

Wood 2012 prepares Skoghall for the future

The Wood 2012 project replaced an old woodyard at this Stora Enso mill in Sweden – improving the fiber supply and creating a modern, safe wood processing operation. ANDRITZ delivered the key production equipment in the woodroom.

This EUR 90 million investment modernized the fiber infrastructure at Skoghall, one of the world's largest manufacturers of packaging board for foodstuffs. It is estimated that one in six paperboard packages in the world containing liquid is made from paperboard produced at Skoghall. In addition, the mill produces CKB, a paperboard for packaging dry foodstuffs. The integrated pulp mill produces 330,000 t/a of kraft and 260,000 t/a of CTMP.

After the Wood 2012 investment, chip capacity and quality increased, while the overall operation was made more efficient. Skoghall consumes about 2.3 million m³ of logs and sawmill chips per year. After the project, the mill's capacity to produce chips increased 40% to about 1.9 million m³ per year.

Equipment at end-of-life

It was in 2008 that the mill began planning for a new wood processing facility. "We were running into a dead end with our old woodroom," explains Eva Reiner, Skoghall's Project Manager. "It was built in 1971 and modernized in stages, but much

of the equipment was at end-of-life. Logs were fed to the debarking drum by an overhead crane. Authorities advised us that it would have to be replaced in 2012 as it had reached the limits of safe operation."

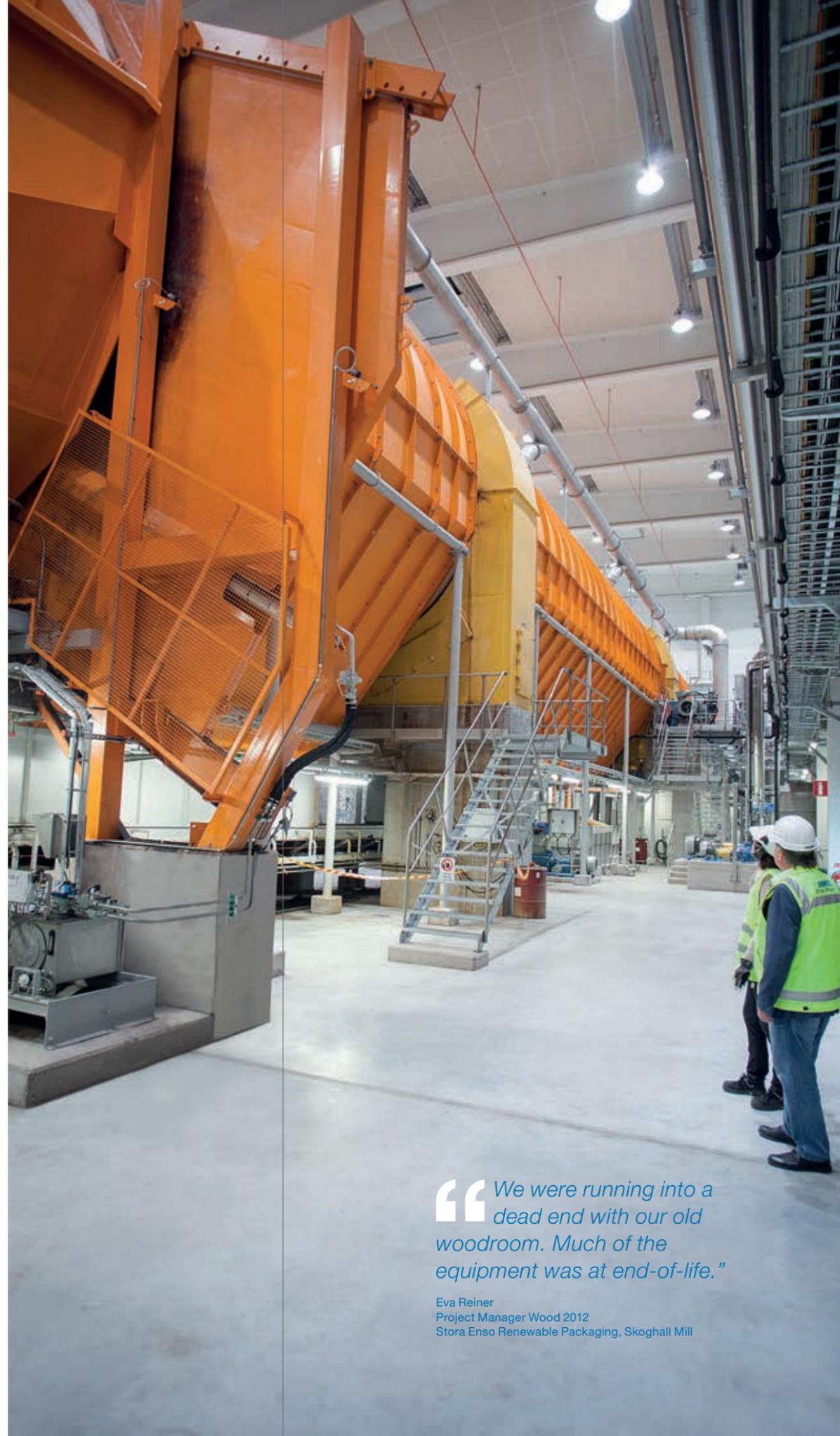
Another challenge was that the capacity of the old woodroom was too small and a significant amount of chips were purchased. "Our chip supply was affected by seasonal factors," Reiner explains.

A better location

According to Reiner, by moving the wood processing operations from a cramped location inside the mill to land adjacent to the mill, she and her team could create adequate space for log receiving, chipping, storage, and conveying.

"A big challenge for us was finding the right location for a modern woodyard," Reiner says. "It was decided to utilize some land just north of the mill (site of a former sawmill and a paper chemical preparation plant)."

A 700 m long conveyor bridge, partially over water, would be required to transport chips between the new site and the mill,



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▲ Eva Reiner, Skoghall Project Manager

where a new chip screening room would be constructed. In total, around 5 km of conveyor belts were built.

"The relocation was definitely worth it," Reiner says. "Storage volumes of logs and chips increased dramatically, and more logs can be delivered directly to the mill without being reloaded at wood terminals. About 45,000 m³ of wood can be stored here now, corresponding to a full week's production."

In the starting blocks

"At first we looked at a two-line concept, but this would have had too much capacity and the investment cost would be high," Reiner says. "So, we finally decided on one large debarking drum with two chippers – one for CTMP chips and one for kraft mill chips."

In order to meet the schedule for overhead crane shutdown, Skoghall would have to do the tie-ins during the annual shutdown in November. So, backing off that date, the planning team determined that the project would need to start in the spring of 2011. Skoghall received Board approval for the

◀ Eva Reiner and Stefan Marklund, ANDRITZ Sweden's General Service Manager for wood processing, inspect the new ANDRITZ Waplans debarking drum. The hydrostatic components in the drum replace rubber tires or steel wheels.



▲ There are two parallel HHQ-Chipper units at Skoghall – one for kraft and one for CTMP chips. A unique switching arrangement allows logs to be easily conveyed to either of the chippers depending on production needs.



▲ Reiner and Marklund talk with operators in the modern control room.

investment in April. “We were in the starting blocks ready to go, just waiting for investment approval,” Reiner says. “As soon as we got it, we signed contracts with suppliers – and they began immediately on the work.”

On time, high quality

From an implementation point of view, Reiner is pleased with the work of ANDRITZ. “The erection proceeded well,” she says. “We had a good and open relationship with Taisto Salakka (ANDRITZ Project Manager) and his team. The woodroom started up well and on time. We faced some challenges together during the checkout phase, and we have had some challenges after start-up, but ANDRITZ has been very supportive. We get good support from their local people as well.”

The wood processing operation started up as planned in November 2012. “We cut the conveyors from the old woodroom and then started up the chip handling equipment on the mill side on November 5, 2012,” Reiner says. “Then we brought the new systems on this side online on November 8, 2012.”

This was Reiner’s first experience working with ANDRITZ and was, in fact, her

first major project at the mill. “ANDRITZ is certainly well-known to me,” she says. “The company has good technology and has made some good improvements to that basic technology over time.” Reiner and her team visited the ANDRITZ reference site in Varkaus, Finland (another Stora Enso mill), where they met with the mill production team.

Scope of the project

All the wood used at Skoghall comes by road or rail. Transporting wood by rail is more economical. “The Wood 2012 project gives us the opportunity to increase the proportion of wood that comes by rail to the mill,” Reiner says. “A significantly larger woodyard also provides logistics improvements that save us money.”

Log stacker trucks are now used instead of an overhead crane. “The trucks weigh 80 tonnes each and can lift an entire load of logs from a train or truck,” Reiner says. “Our operators are multi-disciplined and rotate jobs. They now have a new skill – stacker truck drivers!”

The investment also brought a de-icing system to the mill for the first time, with the equipment coming from ANDRITZ. The de-

livery includes a 60 m long PowerFeed in-feed conveyor, where the logs are sprayed to wash away impurities. Hot water is used in the winter time to de-ice the log surface.

An ANDRITZ Waplans type debarking drum (5.5 m diameter and 42 m length) is used for debarking. This Waplans drum has a single drive and two hydrostatic support units. The hydrostatic design replaces rubber tires or steel wheels. “The drum literally floats on water as it rotates,” say Stefan Marklund, ANDRITZ Sweden’s General Service Manager for Wood Processing, “with very low wear and high reliability. Most of the mills in Sweden prefer this type of drum design.”

After the debarking process (up to 6 m length logs), it is a rather unique switching arrangement where the logs can be easily conveyed to one of two ANDRITZ HHQ-Chippers – one for CTMP and the other for kraft. “We run the CTMP chipper about 25% of the time,” Reiner says.

Logs are fed horizontally into the HHQ-Chippers. CTMP chips are cut to a length of 23 mm and kraft chips to 28 mm. The beauty of this switchable input to the chippers is that the mill can keep producing

chips during a knife change on one of the chippers. The chippers are provided with HQ-Plus knife systems and the mill has a knife service contract with ANDRITZ.

ANDRITZ also delivered the bark and water handling systems for the woodroom. Bark is crushed with ANDRITZ BioCrusher, pressed to reduce moisture, and then conveyed to the mill’s biomass boiler.

Problems solved

“This project solved a number of problems for us,” Reiner says. “First, it improved our fiber supply and put more of it in our direct control. We can handle up to three railway deliveries per day instead of just one. Chip quality is much improved since we are now using state-of-the-art production equipment.”

Performance tests were recently completed. The debarking drum performed well in quality and capacity. The capacity

With its new woodyard, Skoghall can now handle up to three railway deliveries per day instead of just one. ▼



▲ Reiner (left) and Marklund in the new woodroom at Skoghall.

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is 345 m³ sub/h under bark for kraft and 265 m³ sub/h for CTMP.

Recently, Skoghall ordered an online Scan-Chip analyzer from ANDRITZ and is in the process of installing it now. According to Marklund, “ScanChip helps operators produce consistently high chip quality while minimizing unwanted chip fractions or waste. It includes the world’s first optical chip analyzer that works online. Chip samples are taken at regular intervals. Through laser triangulation, the computer measures the length, width, and thickness of each sample chip with absolute exactness. Operators can calibrate knife chipping angles, fine-tune feed rates, and determine exactly when to make knife changes. This will help Skoghall get maximum yield from their wood raw material and improve their profitability.”

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