Project no. 340-004

Energy-conscious building automation – Phase 1

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Requirements for energy-efficient building automation are formulated on the basis of measurements and interviews with users. The aim is to ensure a good indoor climate with lower energy consumption by means of requirement control of heating, cooling, ventilation and lighting, etc. This trial project will prepare a later demonstration in a representative newly built property.

Project status:

The project has just been completed and the collated final report has been delivered.

This project shows that dynamic operation is important for energy savings instead of maintaining room temperatures within narrow margins. More automation per se will not necessarily lead to greater savings; but automation used correctly will do so.

However, internal consumption may be considerable, so part of the energy-aware design work should focus on also reducing this consumption.

Anticipated final project results:

It is anticipated that this project may help to call more attention to energy savings via energy-efficient, expedient use of building automation. This project is clarifying potential savings and describing good practice for optimised, energy-efficient building design and automation.

The project indicates, among other things, that approx. 15 kWh/m² in primary energy consumption can be saved by allowing the temperature to slide by +2.5°C over the daily usage time instead of +1°C. This operating philosophy allows the heat-accumulating elements of the building to be utilised more effectively, making fewer demands on the automation and operation of air-conditioning systems.

An assessment has also been carried out into how large a zone can be covered by typical sensors in order to maintain a satisfactory indoor climate and the energy consumption linked with this. However, electricity consumption for building automation may itself amount to up to 6 kWh/m² per year.

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