dryer trove was a perfect solution once properly inspected and reconditioned. Later that same year the mill's detectives found and purchased dryer felt rolls, guide rolls, dryer doctors, guides, and felt stretchers from a Beloit machine built in Italy and installed in France. Now, with the equipment secured, Cascades needed a solid and flexible partner, someone who didn't care where the components originated and someone with the

engineering credentials capable of engineering the used equipment into a high performance dryer section. And then ensure the new section would be installed and ready for start-up at the end of a scheduled 2-week shutdown. They found one in GL&V.

GL&V's first contribution to the project was to inspect, disassemble and overhaul the used dryer cylinders and related equipment. This was all done in the field or at their 100,000 sq. ft. facility in Hudson Falls, NY. While this was underway, GL&V's engineers were designing a new box steel dryer frame to accommodate the newer, faster, wider equipment. After the new frame was fabricated in-house, the entire dryer section – including all the cans and dryer felt rolls, bearing housings, piping, sole plates, motor stands, walkways and rope tail threading system – was assembled and tested at the GL&V facility. By

January 2002, the section had been disassembled and was ready for shipment to East Angus.

Work on disassembling the old dryer section and reinstalling the reconditioned equipment began as soon as the mill entered its scheduled shutdown on January 22. Working as a team, the Cascades crew and GL&V's Field Supervisor first dismantled the old dryer section, then repaired the foundation and installed the new sole plate. With many of the sections and sub-systems pre-assembled, erecting the new framework went quickly, as did installation of the new dryer hood, drives and drainage system. By February 4, less than two weeks later, Cascades East Angus Machine No.3 had a new dryer section that was ready to handle its first sheet.

"We pushed the button and the dryer section worked perfectly with only a few of the expected bugs to tune out of the system," Tremblay reports. He continues, "In terms of quality, runability and maintenance, things are totally different now." Where the old section had to be shut down frequently, the new dryer section has performed for more than a year without any unplanned downtime. And instead of being dryer-limited, Machine No. 3 now has excess dryer capacity. In fact, Cascades is now working with GL&V on the second phase of the Machine No. 3 upgrade: a wet end rebuild that will allow the mill to take full advantage of the dryer section's total productive capacity – and profit potential. The wet end



Original line shaft drive.



Tending side of the dryer section.

rebuild will include a new hydraulic headbox with automatic dilution.

But this is more than a story about successfully reconditioning and installing some used equipment. "GL&V has taken a genuine interest in contributing to the success of my entire mill." According to

Tremblay, "They asked the right questions, they know what my expectations are, they know what kind of value I require, and they helped construct a strategy and a schedule for making this mill a higher performing and more competitive one."



Drive side of the dryer section.