Hes·so FRIBOURG FREIBURG
Haute Ecole Spécialisée de Suisse occidentale
Fachhochschule Westschweiz

iCoSys
Institute of Complex Systems

El-Diagno

Electricity consumption monitoring

Realization

HES-SO Fribourg
Prof. Sébastien Rumley
sebastien.rumley@hefr.ch

HES-SO Fribourg
Valentin Baudin
valentin.baudin@hefr.ch

HES-SO Fribourg
Sébastien Reynaud
sebastien.reynaud@hefr.ch

Keywords

- Time series
- Energy
- Sustainability
- IOT

Our skills

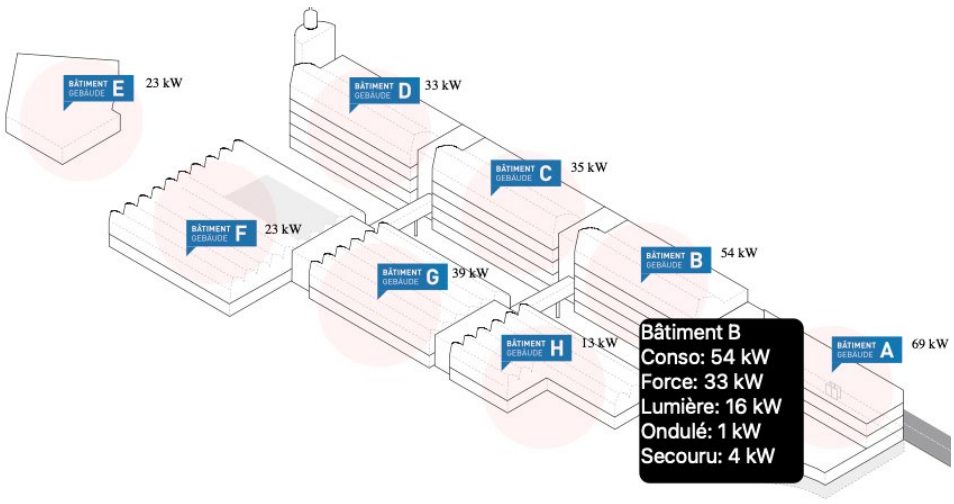
A full infrastructure for the monitoring and diagnostics of electricity use in the school is being developed.

Valorization

Monitoring the electrical power consumption of complex buildings

Starting date

09.2022



Context

In autumn 2022, the Swiss electrical grid experienced strain, with mentions of potential blackouts and a significant surge in the price of kilowatt-hours (kWh). The HEIA-FR is a significant consumer of electricity in the Fribourg canton. The need to identify major consumption sources, as well as points of waste, became evident from a financial, environmental and societal perspective.

Scientific objectives

Several questions naturally arise when seeking to manage electricity consumption effectively: How can we establish a reliable and efficient representation of the physical data? How do we pinpoint areas of waste? And, how do we assess the effectiveness of new energy directives? The expertise gained from the school building project can then be applied and leveraged across a broad spectrum of energy economy initiatives.

Visibility and opportunity for further projects

The project introduces a versatile approach to gaining a nuanced understanding of electrical consumption within buildings. Installing similar infrastructure in numerous physical structures holds substantial potential for improvement. Moreover, the gathered data serves as a valuable dataset for training energy models and predicting electricity consumption trends. Finally, the efficiency of future potential energy directives can now be quantified accurately.