

A super terminal for “super jumbos”

Already tried-and-tested at other airports, KNX technology is now in use at Dubai International Airport as well

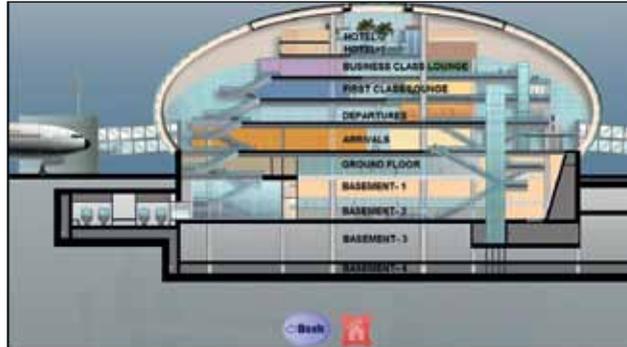
Winner
KNX Award 2014
Category
International Asia



In Dubai in the United Arab Emirates, extreme buildings are the norm. The new concourse at Dubai International Airport is no exception, and looks set to break some records. “Concourse A” features 24 gates, plus supermarkets, offices, lounges, restaurants and luxury hotels, and is the first airport in the world to offer “multi-level boarding” for the Airbus A380 – the aircraft known as the “super jumbo”. Multi-level boarding means that first and business class passengers can reach their seats directly from their respective lounges. KNX technology is already used in numerous airports around the world, so it was the obvious choice for the internationally-active company that planned this KNX installation. Thanks to its demand-based control system, the lighting system alone – which consists of 140,000 lighting points illuminating a total area of 528,000 m² – reduces the concourse’s energy consumption by between 30 and 40 % compared to a conventional installation. This large project, made up of more than 7,000 KNX devices, won this year’s “International – Asia” award.

Energy-efficient

The KNX system controls and regulates the lighting on the basis of parameters such as motion, brightness, timer settings, manual push buttons, and logic operations. A particular highlight of the lighting control system is the way in which it is automatically controlled by the flight schedules, meaning that the lighting in the departure lounges and at the gates is only switched on full when it is really needed. In the concourse’s hotels and spa areas, KNX creates



From the visualisation homepage it is easy to select individual levels and areas for monitoring and operation purposes.

pleasant lighting moods by offering scenes appropriate to a variety of situations. In the meeting rooms in the office areas of the concourse, special scenes can be called up using an audiovisual touch panel, in order to operate the lights and blinds simultaneously during talks. The blinds are operated either automatically, e.g. depending on whether there are people present and how bright it is, or manually. In this way they can be positioned optimally to prevent glare while ensuring that maximum daylight enters the building.

Technology controlled according to flight schedules

The KNX installation in the concourse is monitored and controlled via a visualisation. This is designed to allow simple navigation from the homepage to individual levels and on to specific areas, to enable technical staff to check the installation and intervene where necessary. The visualisation also includes special pages for lighting control, flight schedules, and energy management. The system can be accessed from a number of different locations, via PC’s or touch panels. Consumption

data from actuators fitted with ammeters are fed to the visualisation system, which displays the data in the form of statistics and charts that can be used to assess the energy-efficiency of the installation. Via interfaces the server is integrated with the audiovisual system, SCADA system, flight schedules, building management system, fire detection system, remote monitoring system, etc.

Luxurious lighting effects

The system integrator, “Total Automation” from Dubai, cites a “high degree of reliability” as its reason for choosing this decentralised system, explaining that dependability is “an absolute must in airports”. According to “Total Automation”, the particular benefits of KNX for this project lay in the increased energy efficiency, practical, safe lighting, luxurious lighting effects, and the convenience of being able to control lights and blinds via the audiovisual equipment. The company praised especially the system’s flexibility and its “seamless integration” of different sub-systems with one another, which enabled it to satisfy “extremely complex requirements”.

Benefits of KNX for this project

- Meets the tough demands of airports for a high degree of reliability
- Energy-efficient control of lighting
- Control concept can be used to create luxurious lighting effects in hotels and lounges
- Permits integration of other systems
- Can be monitored from a central point via visualisation
- Redundant control system
- Documentation of energy data
- Flexible: easily modified and optimised

Technical highlights

- User-friendly visualisation
- KNX control system is linked to the flight schedule to allow lights to be turned on and off as actually needed
- Scenes for lighting and blind functions can be operated via audiovisual controls
- Energy consumption is monitored with the help of switching actuators fitted with ammeters

Companies involved

Client: Dubai Civil Aviation

Architect and electrical consultant: Dar Al Handasah, Dubai

KNX system integrator: Total Automation, Dubai
www.tacdubai.com

Project type:

Airport
Hotels and catering

Building services/system components:

- Lighting
- Solar control
- Energy management
- Audiovisual equipment
- Visualisation
- Interfaces

Size of installation:

Number of KNX devices: 7,390

Selected KNX components:

Schneider: KNX/DALI gateways, KNX multi-sensors, presence detectors, sensors, actuators, etc.
Altenburger: Dimming actuators
Arcus: Touch pad
Intesis: KNX gateways etc.