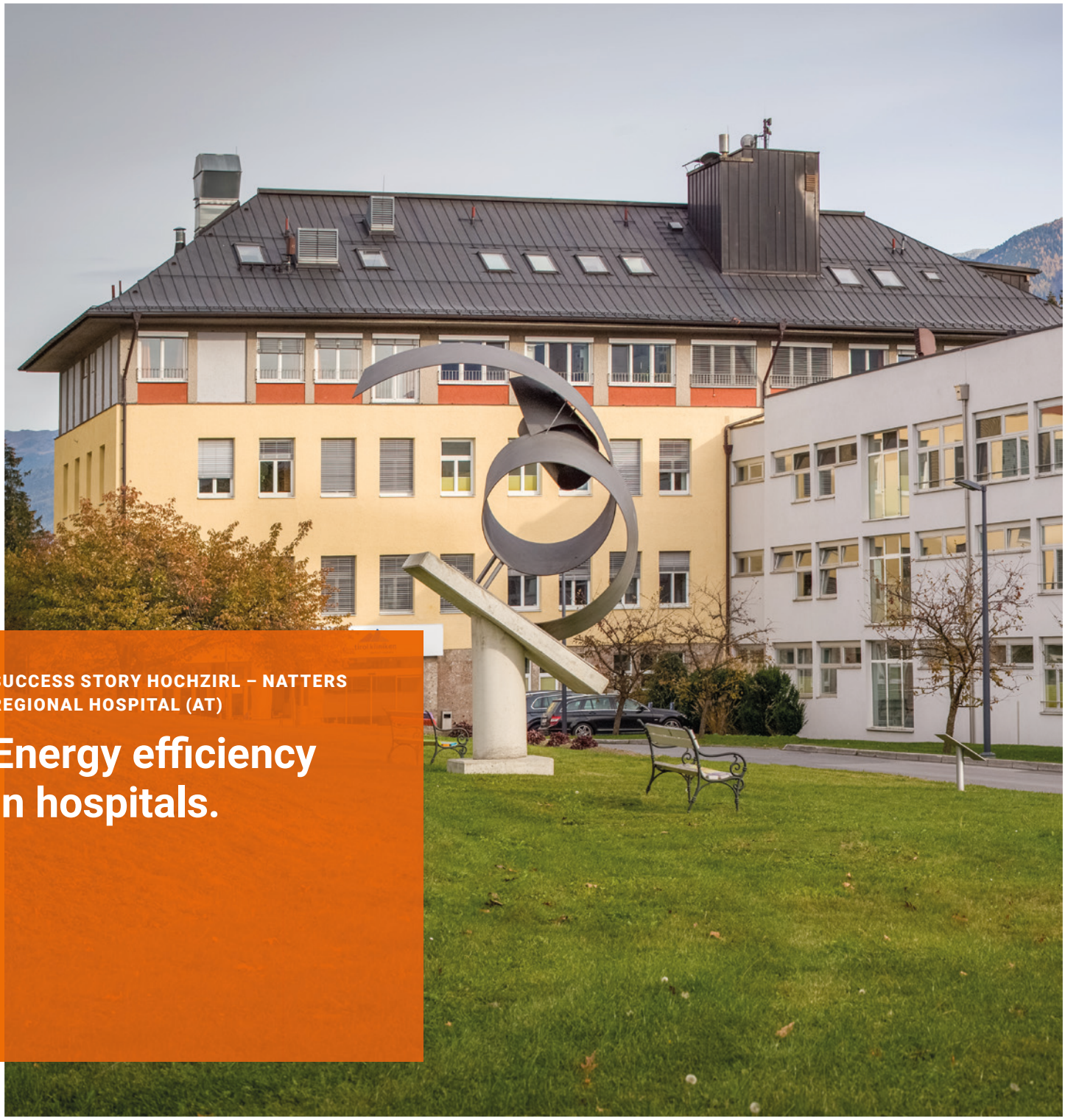


SUCCESS STORY HOCHZIRL – NATTERS REGIONAL HOSPITAL (AT)

Energy efficiency in hospitals.

Targeted energy data monitoring shows where and in what quantity the energy is going.

Tirol Kliniken GmbH is the largest and most versatile health company in western Austria. The company operates seven locations with more than seventy buildings of various ages and technical structures. The Klimabündnis Österreich partner company is determined to contribute to achieving the international climate goals in the best possible manner, thereby ensuring the quality of life of present and future generations.

In order to keep energy consumption and the resulting costs under control and to be able to initiate any necessary measures in good time, Tirol Kliniken GmbH places great importance on targeted energy-data monitoring and continuous meter reading. Knowing where and in what quantity the energy is going is essential for energy-efficient operation.

TYPE OF BUILDING
Hospital

PROJECT
Renovation

FACILITIES
Heating

PRODUCTS
Belimo Energy Valve™

BELIMO®

Energy management with changing building technology.

At Hochzirl - Natters Regional Hospital, located in Natters, a 35-year-old gas boiler was replaced with newly dimensioned condensing technology. The aim here was to improve plant efficiency to over 88%. Alternative energy sources for this location can only be made available to a limited extent.

Potential for optimisation.

Modern condensing boilers require a low heating water return temperature for maximum efficiency. As hydronic systems have developed over the decades, continuous hydronic balancing now offers great potential for optimisation. In such complex system structures, the "low delta T" syndrome (i.e. insufficient temperature spread between the supply and return) usually occurs, which impairs the performance of the entire system and leads to additional energy demand on the pumps and the generator.

For this reason, a decision was made to carry out the renovation in several steps. First, pumps, hydronic circuits and regulating devices were replaced, followed by state-of-the-art hydronic balancing as a second step. The boiler was replaced after optimisation of the heating water circulation rate and the delta T adaptation between the supply and return.

Transparency with the Belimo Energy Valve™.

For this application in the heating network, only the multifunctional Belimo Energy Valves™ are used. The Belimo Energy Valve™ is an all-in-one product consisting of a modern control valve and a web server with internal memory. Thanks to various monitoring functions, data from a period of up to 13 months can be recorded.

Heating distributor in the heating station.

'Modulating hydronic balancing ensures greater efficiency in heating systems and increased user satisfaction. As a public enterprise, we want to support the state climate strategy "Tirol 2050" and the federal government's "Mission 2030" with concrete measures and set an example for the country'.

Ing. Mag. (FH) Martin Lackner, Energy Controller, Tirol Kliniken GmbH

The pre-installed software in the Belimo Energy Valve™ makes energy optimisation quick and easy. By determining the maximum value of the valve position, the associated booster pump can be optimally operated at any time under any load condition. Recording actual data allows for optimum adjustment of water quantities and/or power capacities after only one heating period. This means that the greatest savings potential can be expected for thermal energy.

Know where the energy is going.

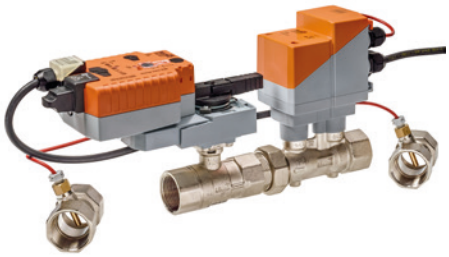
Tirol Kliniken GmbH use continuous data monitoring at all locations supported by energy management. At the Natters location, significant improvements have already been achieved in the low delta T range. After a running time of only about 10 months, an improvement in the temperature spread of the entire system from 10°C to over 20°C has been recorded. The aim is to achieve a delta T of at least 25°C in winter (maximum 35°C) and not below 20°C in summer, depending on the water heating systems.

Savings in heating energy.

Based on the data collected to date, there have been noticeable savings of around 330,000 kWh compared with the previous year – from the heating distributor conversions alone. This represents a 16% saving in heating energy, without considering the additional benefit of the new condensing boiler. Since data was only recorded by the Belimo Energy Valve™ during the first heating period, the maximum water quantities were able to be adjusted after the heating phase based on actual user behaviour at the Belimo Energy Valve™. Further savings without loss of comfort are expected over the next heating period.

The Belimo Energy Valve™ was deliberately chosen for this project because continuous data recording in accordance with ISO50001 and evaluation in accordance with ISO50006 are sought after. Moreover, the expected synergy effects from combining the meter and control valve were a decisive reason for the cooperation with Belimo. This expectation was fully confirmed in operation.

Evaluation of the recorded data to optimise delta T and the V_{max} value in the roof ventilation centre.



THE MULTIFUNCTIONAL BELIMO ENERGY VALVE™

enables pressure-independent flow control as well as transparent monitoring of the heating or cooling system, ensuring that it is not operated with too low a temperature spread (delta T). By measuring, calculating and visualising important system data and with the performance reports provided by Belimo, energy-efficient system operation is guaranteed for the entire service life. The Belimo Energy Valve™ can be connected to the Belimo Cloud, providing easy access to data and reports – anytime, anywhere.

All inclusive.

Belimo is the global market leader in the development, production, and sales of field devices for the energy-efficient control of heating, ventilation and air-conditioning systems. The focus of our core business is on damper actuators, control valves, sensors and meters.

Always focusing on customer value, we deliver more than only products. We offer you the complete product range for the regulation and control of HVAC systems from a single source. At the same time, we rely on tested Swiss quality with a five-year warranty. Our worldwide representatives in over 80 countries guarantee short delivery times and comprehensive support through the entire product life. Belimo does indeed include everything.

The "small" Belimo devices have a big impact on comfort, energy efficiency, safety, installation and maintenance.

In short: Small devices, big impact.

- 5-year warranty
- On site around the globe
- Complete product range
- Tested quality
- Short delivery times
- Comprehensive support

EN – 05.2020 – Subject to technical modifications

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