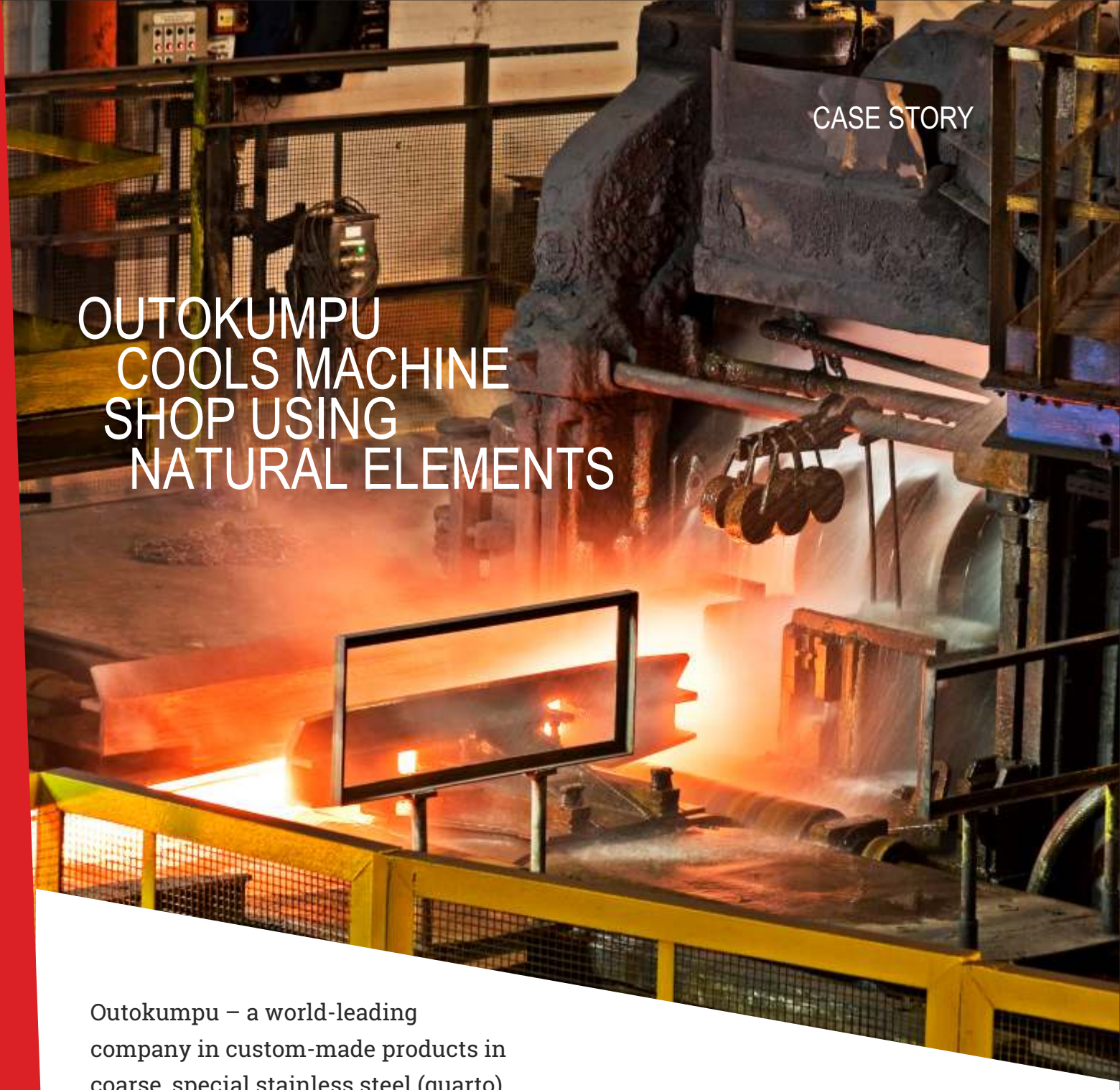
CASE STORY

OUTOKUMPU COOLS MACHINE SHOP USING NATURAL ELEMENTS



Outokumpu – a world-leading company in custom-made products in coarse, special stainless steel (quarto) – has invested heavily in its rolling mill in Degerfors, Sweden. Cooling the machine shop to enable it to provide the best service to the rolling mill is of crucial importance.

CHALLENGE_EFFICIENCY

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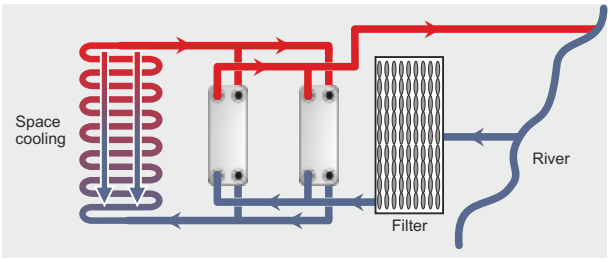
The investment will enable a 30% increase in the annual production of hot-rolled stainless steel plate, to a total of 155,000 tonnes. However, the investment increases not only the production capacity, but also the product's dimensional accuracy and performance.

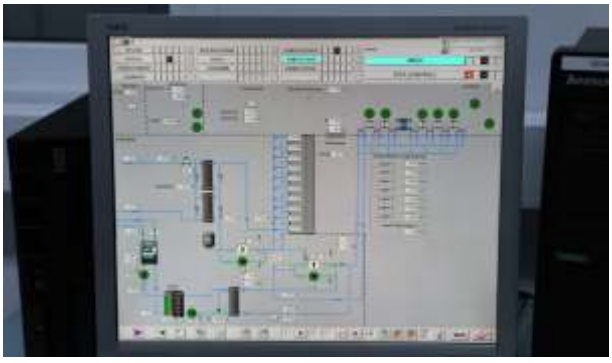
To cool the rolling mill's machine shop, Outokumpu has chosen a solution that saves energy compared with more conventional alternatives. There are two ways to cool the machine shop. One is to use outdoor air, the other to use industrial water from a nearby river and cool the air through existing cooling coils and a SWEP B649 brazed plate heat exchanger.

The plant is optimized for seasonal changes in order to constantly maintain the right temperature, while minimizing the energy consumption of the pumps.

Outokumpu's Peter Svedrin is project manager for the installation at Degerfors, and responsible for ensuring the quality of the cooling and ventilation in the machine shop.

"Unless the space is cooled, it may become too hot," he says. "There is an increased heating effect when more power is installed in the plant. The heat must be removed to prevent the equipment from ageing prematurely. This is why the temperature must be a consistent 24 degrees in the machine shop throughout the year."





SWEP's B649 is used to transfer cold from water drawn from the river out into the system via a loop.

The river water is used as an alternative to outdoor air. The air is cold enough in late autumn, winter, and early spring, but in summer the river offers an alternative. In November 2012, the heat exchanger only needed to use a fifth of its dimensioned effect. When the highest seasonal temperatures are reached, the BPHE helps to remove 1.2 MWh excess heat.

David Ingvarsson, Application Engineer at SWEP, is pleased that SWEP's heat exchangers are meeting the customer's demands for cooling equipment using river water.

"We are delighted to contribute to environmentally sustainable solutions. We offer a capacity that matches the space available in the machine room, and our product is vitally important to Outokumpu in this application. The heat exchanger's operational dependability is key to preventing costly downtime."

According to Svedrin, Outokumpu's choice of SWEP for this installation was based on a previous partnership, in which a 2007 feasibility study led to the successful installation of substations in 2008.

"The results of SWEP's delivery were positive in terms of design, technology, economy, and functionality," Svedrin says. "We had a teamwork that worked very well, and we had great support from SWEP. They delivered what they promised."

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