

Energy use in cabinet production reduced by 50%



Woodland Horizon Ltd. expanded its production facility in Drayton, Ontario in 2023. Sustainable and energy-efficient production was of the utmost importance for the manufacturer of high-quality kitchen and bathroom furnishings when they began planning a major upgrade of their dust collection system.

Woodland Horizon has implemented a lot of automation, including an MES system to schedule production, capacity planning, track and sort parts in production and manage shipping and inventory. Using state-of-the-art CNC routers, robotic material handling, robotic sanding, edgebanding machines and automatic spray machines, the company manufactures custom cabinetry for the North American market.

To ensure the highest product quality and protect employees' health, a reliable dust and chip extraction system was a priority.

Taurus Craco Machinery of Brampton, Ontario has been working with Woodland Horizon for many years and assisted with planning the new dust collection system. Kyle Roseneck, project manager with Taurus Craco, worked closely with Woodland Horizon to develop an innovative extraction solution. Electricity and heating costs were reduced by more than 50% compared to the use of conventional technology, machine downtime is minimized and the disposal processes have been automated. In addition to cleaning the air in the plant, the system also conserves resources and reduces costs for a competitive advantage.

Höcker Polytechnik disposal for dust and chips.

Taurus Craco and Höcker Polytechnik GmbH, Germany have been partners for many years. Höcker is a leading European manufacturer of extraction and filter systems, dedusters, sanding dust extraction, pneumatic conveyor technology, products for surface technology and much more for wood processing, furniture production and many other industries. A particular strength is the

combination of all the individual components using sophisticated control technology to create powerful complete solutions.

Woodland Horizon opted for a powerful MultiStar filter system that extracts at all production machines. The Höcker filter works outside the factory and requires just 900 sq. ft. of space. The four powerful fans used with 37 kW motors are frequency-controlled and work in sequence so that the performance can be continuously adapted to the activities in production. This means that only the absolutely necessary performance is provided.

MultiStar filter system works economically under negative pressure!

Suction under negative pressure is the most energy-efficient type of suction and places particularly high demands on system planning. Taurus Craco and Höcker Polytechnik have decades of experience and designed customized pipe routing for Woodland. The filter bags are continuously cleaned using purge air. This process works very quietly, protects the filter material and reduces the energy used for ventilation. The dust and chips are discharged and a rotary valve transports the material to a container.

Thermal energy is retained and heating costs are reduced

The extracted air also contains valuable heat energy, which is recovered at Woodland. The filtration process in the MultiStar extraction system works efficiently and returns cleaned air retaining up to 75% of the heat energy, which results in significant energy savings.

The design principle of the MultiStar filter systems has been tested for pressure shock resistance and the rotary valves are NFPA compliant. In addition, safety mechanisms such as fire dampers and a filter monitor were implemented in the return air.

The entire system is monitored by a control system designed to ensure all extraction and conveying processes

run as efficiently as possible. In addition, an energy monitoring system with a status overview was installed. Woodland Horizon can keep an eye on the system status via the web 24/7. That means they can react quickly to avoid downtime.

Uwe Rother, senior project manager at Höcker Polytechnik, accompanied the Taurus Craco project from planning to completion. For him, the Woodland Horizon project is an important reference project for cabinet production in Canada: "At Höcker Polytechnik, we take the needs of our customers very seriously at all times, from the planning phase through implementation and commissioning and continuous operation support once in operation."

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