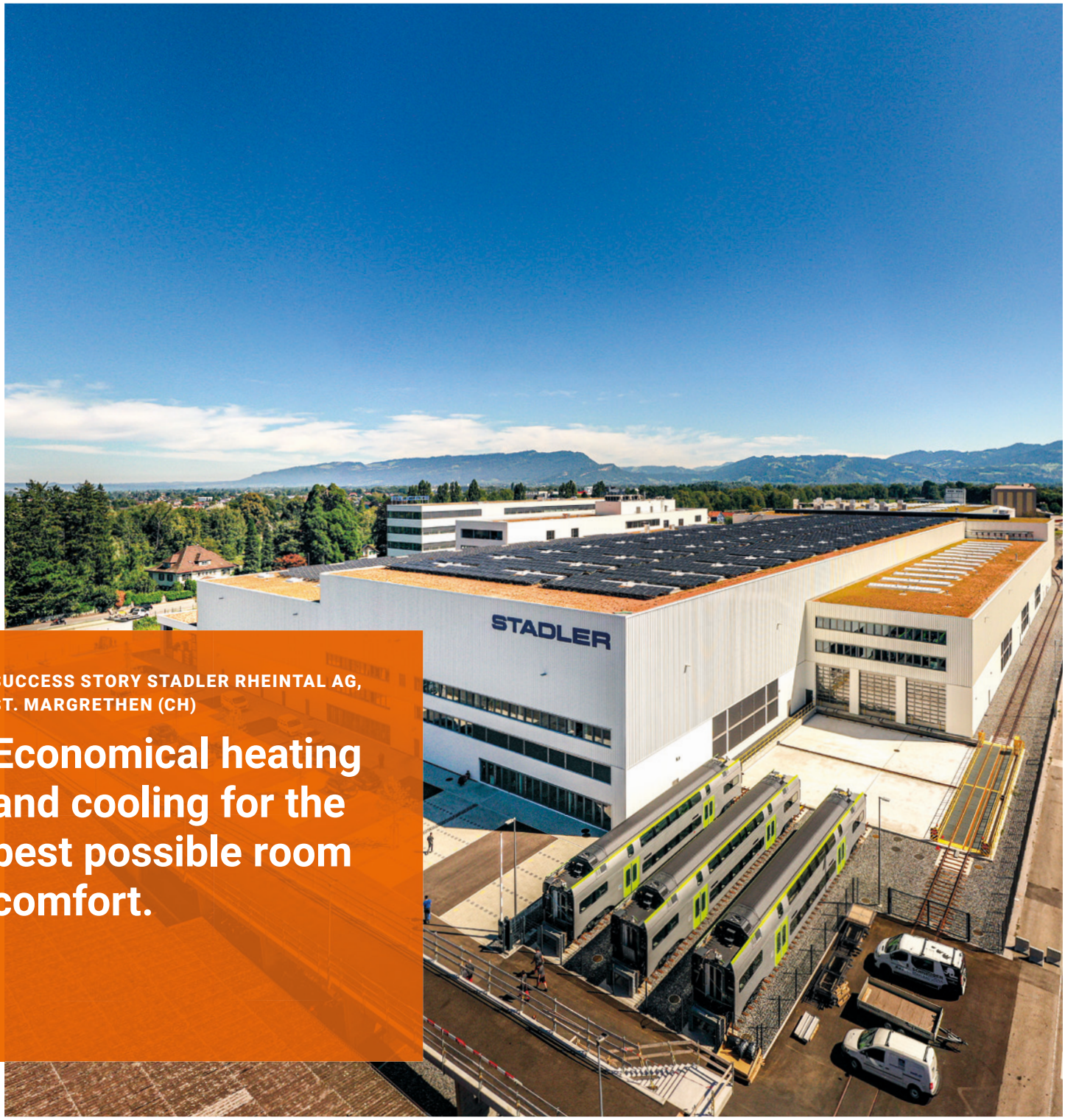

SUCCESS STORY STADLER RHEINTAL AG, ST. MARGRETHEN (CH)

Economical heating and cooling for the best possible room comfort.

New location in the tri-border region strengthens the efficiency and competitiveness of the Stadler Group.

After more than 20 years in Altenrhein, in 2020 Stadler moved to a newly built factory and competence centre for double-decker multiple unit trains in St. Margrethen. On an area of around 35,000 square meters, nearly 850 employees develop, manufacture and assemble trains, trams, rolling stock and passenger carriages for the Swiss and international markets. In an additional 5,000 square meters of office space, around 500 employees carry out development work and support Stadler throughout the company in the areas of calculations and approvals.

During the construction of the new production site in the tri-border region Austria, Germany, Switzerland under the project developer and general contractor HRS Real Estate AG, special attention was paid to sustainability: 22,000 square meters of the roof were greened and equipped with 6,000 square meters of solar panels, which cover a quarter of the electricity consumption at the St. Margrethen site.

TYPE OF BUILDING
Industrial and office buildings

PROJECT
New building

FACILITIES
Heating, cooling, ventilation, BACS

PRODUCTS
Electronic pressure-independent characterised control valves EPIV, 6-way zone valves, damper actuators, various sensors

BELIMO®

Measuring, controlling, balancing and shutting off – even at high installation heights.

Lippuner Energie- und Metallbautechnik AG carried out the planning and installation of the heating, ventilation and air-conditioning systems and BACS (Building Automation and Control System) in the production halls and in the office area. "The very tight schedule, staging and installation heights of up to 20 meters were among the greatest challenges of this project", emphasises Engineer and responsible Project Manager Jeremias Meier. "Within just one year, we assembled all components and commissioned the plants on 30 March 2020. Due to the tight time schedule, we had to partly carry out installations even before the roof was built".

Distribution of heat and cold segmented into four groups.

All important facilities for heat and cold production are located close to the social area. The entire factory area is supplied from there. The control centre for heat and cold generation with two gas boilers, two chillers and three heat exchangers is located on the roof. Intermediate storage for utilisation of the waste heat from compressed air provision reduces energy consumption.

Energy distribution is divided into the "administration building group", where cooling and heating ceiling sails ensure a pleasant room climate, the "social area group" is equipped with radiators, the "TABS group" for storage and the final assembly halls (TABS is an energy-efficient system solution for heating and cooling buildings of all kinds) and the "district heating group" for the production halls, through which the office buildings equipped with radiators are supplied.

Belimo electronic pressure-independent valve technology optimises the control of systems with variable air volume and ensures maximum energy savings.

"The overall robustness of the products, short delivery times and comprehensive support are impressive characteristics of Belimo. These are particularly important if assembly and installation must be carried out early on in the construction process. In addition, all Belimo products come with a 5-year guarantee, without any discussion"

Jeremias Meier, Engineer and Team Leader for Air-Conditioning Technology at Lippuner Energie- und Metallbautechnik AG, Grabs

Radiant cooling and heating ceiling sails equipped with 6-way zone valves from Belimo.

In the administration building, a total of 216 cooling and heating ceiling sails, equipped with the proven and versatile Belimo 6-way zone valves, ensure a healthy room climate over four floors and eight corridors. These modules were prefabricated at Lippuner and only needed to be connected.

The cooling is distributed via chilled ceilings and ventilation systems. Long-distance lines supply air-conditioned storage and electrical rooms in the production halls. Part of the cooling energy is used to cool the air compressors.

The waste heat from compressed air generation is fed into storage, where it is used to heat the heating and domestic hot water. Alternatively, heat exchangers for free cooling are used to cool the air compressors. In summer, when outside temperatures are high, cooling down the last two Kelvin is achieved by a chiller. Chilled water with a temperature below 30°C must be ensured when entering the air compressors.

Simple and seamless integration of EPIV into higher-level building automation systems.

Certain components, for example valve groups for the administration building and fastenings for the long-distance pipelines in the halls, were pre-produced by Lippuner.

Distribution of district heating to the radiators in the office units of the production halls is carried out via various subgroups, equipped with Belimo EPIV electronic pressure-independent characterised control valves. It is not necessary to be on site to adjust the EPIVs, which is a particular advantage with regards to the high installation heights and poorly accessible locations. The EPIVs are integrated into the control technology of the management system via Modbus and provide feedback on the volumetric flow and all important operating parameters. Thanks to their innovative technology, EPIVs guarantee ideal operation at all times, even in the lowest partial load range. This considerably simplifies hydronic balancing and thus enables optimum and targeted energy and cost management.

Tight-closing Belimo open/close butterfly valves in the cooling and heating station.

Air handling unit equipped with sensors, damper actuators and electronic pressure-independent characterised control valve EPIV from Belimo.

IMPRESSIVE ADVANTAGES OF THE EPIV

- Measuring, controlling, balancing and shutting off in one ready-to-install unit.
- Flexibility in planning and later conversion.
- Fast and simple commissioning.
- Simple hydronic balancing.
- Excellent control stability and quality.
- High operating safety.
- No leakage thanks to the air-bubble tight characterised control valve (leakage rate A in accordance with EN12266-1).
- Reduced energy consumption saves costs.
- Nominal diameters DN 15 to DN 150.

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

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