

Buildings  
Simply Made  
Better

aedifion



# Sustainable Value Creation Through Digital Operational Optimization

## Case Study: L'Unico, Luxembourg

Usable floor area: 9 108 m<sup>2</sup> | Year built: 2007 | Building type: Office building |

Owner: Union Investment

The office property L'Unico, located in the heart of Luxembourg's Kirchberg business district, offers modern workspaces in a prime strategic location. The owner, Union Investment, consistently pursues a strategy of sustainable investment solutions and digital innovation to create long-term value and future-proof its buildings. To this end, a comprehensive technical operational optimization was implemented using the aedifion cloud platform, focusing equally on energy efficiency, economic performance, and user comfort.



# 23 %

reduction in operating costs\*  
(35 600 € annual operation cost savings)



# 23 %

reduction in energy consumption\*  
(205 MWh annual energy savings)



# 27 %

reduction in CO<sub>2</sub> emissions\*  
(44 t annual avoided emissions)

\* Values based on annual projections, in relation to actual annual consumption data from 2023.

## Starting Situation and Objectives

aedifion was commissioned to use its AI-based software to assess the building's operational condition in a transparent and energy-efficient manner. The goal was to systematically identify and sustainably eliminate inefficiencies without compromising the comfort of the users who work in the building every day.

## Project Implementation

### 1. Connectivity and Data Foundation

After commissioning in March 2024, the aedifion cloud platform was connected to the building automation system via plug-and-play. Approximately 1 000 data points from the technical building equipment (TBE) were captured and structured into digital twins.

### 2. AI-Based Analysis and Optimization

Within the first few weeks after project start, the AI-based analysis identified acute malfunctions that were immediately corrected. Examples include:

- **Chillers:** Correction of faulty sensor data to ensure efficient and trouble-free operation
- **Heating systems:** Ensuring complete valve closure to avoid unnecessary energy losses
- **Cooling ceilings:** Fine-tuning of oscillating control circuits to prevent wear

Building on these immediate measures, further optimizations were implemented to sustainably improve building operations. Examples include:

- **Air-handling systems:** Adjustment of office ventilation schedules for demand-oriented operation

- **Heating systems:** Correction of outdoor temperature threshold values and implementation of predictive, autonomous control based on weather forecasts to maximize energy efficiency while maintaining user comfort

## Conclusion and Outlook

Through this two-stage approach, from short-term troubleshooting to long-term optimization, the building's full savings potential was systematically unlocked. The next step will be the integration of room automation to enable even more precise analyses through detailed data collection and to identify additional optimization opportunities.

## Customer Feedback

*"The increasing demands on energy efficiency and user comfort pose major challenges. With aedifion, we have found a partner that helps us tackle these complex tasks digitally. In a short time, we achieved measurable improvements – an important step toward securing the future viability of our properties."*

**Dennis Hohmann**

Project Director Building Systems | Union Investment