

**90% less energy consumption**

Unusual furniture factory in the middle of the forest gives new meaning to the term “sustainability”

**ThePlus**

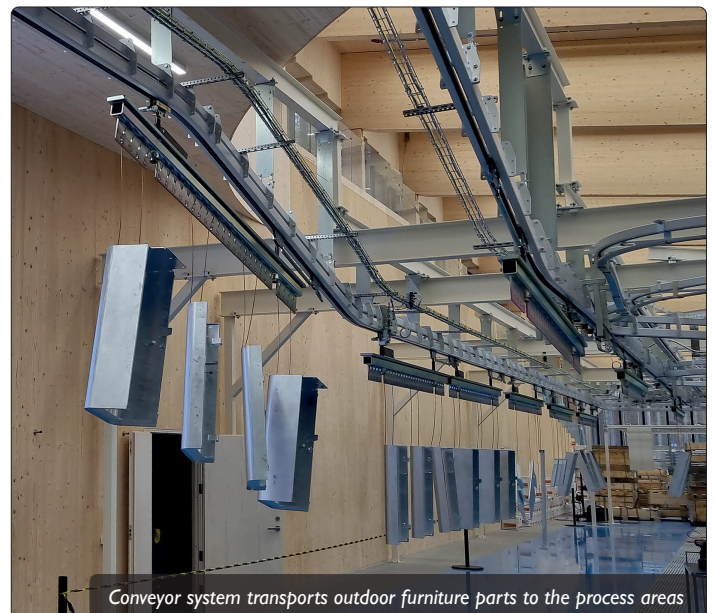
**BIG**  
BJARKE INGELS GROUP

Norwegian outdoor furniture manufacturer VESTRE AS has set a milestone in sustainable production with its PLUS factory. This includes highly efficient surface technology with an 800 metre long Power & Free conveyor system.

What do a Danish star architect, a furniture manufacturer and CALDAN have in common? The short answer is sustainability. In June 2022, Norwegian outdoor furniture manufacturer VESTRE opened what is probably the world's most environmentally friendly furniture factory - The PLUS. The factory is the largest investment in the Norwegian furniture industry for decades, and takes its name from its shape, which clearly resembles a “+” from above. It was designed by world-renowned architectural firm Bjarke Ingels Group (BIG), which also designed Google's headquarters.

The factory is literally in the middle of the forest, and the green roof is covered with natural forest vegetation. 1,200 solar panels supply the building with energy, and despite the high northern latitude, 250,000 kilowatt-hours of energy are expected per year. In addition, the building has been designed to be highly energy efficient, with optimal insulation, and surplus heat from production is recovered and used through cold and heat storage systems and heat pumps.

As a result, The PLUS has the potential to become the first project of its kind in the world to achieve the highest BREEAM environmental rating: “Outstanding. BREEAM is the world's leading science-based validation and certification system for sustainable buildings. The building uses 60 per cent less energy and emits 55 per cent fewer greenhouse gases than comparable conventional factories. When the production facilities are included in the equation, The PLUS' energy consumption is reduced by 90 percent.

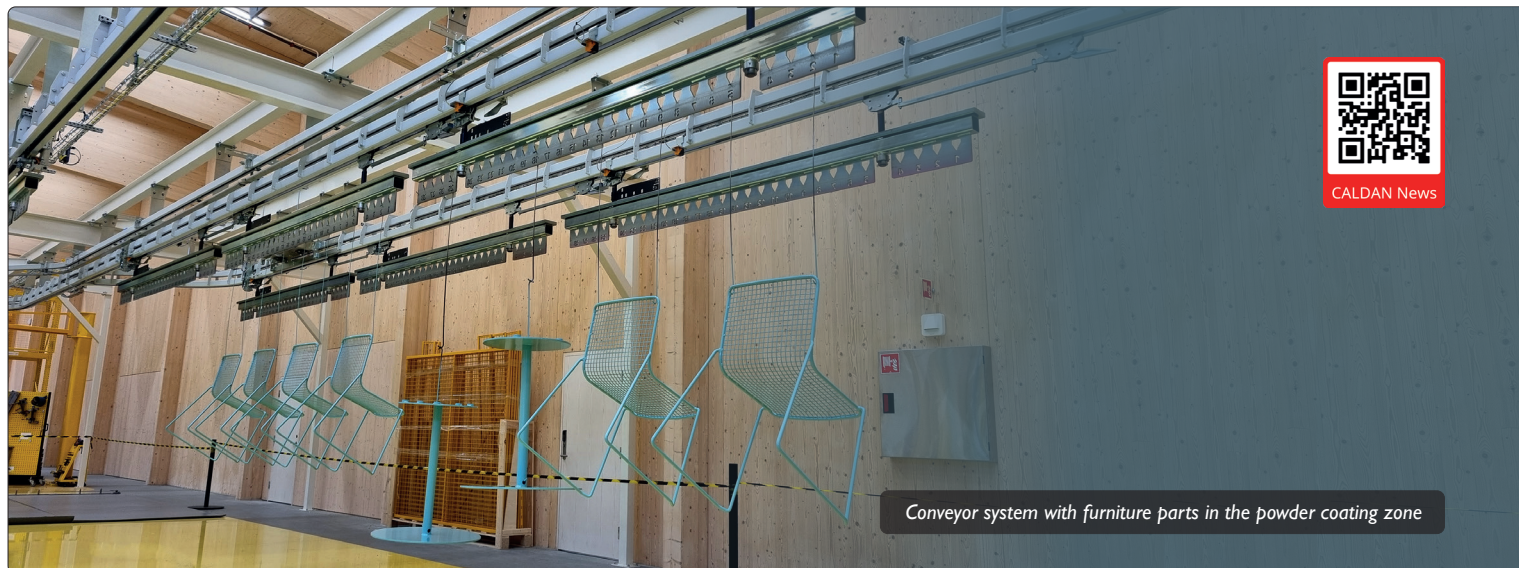


Conveyor system transports outdoor furniture parts to the process areas



Conveyor system with furniture parts in the powder coating zone





CALDAN News

Conveyor system with furniture parts in the powder coating zone

#### Four production zones

At VESTRE, the four production zones - surface treatment, wood production, assembly and shipping - are arranged around a central courtyard. This geometry ensures an open and efficient work flow. From the central courtyard, which is surrounded by glass on all sides, there is an unobstructed 360° view of all production departments. This and many other features set The PLUS apart from conventional furniture factories. For example, the plywood beams and generous use of windows in the exterior walls, with a direct view of the forest, create a feel-good ambience not previously seen in a production facility. In addition, there are no pipes or cables to be seen; everything is concealed.

#### Overhead conveyor links production departments

Past the central courtyard, a CALDAN P&F400 overhead conveyor transports the steel parts for the furniture to an automated surface treatment line designed and supplied by Swedish company Greiff Industrimiljö AB. Inside the plant, the 800 metre Power & Free conveyor system moves the parts in sequence through pre-treatment, an adhesive water dryer, a cooling zone, the powder coating booth and finally the curing oven.

The system consists of 65 trolleys, each with a load capacity of 500 kilograms. With a cycle time of four minutes for transport and treatment, it enables a throughput of 15 trolleys per hour.

Christian Calundan, Sales Manager Scandinavia, explains: "We are delighted to have been selected as the conveyor supplier for such a visionary project. The PLUS project clearly shows that sustainability and highly efficient production are compatible, and we expect the industry to move in this direction in the future". Project Manager Marcus Henningsson adds: "I have visited PLUS several times, during the installation of the system and after the project was completed.



Conveyor system with furniture parts the in drying zone

It is by far the most impressive production facility I have ever seen, both in terms of the conveyor and the installation site! The fact that it is also a very climate-friendly solution makes it a project you can be really proud of!