



# Optimizing energy efficiency

through intelligent room temperature control



## Hugo Kołłątaj University

The Hugo Kołłątaj University of Agriculture in Kraków is one of the most important academic institutions in the country, specializing in education and research in agricultural, natural, and environmental sciences. The university manages an extensive complex of facilities - administrative, teaching, and laboratory buildings, as well as supporting infrastructure that operates year-round and requires a stable, efficient supply of thermal energy.

Such a broad and diverse infrastructure generates significant heating demand, resulting in high operating costs and the need for constant monitoring of heating system parameters. The introduction of the Nexo system, developed by ConnectPoint, was a key step towards modernizing energy management on campus.

The Nexo thermal optimization system delivered measurable savings and increased energy efficiency, enabling remote monitoring and control of heating systems.

## In a few words

The Hugo Kołłątaj University of Agriculture in Krakow is one of the leading agricultural universities in Poland, managing a complex of administrative, teaching, and laboratory buildings. Such extensive infrastructure requires a high demand for thermal energy and incurs high costs. The Nexo thermal optimization system implemented by ConnectPoint has delivered measurable savings and increased energy efficiency.

### 1 The challenge

Managing heating in a vast building complex poses a significant challenge for the University of Agriculture in Krakow:



**Traditional heating control** in many buildings is time-consuming and requires constant supervision



**High maintenance costs** - wasted energy translates into high bills and significant losses



**Lack of a central system for managing thermal comfort in rooms** - control is performed locally and manually



**High and variable heating demand** - buildings for various purposes have varying heating requirements



**Energy wasted during periods of interruption** - on weekends, holidays, or vacations



**Heating not adapted to actual use** - rooms often overheat



## 2 Solution

ConnectPoint implemented the Nexo Thermal Optimization solution, enabling remote monitoring and control of heating. At the University of Agriculture in Krakow, 155 remotely controlled thermostatic valves, 15 temperature sensors, four MClimate CO<sub>2</sub> sensors, and three LoRaWAN gateways were installed. The valves regulate the heating based on readings from the temperature sensors, ensuring precise maintenance of the set room temperature. All devices are connected to the central Nexo system, allowing the entire complex to be managed from a virtual control panel. An example of data visualization from Nexo can be found at the link: [Data visualisation in the Nexo application](#).

## 3 Key benefits

ConnectPoint has implemented the Nexo Thermal Optimization solution, which allows for:



### Remote temperature control

Adjust heating in rooms via the app, without the need for physical interaction with the radiator



### Individual room settings

Adjust heating conditions to needs and occupancy



### Real-time data monitoring

Current data on temperature, humidity, and valve opening



### Heating schedule

Set automatic schedules for individual devices and groups of devices defined by the administrator



### Precise sensor measurement

Heads regulate heating based on readings from sensors located in rooms



### Central management of the entire complex

Control of heating in multiple buildings from a single system - no more collecting keys to each room and manually adjusting temperatures throughout the entire complex

## Key results

Reduction in thermal energy consumption

30%

Installation payback time

4 years

## Summary

The implementation of the Nexo Thermal Optimization System allowed the University to achieve real savings and reduce thermal energy consumption. The centralized application enabled the monitoring and control of devices, resulting in ease of use and full control over the heating of the entire university building complex.