

SUCCESS STORY

Sustainable Building Energy Management

What will the ideal building of the future look like? And how is it possible to intelligently manage and store its growing energy demand?

Today, modern energy management systems are already able to holistically digitalise and connect building installations, and thereby increase comfort, sustainability and efficiency.

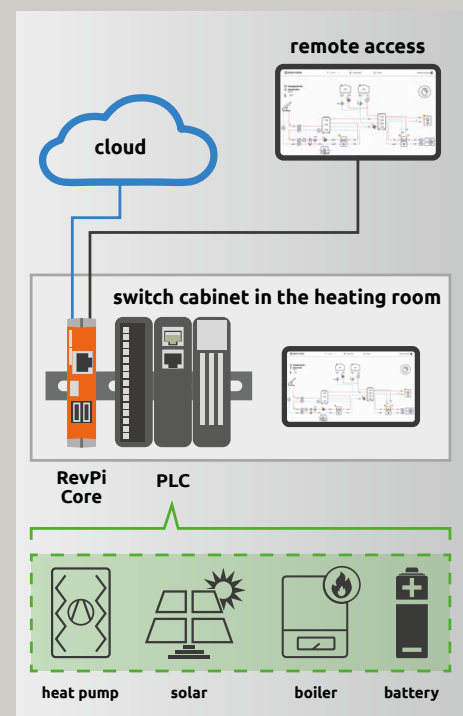
When it comes to energy-efficient building concepts, it is no longer just the building envelope that plays a decisive role, but above all building automation that is increasingly coming into focus. The energy balance in the smart home is an important component here: Electricity and heat generation as well as heat use must be re-thought with regard to the energy revolution, should be decentralised in the long term and sustainably promote the use of renewable energies.

For example, heat pumps are connected to the photovoltaic system and the electric vehicle in order to optimise the energy system holistically and across different sectors and to increase the self-consumption of the electricity produced in the photovoltaic system. In the field of heat generation, various regenerative heat sources are optimally run together. For example, solar thermal energy is combined with exhaust air heat recovery and heat pumps. With the help of artificial intelligence (AI), it is also possible to predict energy requirements and optimally coordinate energy sources.

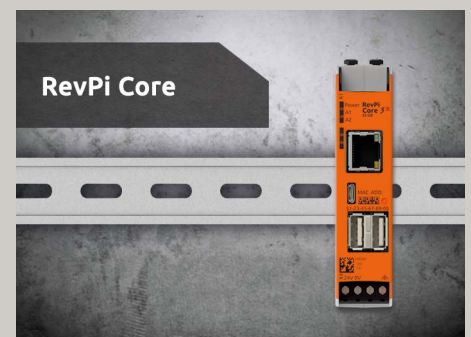
With the Green Fusion control system from the company of the same name near Berlin, these actions and concepts can already be implemented today and the building of the future no longer remains a simple idea. Revolution Pi acts as the control and monitoring centre. The RevPi Core is installed directly in the control cabinet of the heating system. Here it is connected to a PLC and an industrial router and provides a local fallback web server. The UX-optimised front end for visualisation and control of the energy system is easy to operate via tablet. In addition, data-driven simulations of the energy system, so-called grey-box models, are carried out, driven by AI, to optimise energy consumption on a daily basis and to give instructions to the PLC on site on how to control the energy flow.

Looking Ahead

The Green Fusion Manager, together with Revolution Pi as the underlying hardware platform, thus forms an energy management system that minimises emissions, reduces costs and optimises user-friendliness.



Module used



REVOLUTION PI

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[linkedin.com/showcase/revolution-pi](https://www.linkedin.com/showcase/revolution-pi)