BuildON
Factsheet

Human-smart assets interactive tools (2)

Multi-platform, responsive, web application for building energy management.

LEAD PARTNER: HOLISTIC

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WHAT IT IS

Many building users struggle *to make sense of scattered* ***energy and environmental data****, making it* ***hard to identify inefficiencies*** *or to act in time.*

This user-friendly platform provides a clear, real-time view of energy use, indoor conditions and system status through intuitive dashboards, forecasts and actionable recommendations.

It **supports smart building operation through continuous monitoring and control**, facilitates demand response through energy-use forecasting and load-shifting recommendations, and stores structured operational data to support building management and energy efficiency.

WHO BENEFITS, AND HOW

BUILDING OWNERS:
a clear overview of energy performance and costs, helping to improve efficiency, increase asset value and support sustainability goals.

FACILITY MANAGERS:
earlier issue identification and better-informed decisions to optimise building operations.

TENANTS:
improved indoor comfort and more stable, energy-efficient living or working environments.

KEY FEATURES

- Real-time monitoring of energy use and indoor environmental conditions for better awareness.
- Clear visual dashboards with graphs to quickly understand building performance.
- Tracking of systems such as heat pumps and solar panels to optimise their efficiency.
- Forecasting of energy consumption and production to support planning and decision-making.
- Smart recommendations to reduce energy costs and improve operational efficiency.
- Comfort analysis (e.g. temperature, air quality) to maintain healthy indoor environments.
- Personalised interface with tailored insights for different users and building setups.

HOW IT WORKS

The platform uses a hybrid edge/cloud architecture: on-premises controllers, sensors and gateways handle local acquisition and control, while cloud-hosted services provide dashboards and remote operation for near-real-time monitoring.

Interoperability uses RESTful HTTPS APIs, JSON payloads, MQTT messaging, OAuth2/OpenID connect via Keycloak, and standardised ontologies for **harmonised data exchange across devices and services**. It integrates AI/ML outputs from the project's monitoring and optimisation services. Role-based access control and centrally managed sessions and credentials protect data and control functions.

PERFORMANCE AND IMPACT

Validation is ongoing. **Expected outcomes include a 5–10% reduction in energy consumption** through heat pump optimisation **and better alignment with renewable production**, improved indoor comfort (including greater temperature stability and air quality), and better operational efficiency through faster issue detection, less manual intervention and better-informed decisions.

TOWARDS THE MARKET

The platform is in a pre-commercial phase. Additional work is required to **transition from pilot-scale validation to a standardised commercial product** with full technical support and market-ready documentation. **The intended business model is a Software-as-a-Service (SaaS)** subscription for building owners, alongside integration services for technology providers and energy service companies (ESCOs) **to embed the tools into existing building management workflows. Replication potential is high across residential and commercial buildings**, with scope for adaptation to different building types and energy markets.

VISUAL OVERVIEW

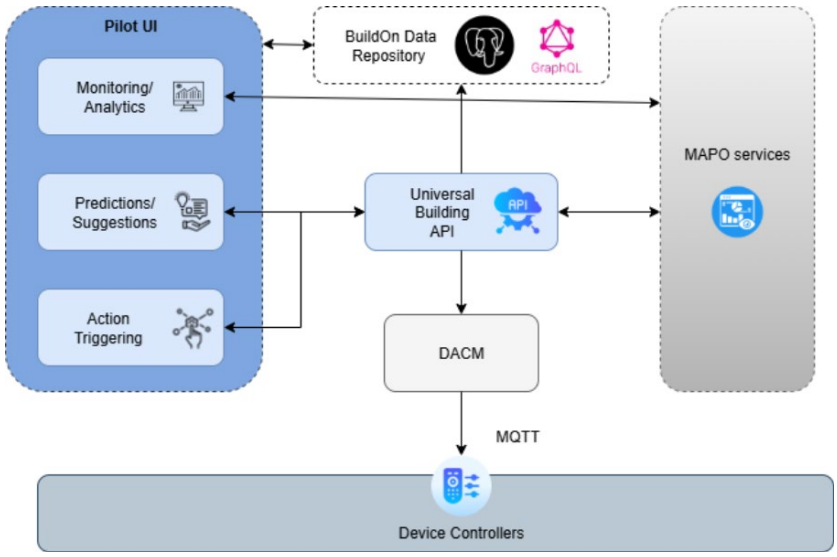

Figure 1. High-level architecture and interconnection diagram of the platform.

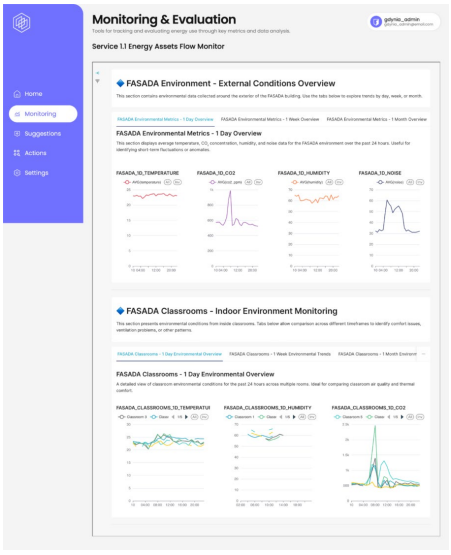

Figure 2. Pilot user interface — monitoring and evaluation view.

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