

## Striking new campus for business university in Vienna

Vienna University of Economics and Business uses KNX to underpin its eco-friendly building concept

Winner  
KNX Award 2014  
Category  
International Europe



At the new campus of Vienna University of Economics and Business, a range of unusual architectural styles bring together functional cuboids, futuristic trapezia, curved lines and contrasting surfaces to create a new, exciting atmosphere. Designed by six different star architects, together the campus buildings reflect what modern academia is all about: internationality, innovation, and diversity. Although they are so different, the buildings were all constructed according to the same “green building” concept, and KNX plays a key role in this.

### Light and solar control

On a campus spanning an area of ten hectares with 25,000 students, 90 lecture theatres and seminar rooms, almost 4,000 rooms in total, and a whole series of catering facilities, a supermarket, a sports centre, transport routes, washrooms, etc., energy-efficient lighting alone can save a huge amount of energy. In the offices, the lights are controlled according to whether there are people in the room, and how bright it is outside. The corridors and the staircases are fitted with motion sensors to ensure efficient electricity use. Event-based lighting scenes can be created for use during events. KNX motion sensors and timers help to ensure that lighting is used efficiently outside as well.

On glass facades on the campus, the solar control equipment also needs to have an energy-saving effect. Here KNX controls the shading equipment depending on the amount of sunlight incident on the facade. On winter's nights, the venetian and pleated blinds are closed to



Different architectural styles on the outside, but just one KNX-based concept on the inside – the new campus of Vienna University of Economics and Business.

provide additional insulation in order to cut heating costs. In summer, on the other hand, the blinds are opened in the evenings to take advantage of the cool evening air outside the window. KNX also automates the drive mechanisms for roof lights on the campus.

### Safety, security and technical monitoring

KNX is also ideal for performing technical monitoring functions. It detects messages about power failures, faults, operating statuses and overvoltages, and alerts from the central emergency lighting control unit, forwards them to the visualisation, and archives them for monitoring purposes.

To facilitate safety and security management, interfaces provide connections to e.g. the fire detection system and the central alarm management control unit. This enables alarm functions to be set up for the lighting and solar control systems, for example all blinds can be programmed to open if there is a fire.

KNX can be used to programme safety lighting to switch off again following a power failure. To operate the KNX installation while on the move, system integrators and facilities engineers have the option of logging in to the

system over the university's Wi-Fi network.

### Carefully-coordinated system topology

Gira FacilityServer was used for the visualisation of the installation, in which it is presented in the form of floor plans. Depending on their user authorisations, technicians and porters may have access to all functions, or only certain areas. The system can be operated from any computer workstation with an internet browser, and central functions can even be controlled from an iPad.

The installation consists of an impressive 13,500 bus devices overall. The KNX system for the entire new campus was installed by three electrical installation companies. This was only possible thanks to seamless cooperation between the system integrators, who successfully commissioned the KNX installation after just six months.

The topology of the KNX installation at the new university campus was a particular masterstroke. Because the project was so large, it was broken down into eight sub-projects based on area and line couplers. The eight sub-projects are connected with one another over the university's local area network.

### Benefits of KNX for this project

- Large installation
- Energy-efficient control systems
- Systems can be controlled and operated from a central point
- Visualisation
- Mobile operation via iPad
- Remote maintenance
- Event-based lighting scenes

### Technical highlights

- Large installation divided up into eight sub-projects
- Individual Group Address areas for each project for visualisation purposes
- Safety and security management

### Companies involved

**Client:** Vienna University of Economics and Business

#### Architects:

- BUSarchitektur, Vienna
- Zaha Hadid Architecture, Hamburg
- NO.MAD, Madrid
- Estudio Carme Pinos, Barcelona;
- CRAB Studio, London
- Hitoshi Abe, Sendai

**Planner:** Vasko & Partner Ingenieure GmbH, Vienna

#### KNX system integrators:

- Risk Control GmbH, Zwentendorf, Austria, [www.risk-control.de](http://www.risk-control.de)
- Gottwald GmbH, Melk, Austria, [www.gottwald.at](http://www.gottwald.at)
- BR-Tech GmbH, Waidhofen/Ybbs, Austria, [www.br-tech.at](http://www.br-tech.at)

#### Building services/

##### system components:

- Lighting • Solar control • Alarm management • Monitoring • Audiovisual equipment • Visualisation • Interfaces

#### Size of installation:

Number of KNX devices: 13,500

#### Selected KNX components:

- Visualisation: Gira FacilityServer
- Control panels: Jung LS-design sensors
- DIN rail-mounted devices: Jung actuators, sensors, binary inputs, etc.
- Motion sensors: Jung presence detectors
- Central safety/security control unit: Schlaps & Partner
- Audiovisual equipment: Crestron Gateway