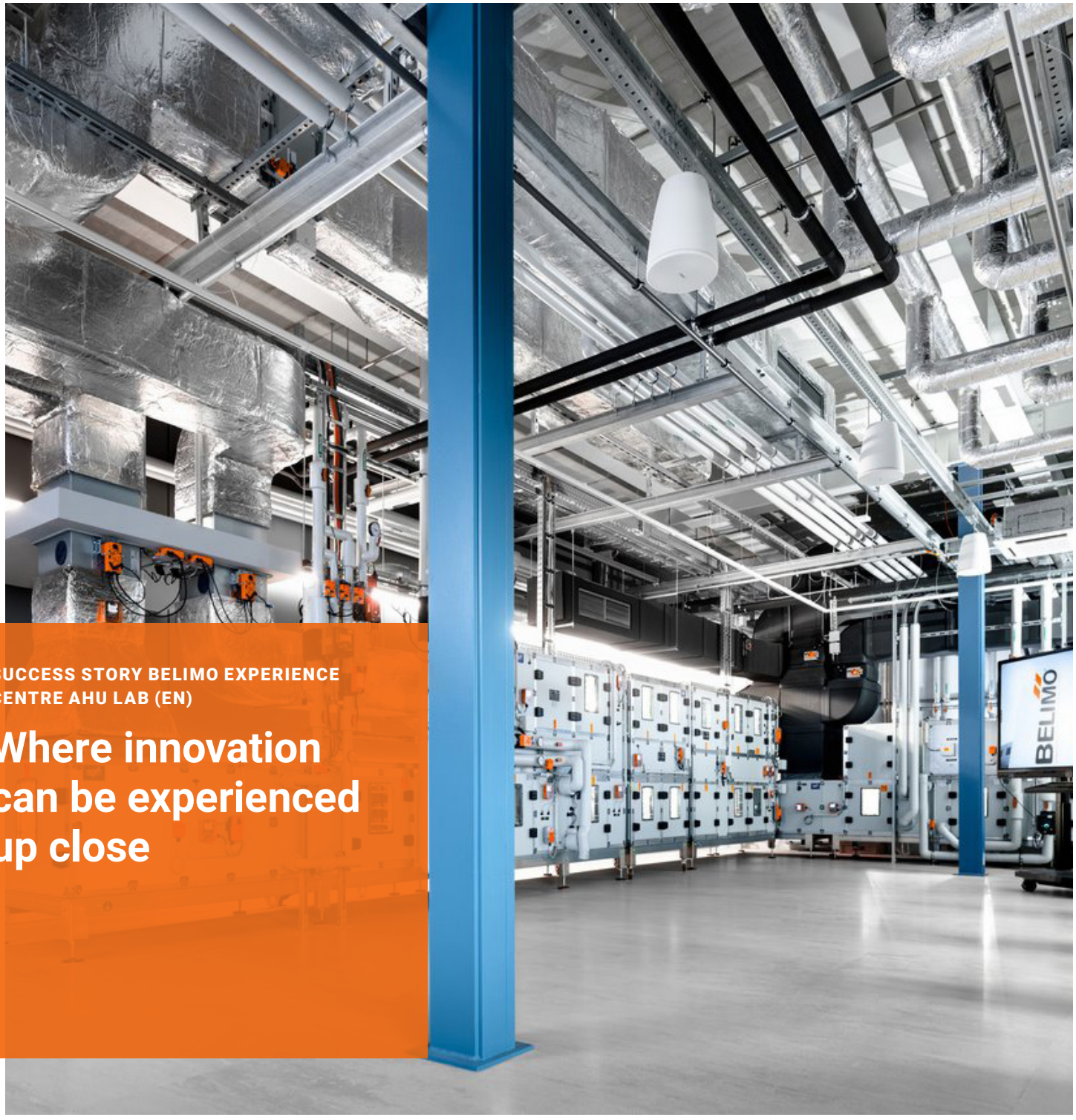

SUCCESS STORY BELIMO EXPERIENCE CENTRE AHU LAB (EN)

Where innovation can be experienced up close

State-of-the-art training facilities for the building technology of the future

The new Belimo Experience Center in Großröhrsdorf (Germany) was opened on 8 May 2025. System integrators, specialist planners for building technology, original equipment manufacturers (OEMs) and educational institutions are able to gain practical insights into the functionality of air handling units (AHUs) and their individual components in the associated AHU Lab. With this new facility, Belimo is expanding its training programme to include ventilation applications. The first Belimo Experience Center, which focuses on water applications, was opened at the headquarters in Hinwil, Switzerland, back in 2018.

The project was planned by EliteBuildingArchiTec Germany (EBAT Germany) and realised by Stolle Industries.

BUILDING TYPE
Training centre

PROJECT
New Building

TRADES
Building automation

PRODUCTS
Application-specific actuators, control valves, and sensors

BELIMO

Customer value in focus

The AHU Lab covers an area of 200 m² and provides a comprehensive insight into a self-contained ventilation and air conditioning system. It illustrates the interaction between AHUs and the rooms or zones of a building under varying outdoor air and load conditions. Special attention is paid to the functionality of Belimo field devices and their connectivity as central components of the ventilation and air conditioning system. Specialised training modules were developed specifically for the AHU Lab.

A unique construction

The AHU Lab consists of three fully-fledged air handling units and three application-specific room zones. This closed system can be flexibly adjusted so that different operating states can be simulated and tested.

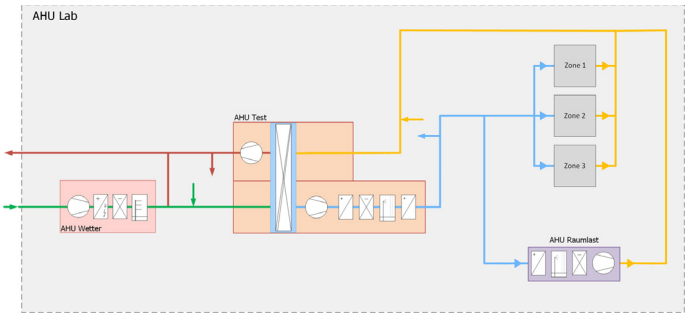

Diagram of the AHU Lab.

The centrepiece of the system is the “AHU Test”.

The centrepiece of the system is the “AHU Test”. It shows how healthy indoor air can be ensured through heating, cooling, humidification, and dehumidification. In addition, various heat recovery systems (HRS units) can be demonstrated due to their modular design. Specific system states, such as HRS icing, filter contamination, or pressure and temperature fluctuations in the hydronic system of heat exchangers, can also be simulated.

The “AHU Weather” system enables different outdoor air conditions that affect the “AHU Test” system to be simulated throughout the year. Winter and summer conditions are possible, e.g. -5°C / 95% relative humidity or 35°C / 55% relative humidity.

The “AHU thermal load” system is used to simulate thermal loads, such as those caused by people or devices in buildings, which influence heat and humidity. These simulated loads are provided for the “AHU Test” system on the exhaust side.

The “AHU Weather” system simulates various outdoor air conditions.

The AHU Lab also comprises three room zones, which are used to demonstrate how variable volumetric flow controllers can be used in a targeted manner to ensure optimum room comfort and increase energy efficiency at the same time.

Walk-through zones in the AHU Lab make it possible to experience the mechanisms of heating, ventilation, and cooling up close.

Complex applications reliably implemented

"The complexity of the system required detailed planning," explains Markus Häring, Consulting Engineer for Building Automation at EBAT Germany. "Over 100 Belimo field devices were installed in this ventilation and air conditioning system. Despite the large area, we had to deal with a high installation density. In addition, the AHU Lab had to be integrated into the existing building supply system, and a total of four bus protocols were used," he explains.

A special operating system was implemented for user-friendly visualisation. Furthermore, the implementation of the refrigeration system presented a particular technical challenge due to the extreme temperatures of -8°C that had to be generated. "All in all, it was a demanding project that required the utmost precision. We achieved this goal," summarises Markus Häring.

"For Belimo, it was particularly important that the system integrator understood and implemented our requirements for a user-friendly and easy-to-use system visualisation," said Oliver Topf, Senior Team Leader AHU at Belimo. "In order to be able to simulate a variety of combinations of scenarios during customer training sessions, it was extremely important to be able to switch the complex systems into different operating modes. Thanks to the precise planning by EBAT Germany and the reliable implementation by Stolle Industries, we are able to address a wide variety of customer needs in the AHU Lab and respond precisely to any problems they may have," he adds.

Specific use cases can be customised and demonstrated in individual training sessions.

Visitors can experience the effects of heating, ventilation, and cooling at the Großröhrsdorf site for themselves and learn how intelligent field devices contribute to excellent indoor air quality while ensuring energy-efficient operation. Stolle Industries also plans to offer its own customer training courses in the AHU Lab: "We would particularly like to familiarise our customers from the hospital sector with the mechanisms of action that can be experienced in the AHU Lab," says Marcel Schütze, Project Manager at Stolle Industries. "We are convinced that, together with Belimo, we will achieve a great deal."

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, and 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 – 02.2025 – Subject to technical modifications

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