

Buildings
Simply Made
Better

aedifion



More Sustainability in the University Complex

Case Study: Lecture Hall Building PPS, Aachen

Space: 4 320 m² | Year built: 2012 | Building type: University | Client: RWTH Aachen University

With the RWTH Aachen University, Aachen is one of Germany's largest university and research locations. The diversity of buildings—from research facilities to teaching buildings—presents building management with complex challenges, but also offers significant potential for CO₂ reduction. The PPS lecture hall building was the first RWTH building to be connected to the aedifion platform in order to efficiently optimize operations together with building management.



8 470 €

annual operating cost savings
(1.96 €/m²/a)



107 MWh

annual energy savings
(24.7 kWh/m²/a)



14 t CO₂

annual avoided emissions
(3.3 kg /m²/a)

Starting Situation and Objectives

Built in 2012, the PPS lecture hall center on Königshügel serves RWTH Aachen as a modern teaching and learning center with lecture halls, seminar rooms, and computer rooms. It is supplied in a climate-friendly manner via RWTH's district heating and cooling system. To make operations more sustainable as well, the university sought a data-based solution for identifying and prioritizing optimization potential. With the aedifion cloud, building management now uses a digital tool for efficient and sustainable operational optimization.

Project Implementation

1. Immediate Connectivity

The aedifion cloud platform enabled fast and straightforward data availability. The preconfigured edge device allowed plug-and-play installation in just a few minutes, making all relevant building data immediately available in the cloud. Redundant security mechanisms and the integration of PPS via a separate Virtual Local Area Network (VLAN) ensure the highest level of data security—a clear advantage, especially in the sensitive university network.

2. Continuous Full-Service Optimization

To quickly relieve the operator team, aedifion was commissioned with the full-service solution aedifion.elevate: Engineers created digital twins, conducted data-based analysis, and prioritized optimization measures together with building operations. The very first measure—adjusting the temperature control sequence of an HVAC system—reduced energy consumption by 11.05 % and CO₂ emissions by 8.5 % compared to the previous year (approximately 14.4 t per year).

Conclusion and Outlook

The project was a complete success for RWTH Aachen. The digitalized operational optimization of the PPS lecture hall building demonstrated that CO₂ emissions can be reduced while simultaneously achieving economic benefits. A positive cash flow was achieved as early as the fourth month through the identified savings. Despite its relatively small size with around 1 200 data points, the building has since made a noticeable contribution to the university's sustainability goals. While still in the aedifion.elevate phase, the Super C and Couven-Gymnasium buildings were also connected to the cloud, with optimization support already initiated for Super C, achieving additional savings.

Customer Feedback

"As one of Germany's largest university locations, RWTH has high energy demand. Both building management and energy management benefit from the data and insights gained from the aedifion cloud platform. The simple plug-and-play connection and rapid identification of optimization potential are groundbreaking for me."



Mario Hillebrand
Energy Manager