

# Transparent energy consumption at University of Göttingen Significant energy savings due to energy meters with KNX interfaces



Around 26,300 students are enrolled at the University of Göttingen. They are accommodated in 235 individual campuses constructed between 1330 and 2011. The building management system also supports 15 leased buildings or parts of buildings, making a total area of approximately 600,000m<sup>2</sup>. Minimizing the consumption of electricity, water, heat and cold is one of the most important ways of ensuring efficient management.

The cost of energy has increased steadily in the past few years. In the year 2000, seven million EUR had to be paid for electricity and heating (not including the University Medical Center), a figure which had risen to 11.5 million EUR by 2007. An eleven-point plan adopted in 2006 to reduce consumption and costs is already showing significant results.

### Changing times

Alongside the replacement of refrigerating and heating systems and the renewal of windows or façade heat insulation, precise load profiles enables for energy savings. Energy meters have therefore been installed in all buildings. On the one hand, this enables the detailed documentation of energy consumption.

On the other, this facilitates the billing of costs to the respective user, i.e. the individual faculty or third parties, such as non-academic research institutes. Because usage behavior is a vital factor in energy consumption, energy managers and users have jointly established and implemented additional technical and organizational energy saving initiatives.

„Now, electronic energy meters with KNX interfaces from ABB are mainly used. As Gabriel Keller from the department University Real Estate and Facility Management explains, due to their functionality and excellent features, these devices have proven to be ideal for remote reading of energy measurements on all property owned by the University of Göttingen, including the University Medical Center (UMG)“

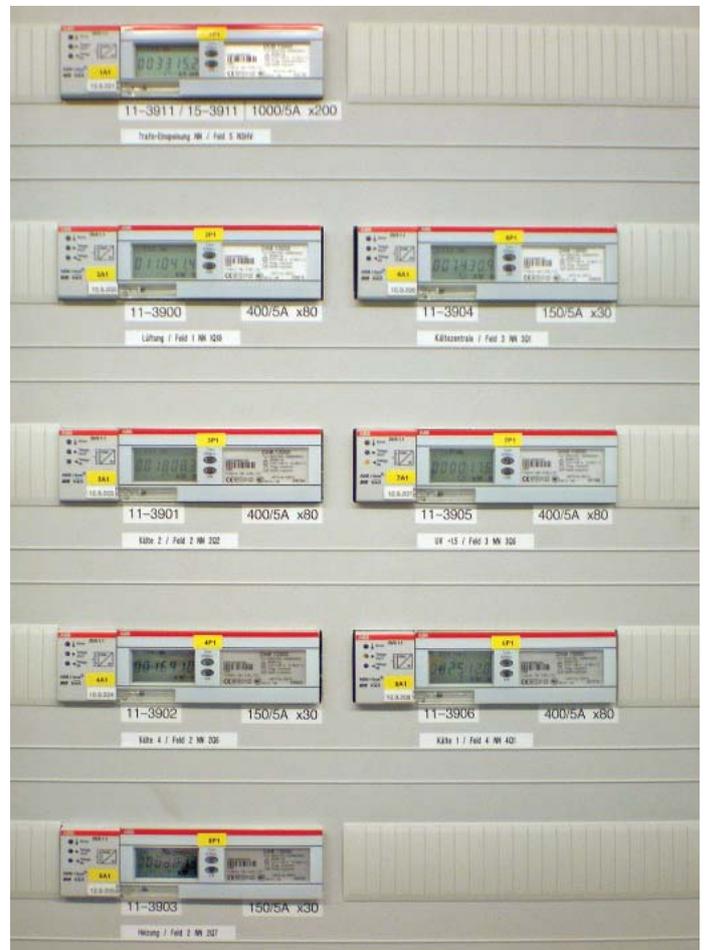


A44 energy meter from ABB

### Transparency of consumption

One of the sites where A series energy meters from ABB are being installed is at the Schwann-Schleiden Research Centre for Molecular Biology on the North Campus - one of the university's largest construction projects. Of a total area of 3200m<sup>2</sup>, 2200m<sup>2</sup> is taken up by laboratories. In addition, 20 climatic chambers are available for use by the scientists.

As far as possible, the aim is to provide institute-specific billing in consultation with the users. This means that consumption readings must be determined separately, i.e. that individual consumers, such as corridor lighting, climatic chambers or laboratories, are precisely assigned to the respective energy meters. This results in a KNX structure with 380 addresses and 15 lines, which for the land occupied by the University of Göttingen means development of a comprehensive KNX system with a total of 2148 addresses and 104 lines, which must be operated as far as possible in a fail-safe manner.



Transparent energy consumption by user

The ZS/S 1.1 meter interface from ABB reads data from energy meters via its infrared interface and converts them into KNX telegrams. To enhance reliability, all information is transmitted from a technical network which has a special security system.

„A44 energy meters with Platinum functionality are proving to be the best way to address the nature and extent of the challenges faced. The fourline display can also be read by „nonexpert“ employees,“ emphasizes Keller.

### Standards

The A series energy meters are IEC-certified and additionally certified and tested in accordance with the Measuring Instruments Directive 2004/22/EG (MID) of the European Commission. The latter is mandatory for meters in billing-related applications within the EU and the A44 energy meters are therefore ideal for the primary metering carried out here.