MONITORING ACCORDING TO THE KISS PRINCIPLE
Implementing a Passive House user-friendly monitoring platform

■ Introduction

This work presents the monitoring platform that was configured, implemented, tested and validated to demonstrate the performance of Passive House and nZEB buildings. The validation occurred after one year of data collecting. The platform it is being used and tested in a renovated office to the EnerPHit standard in Portugal.

■ Platform

The standard platform is called Zeus-web and was developed by Zeben, a Portuguese company that develops automation solutions and provides electrotechnical services. The Zeus-web platform basically allows the reception and recording of alarms and the download and reading of the records of the dataloggers.

The Passive House monitoring platform was configured by Homegrid specifically for Passive House and nZEB buildings with the following features:

- ❑ An interface that is very easy and intuitive to interact and explore for both experienced and inexperienced users;

- ❑ Open access to everyone interested in the real time data;

- ❑ A very strict range of data collecting focusing on the essential parameters;

■ Accessing the platform

The open access allows the user to see the resume page and anyone can access through the link: **http://zeus.zeben.pt:3030**. Both the user name and the password is **Passivhaus**.
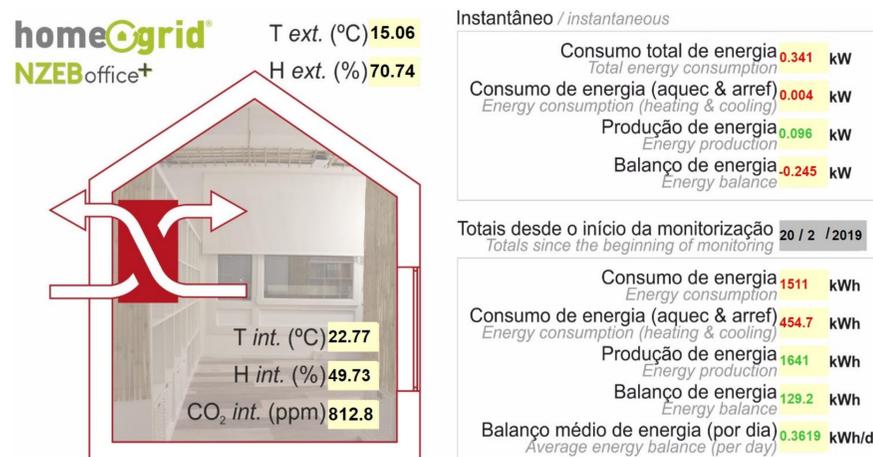
The open access area allows the user to see the results in the resume page (example)
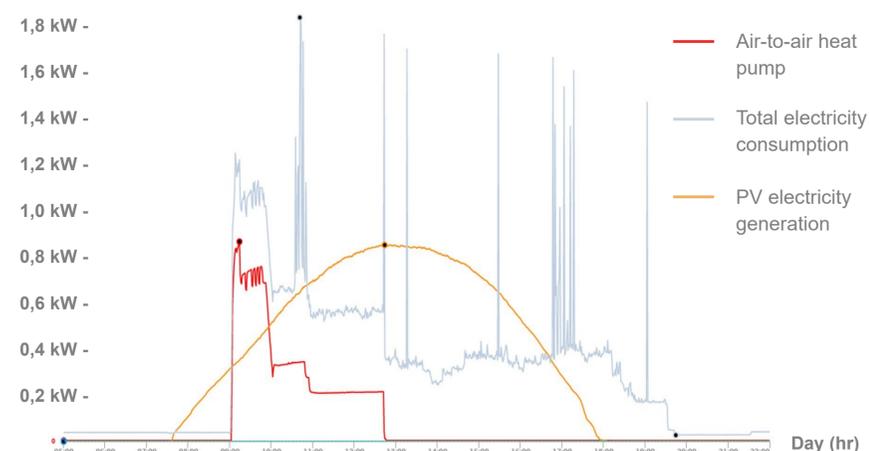
The reserved access allows the user to check and use all the data collected (example)

The reserved access is authorized for research purposes and allows the user to see the history of data collected, the graphs, create reports, besides the resume page.

■ Data collected

The data collected is divided in four groups:

- ❑ outdoor situation: temperature (°C) and relative humidity (%);

- ❑ indoor situation: temperature (°C), relative humidity (%) and CO2 concentration (ppm);

- ❑ instantaneous energy balance: total consumption (kW), consumption for heating and cooling (kW), generation (kW) and balance (kW);

- ❑ global energy balance, since the beginning of the monitoring (20190220): total consumption (kWh), consumption for heating and cooling (kWh), generation (kWh), balance (kWh) and average daily balance (kWh/day);

■ Results

The platform is being used in the monitoring of the first Passive House office in Portugal since February 2019.

The data collected is being studied in research projects of the Faculty of Sciences of the University of Lisbon. Some of these research was already presented in several events.

The installation of the kit containing the different components is easy and can be realized by any electrician or skilled person.
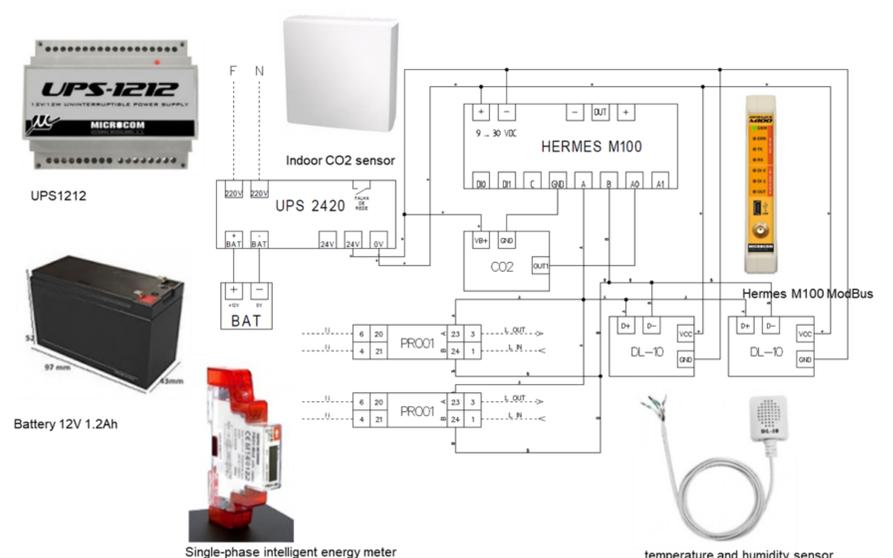
Installation kit components and layout

■ Conclusions

The operation of the platform has been reliable with very few gaps in the recording data (the lack of information in the recorded data is 0,0008%).

The feedback from the users both in open access and in the reserved access modes has been positive with no problems or questions declared.

The platform will be used to collect the performance data in further projects.

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