Perfect Working Conditions

User-orientated building technology in company building

The new company building of Elsner Elektronik shows that it is possible to establish building automation on a high level of energy savings and safety and at the same time give the user the opportunity to participate.

Large window fronts for a great view on the beautiful surroundings and an optimal energy balance – these were the requirements. They got reality with shading controlled according to solar position and indoor temperature, a night-time re-cooling and a temperature control that only heats or cools when all other measures are stretched to the limit.

The ambient climate automatic is carried out by the room controller Corlo Touch. This is why even complex functions could be set easily in the parameter sets of the ETS application. For the blinds, e. g. slat tracking, wind and frost alarm have been activated. The summer compensation adjusts the room temperature's target value to high outdoor temperatures.

The sensor input values are transmit to the software of the controller unit via pre-defined communication objects. Thus the effort for integration was low. Individual requirements were set in the application's integrated logic gates, in this case the interaction between heating, AC and window contacts. The temperature controller is set to building protection mode when a window opens. As the AC works with a proprietary protocol, it has been integrated in the KNX control via a LON-KNX gateway.

Certain consumers, such as water storage and power outlets in the production rooms, have been integrated into KNX via switching actuators. Thus in "absence" mode, all tools and machines are currentless and no energy is used heating up water.

The FacilityServer gives an overview of the building. Sensor data, camera images and the status of windows and all other systems in the KNX bus can be monitored here. The server also takes over time control of doors, gates and cafeteria ventilation.

Everything is automated with KNX – but where is the user, that is the staff? They can set their ambient climate, shading, light and windows at any time. Pages for manual operation are pre-defined at the touch displays. But the staff can also use a smartphone to operate the controller. The main case for the use of the app is to quickly recall presentation scenes in the training rooms. By giving the possibility of re-adjustment at any time, the user gets independent from the integrator. In spite of the automation there is no feeling of heteronomy.

Benefit:

- Individual single room control
- Automatic shading
- Presence controlled lighting
- Absence shutdown of electrical consumers
- Malfunction and operation messages, remote access

Subsection/plant component:

- All sections: Lighting, sun screen, heating, cooling, windows, ventilation, doors, gates, fire alarm, multimedia, power station, boiler

Interfaces:

- AC (Fujitsu protocol via LON to KNX)
- Safety lighting
- Monitoring cameras (Mobotix)

Components:

- 366 bus participants, 10 power supply units
- Displays, sensors, actuators: Elsner Elektronik
- 16A switching actuators, Dali gateway and safety modules: ABB
- Gira FacilityServer
- LON-KNX gateways: Intesis
- Presence detectors: BEG

Company:

Client: Jutta and Thomas Elsner
Architect: Willi Burk, 21-ARCH GmbH & Co. KG, Calw
Electrical planning: IMS Ingenieurgesellschaft Mück & Schaber GmbH, Holzgerlingen
Electrical installation: Elektro Wurster GmbH, Bad Liebenzell
System integration: Elsner Elektronik GmbH, Ostelsheim

Support:

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