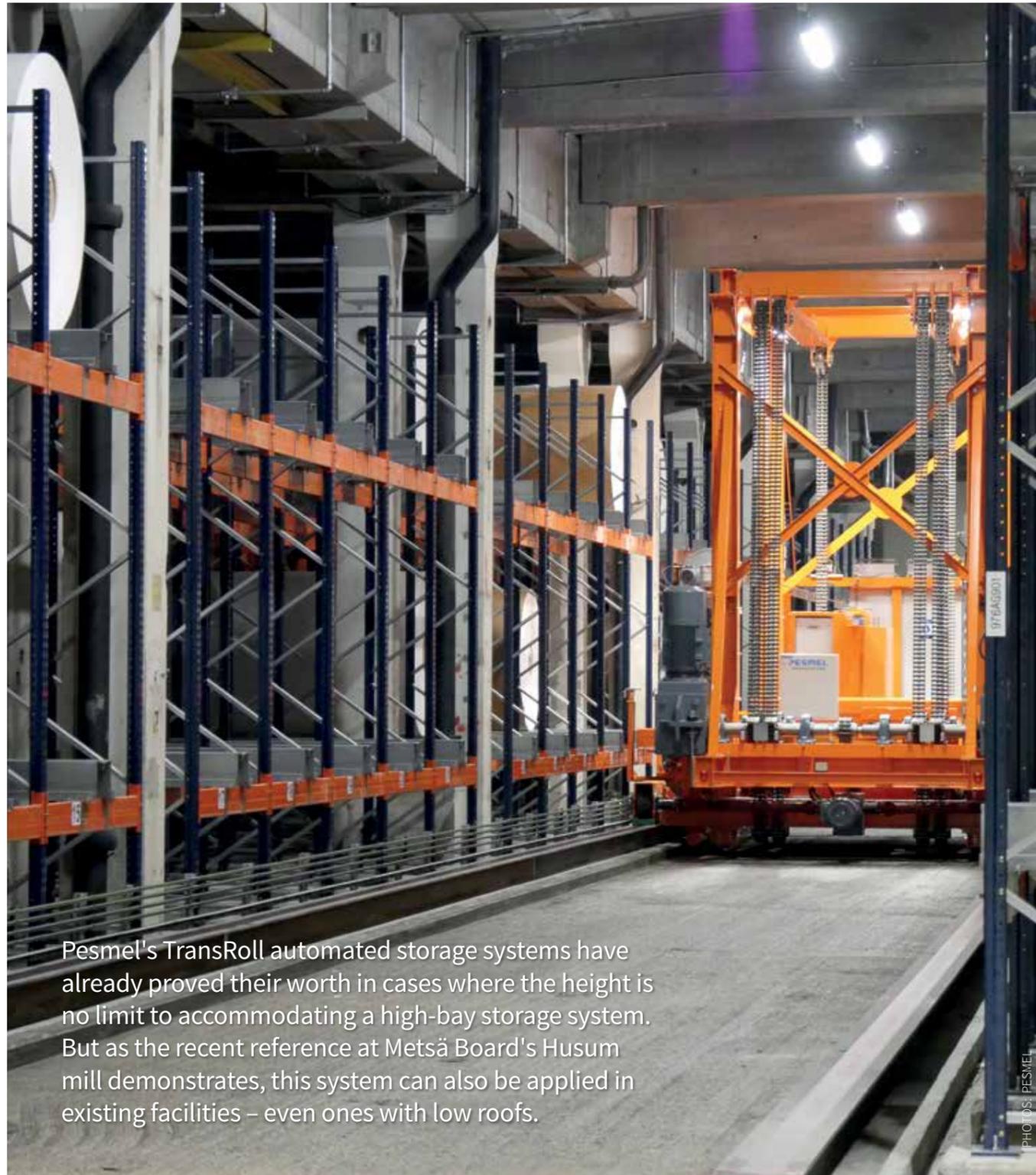


Metsä Board's Husum mill demonstrates TransRoll concept's flexibility



Pesmel's TransRoll automated storage systems have already proved their worth in cases where the height is no limit to accommodating a high-bay storage system. But as the recent reference at Metsä Board's Husum mill demonstrates, this system can also be applied in existing facilities – even ones with low roofs.

PHOTOS: PESMEL

TransRoll concept's flexibility

Metsä Board is Europe's leading producer of premium paperboards, including folding boxboard, food service board and white kraftliner. Their products are used in the manufacture of consumer goods, retail-ready and food packaging. The company employs around 2,500 people and produces around 2 million tonnes of paperboard annually, with sales of EUR 1.7 billion. Metsä Board's Husum mill is an integrated board and pulp mill that produces 730,000 tonnes of bleached market pulp every year, as well as 400,000 tonnes of folding boxboard and 270,000 tonnes of kraftliner. The mill is located in the small village of Husum in eastern Sweden and is the main employer in the area, with 700 employees.

Reorganizing production at Husum

As part of Metsä Board's larger program to transform itself into a pure paperboard company, two paper machines at the Husum mill were shut down and replaced by a new state-of-the-art paperboard machine from Valmet in 2015–2016. One paper machine was converted to produce linerboard. After this, the mill has been producing 500,000 tonnes of paperboard a year on two production lines.

Along with this change, the existing fine paper sheet cutting operations also ceased, replaced by a new extrusion coating line. This change required intermediate roll storage (IRS) between the paperboard production lines and the extrusion coating line.

Extensive studies showed that the only practical area for this IRS was the old empty sheeting hall next to the new extruder line. The problem was the limited 6 m height of the ceiling this area, which would significantly limit storage volumes using the traditional method of stacking rolls on the floor. The available footprint was also too limited to allow the use of traditional clamp trucks or automatically guided vehicles (AGVs), because the access routes to allow these vehicles to clamp and lift large, seven-tonne paperboard rolls would take up almost half of the available footprint. Metsä Board's project team was in need of new ideas, so they contacted Pesmel.

Effective solution for limited space

Pesmel's proposed solution was based from the start on TransRoll, a concept that has been used successfully for a long time at converting plants for IRS needs. The standard TransRoll rack was scaled to fit the available height in this facility, which meant only two levels of TR channels for rolls with a maximum diameter of 1.8 meters. It also required asymmetric channel lengths (24 m and 17 m) with an aisle

between them for one stacker crane to make full use of the available footprint. In other words, the traditional stacks of rolls were changed for horizontal channels to fill the available shallow space optimally with rolls from wall to wall and floor to ceiling. The storage volume was double what could be achieved with an AGV solution. The handling and sorting capacity was met with intelligent WMS control (a PC-controlled warehouse management system linked to MIS to keep the IRS inventory).

In the final solution, this modified TransRoll concept was able to fit 4,500 tonnes of paperboard into a 3,180 m² space with a height of only 6 m and a handling capacity of 300 tonnes an hour. Fire safety was ensured with sprinkler pipes pulled in to the rack on each of the two levels.

Another remarkable benefit of this concept was that it simplified the layout by minimizing the need for conveyor equipment to move rolls between the production lines, the new extruder and the central wrapping station, as the stacker crane handle this. •



The stacker crane moves rolls to buffer storage between the paperboard lines and the PE coating station.