

## CASE STUDY

### IWB CITYCENTER, BASEL



# Energy conversation thanks to weather forecasting and wireless technology

Optimal indoor climate with low energy costs - wishful thinking? Not for IWB CityCenter. Through the weather forecast control of your heating system, the IWB CityCenter saves up to 20% energy annually. Also thanks to the selected wireless system from merkur Funkssysteme AG. An overall solution that is not only worthwhile financially.

*April 2016, Chantal Colle, merkur Funkssysteme AG*

Best possible heating comfort, maximum energy efficiency and savings. The „integrated energy solutions development“ (IE) division for the IWB CityCenter (customer centre) pursued that vision and was looking for a fitting solution. Because the desired temperature wasn't always achieved in the rooms of the customer centre: here too warm, there too cold. The result: The potential of energy efficiency in buildings could not be fully exploited.

## The solution: Algorithm and radio

Innovative and sophisticated was the IE's answer to the increasing demand for intelligent energy management. Patrick Wellnitz, Head of Development of integrated energy solutions IWB, fell back on two innovative technics:

- New algorithm for intelligent weather forecast based control of heating systems with concrete core activation [TABS]

- Radio technology: for wireless measuring of the temperature and control of the control valves

### Forecast-based TABS control

Based on local weather forecast data, the controller optimises the operation of heating systems in the IWB CityCenter. The algorithm calculates daily the amount of energy per floor on the basis of forecast data and controls the concrete core activation floor by floor. Here, each floor has a separate control valve.

### Reliable radio technology

For regulating the room temperature, the temperature values from several of the IWB CityCenter's floors were missing. Just three of six floors were equipped with wired temperature sensors. But IWB was not convinced of the fully wired control of the control valves. The effort to pull the data cable from the basement to all floors would have been too great. Furthermore, Patrick Wellnitz is convinced: „The connection of additional temperature sensors would



Switch actuators with heating control

not go smoothly." An Ethernet-based solution via WLAN would have been non-transferable for other applications and therefore was out of the question.

The IE division decided to use the radio-based system of merkur Funkssysteme AG with controllable wireless switch actuators and wireless sensors. „The solution from merkur Funkssysteme AG is simple, reliable and inexpensive. Also in terms of total cost. And thanks to the standardised interface and the exemplary support, it was fast and easily integratable“, says Patrick Wellnitz.

## Radio technology convinces

The wireless sensors and wireless switch actuators can be installed easily and neatly thanks to the radio technology. Ideal for fast and reliable data transmission:

- Fast, because the IWB customer centre can measure the temperature values immediately after the implementation of the wireless solution. „Also temperature data from not yet measured floors,“ Patrick Wellnitz confirmed delighted.
- Reliable, because the radio-based data transmission through the high quality standard of merkur products works flawlessly in buildings made of solid concrete.



Wireless room sensor



IWB CityCenter, Basel

## 20% energy savings

The first measurable results of energy saving were pleasing: Using the TABS Control and wireless technology from merkur Funkssysteme AG, the IWB customer centre was, in December, 2015, able to save 45%\* of the heat energy from the previous year. „A large part of the savings was achieved by the optimised temperature reduction on the weekends,“ explains Patrick Wellnitz. „Over an entire year, we expect energy savings of up to 20%.“

In addition to the energy savings, a significant improvement in comfort is achieved. The predetermined SIA standard values are met 100%.

- 4** wireless room sensor
- 6** wireless switch actuators
- 1** wireless repeater
- 1** building with **7** floors
- 5 h** installation time
- 20%** energy savings

\* The savings potential is partly weather-related. The mild winter in 2015 could have influenced the result positively.