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**Property**  
Tax Office HQ Aachen

**Customer**  
BLB NRW (Building & Real Estate Management NRW)

**City**  
Aachen

**Service**  
Optimized climate control with MeteoViva Climate

**Area**  
328,299 sq ft

**Technology**  
District heating, ventilation systems, sun shading

19 zones, 163 data points

**Savings**  
17 percent

## Clever Management Data Aids Public Budget

Bau- und Liegenschaftsbetrieb Nordrhein-Westfalen (BLB NRW – Building & Real Estate Management NRW) owns nearly every public property in Germany’s most populous state. As the operator and land manager of 4,250 properties, it has to overcome a difficult conundrum: On the one hand, it is tasked with optimizing the energy efficiency of new buildings and renovations. At the same time, the measures should bring relief to the state’s budget. With MeteoViva Climate, BLB NRW has found a simple way to targetedly save on energy while avoiding high investment costs.

### The Project

With the aim of minimizing risk to operating costs, BLB NRW has been using MeteoViva Climate since 2008 as part of a pilot program sponsored by the Federal Ministry of Economics. One of the three buildings selected for the pilot was the tax office headquarters in Aachen. The building, which houses the five tax offices responsible for Aachen and the surrounding areas, was built in 2006. It is equipped with energy-efficient building technology such as concrete core tempering (CCT), heat radiators, floor heating, ventilation and A/C systems as well as the world’s first double-sided photovoltaic (solar) plant.



*„MeteoViva Climate has proven to be a simple and efficient solution for managing buildings according to need without additionally burdening the budget.“*

**Ulrich Weyhofen, Project Head  
Facility Management at BLB NRW**



## The Assignment

The tax office headquarters in Aachen are characterized by wood, concrete and glass. The heat storage capacities of the building's 12 concrete elements are used to control the temperature of the offices. The installed CCT is set to take on about 70 percent of the heating load. The rest is provided by the heating radiators with static heating circuits. Additionally, two entryways, the library and the conference rooms are supplied with warmth via floor heating. Finally, some ventilation and A/C systems are responsible for special-purpose rooms such as the kitchen or archive.

## Implementation

In order to be able to compensate for weather dynamics with the more responsive heaters, the focus was on optimizing operation of the CCT. The control system was already attempting to manage indoor climate according to outside temperature information and a 24h time program. But this was not effective due to the 20 centimeter thick concrete ceilings, which had long latency times of two to three days. The advantage of MeteoViva Climate is that the technology considers every component of the HVAC system individually and can prioritize them as well. At the tax office headquarters, the intelligent control now first exhausts the potential of the CCT before additionally optimizing and activating the static heat radiators' individual heating circuits.

For the managers at BLB NRW, it was very important that one could maintain control over the building's „optimizations“ and remotely make adjustments if necessary.

## Conclusion

With the launch of MeteoViva Climate in February 2011, the room temperature in every office could be maintained at the desired level of 21 degrees Celsius during the core working hours for the first time. The climate in the building has been demonstrably improved. Employee complaints have decreased significantly compared with previous years according to BLB NRW. MeteoViva Climate also impressed in economic terms.

Neither the energy-efficient design of Aachen's tax office HQ, nor the installed control technology could prevent the weather-related fluctuation of energy needs or prevent the effect of weather on the indoor climate. The conventional heating controls guided by outdoor temperature sensors in particular caused problems. Depending on the weather, employees would often complain of room temperatures being either too hot or too cold.

This is made possible by the protected portal „My MeteoViva“. With this, the customer can monitor and control the various systems online. It also allows for the creation of individual climate profiles while also allowing users to view current room temperatures and energy consumption. Office management praised the transparency provided by being able to see the current temperatures in every building zone at a glance and at any time via the portal.

Another key point for the customer was avoiding the risk of a complete outage during the implementation phase. This is ensured by the fact that MeteoViva Climate does not physically intervene in the existing building management infrastructure, but rather is installed on top of them. Interruptions to operation and additional maintenance costs are thereby completely avoided.

The building's energy costs decreased by 17 percent (climate adjusted) in the first year of operation. And this, despite the fact that the building was already taking advantage of modern energy-saving measures. BLB NRW wants to continue using MeteoViva Climate and is looking to expand its use to other properties in NRW.