



© Zukunftsschulen Lippstadt mbH

## CASE STUDY: LORA SENSING TECHNOLOGY

# LoRaWAN & Sensor Technology for Smart Buildings with aduno® Campus

Using aduno® Campus, ituma implemented a smart system for managing temperature, humidity and indoor climate based on a network of sensors at a housing association in the Wetterau district of Hesse and at Zukunftsschulen Lippstadt mbH. Through the targeted collection, analysis and control of sensor data, the indoor climate and energy consumption can be optimised to meet specific needs.

As part of the projects, a scalable LoRaWAN-based system was implemented, enabling flexible control for tenants, properties and individual rooms. Temperature, humidity and air quality are continuously monitored and analysed to regulate heating and indoor climate according to demand. Intelligent alert mechanisms notify relevant individuals in a targeted manner, prioritised as required.

This results in clear benefits for customers: unnecessary heating of unused rooms is avoided, thereby sustainably reducing energy consumption, CO<sub>2</sub> emissions and operating costs. At the same time, the continuous measurement of carbon dioxide

levels in the indoor air – particularly in spaces with fluctuating occupancy, such as classrooms – enables the control of ventilation and indoor climate to be tailored to actual needs. Monitoring temperature and humidity helps to ensure a healthy and comfortable indoor climate for the benefit of users. At the same time, critical humidity conditions can be detected in unused or rarely occupied rooms, thereby effectively preventing mould growth. In addition, occupancy detectors are planned to record and control room occupancy even more precisely.

