

Excellent indoor climate in Düsseldorf

A massive old construction connected to a ninety-meter-high glass building with a north-south orientation – resulting in very different climatic conditions in the GAP 15 office tower in Düsseldorf. Since 2020, a digital twin of the building has been ensuring a comfortable indoor climate on all floors and improving the life cycle assessment.

100 %

compliance
with desired indoor
climate

<2

years
investment
payback

260

tons CO₂
saved

Challenge

Reduce the CO₂ emissions of the property while ensuring a comfortable indoor climate for the tenants.

Solution

An intelligent zoning of the building combined with smart data achieved energy savings while maintaining a comfortable indoor climate on all floors.

“MeteoViva’s approach is very appealing. It helps us to better manage the energy consumption.”

Klaus Klaassen,
Technical Asset Management at
Deka Immobilien Investment GmbH

Case Study: Deka Immobilien Büroturm GAP 15, Düsseldorf

Efficiently heating and cooling a 24-story high-rise building with floor-to-ceiling glass elements while consistently maintaining the desired temperatures for all tenants? For MeteoViva this is an exciting challenge and not a major problem. The modern GAP 15 office tower is one of more than one hundred properties in Deka Immobilien's portfolio that will be equipped with the data-based technology.

Data model considers different weather conditions

In the elliptical building with a north-south orientation, the weather conditions on the upper floors are different from those on the ground floor. In addition, modern glass buildings tend to overheat or cool down quickly in the event of temperature fluctuations, unless appropriate countermeasures are taken early on. The digital building twin of the GAP 15 developed by MeteoViva takes precisely these effects into account. With the knowledge of weather changes, building physics and orientation of the building, the fully automated data model optimizes the operation of the heating, ventilation and air conditioning 24/7. In order to be able to control the system according to demand, the engineers divide the building into several climate zones and specify the desired room temperatures for each zone.

During operation, MeteoViva's optimization ensures that the building control system always activates the available heating, cooling and ventilation systems in the respective zones in the order that causes the lowest operating costs. A continuous monitoring of the space temperatures ensures that the desired indoor climate is maintained at all times.

Tenant structure

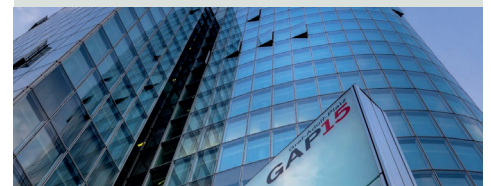
Most of the space in GAP 15 is used by the consulting and auditing firm EY for its Düsseldorf office. Other tenants include Luther Rechtsanwaltsgesellschaft mbH, Savills Immobilien Beratungs-GmbH and the law firm White & Case. The building complex also houses a restaurant.

Source: Wikipedia



"The monitoring reports are very helpful. They help me to uncover issues with the heating and cooling plants early on."

Klaus Klaassen,
Technical Asset Management
Deka Immobilien Investment GmbH



Building facts

Area: 43,722 m² / 470,619 sq ft

Type: 24-story office tower with 4-story low-rise building

Equipment: district heating, chillers and air handling units

Certification:
BREEAM-DE-Bestand (Very Good)

Customer

Deka Immobilien is the specialist for real estate investments within the Deka Group and is one of the largest globally active real estate fund companies in Germany.