

Highest level of efficiency for Singapore's skyline

In the twin-tower development Asia Square, KNX supports climate protection, comfort, safety and technical service

Winner
KNX Award 2012
Category
International – Asia



The towers are over 220 metres high and were presented with the coveted Green Mark Platinum Award

Singapore's skyline continues to grow not only in height but also in the number of skyscrapers. Amongst the newest of those completed are the Asia Square Twin Towers near the Marina Bay financial centre. On the 43-46 floors, there is a luxurious 280 room hotel, 190,000 square metre office space, an extensive sales floor for boutiques and a public podium for cultural events. Global companies such as Citi Bank, Julius Bär, Bank Sarasin, Lloyds, Google, Marsh and McLennan Companies amongst others have moved in here. The two Towers I + II are currently among the 10 highest in the metropolis.

The buildings received the highest accolade with the Green Mark Platinum Award, a coveted title for environmental and sustainable building. One of the priorities was the production of solar electricity and biodiesel as well as water efficiency. Energy-saving building system technology

has also an important role. The KNX control solutions integrated by Yumetronics Pte Ltd in the lighting, technical monitoring and energy management functions have therefore earned the International Award for Asia according to the KNX jury.

Tenants can create their own switching programs

Over 90 percent of the lighting in the buildings is efficiently controlled via KNX. Presence detectors, brightness sensors, timer programs and schedules ensure that lighting circuits are only switched on when they are required and are dimmed down during daylight – without any loss of comfort or convenience.

The level of safety is also increased by the KNX applications. The presence signals from the staircase area are therefore used for monitoring in connection with the IBMS. The coupling also enables the lighting in the escape and evacuation routes to be switched on fully automatically in the event of a fire.

All the KNX functions can be supervised from a central location via the "Lighting Control and Management System" (LCMS) developed by Yumetronics. The recording of the operating hours of the luminaires and the evaluation of loads contribute to rapid servicing, efficient building maintenance and optimisation of the energy consumption. The visualisation (ABB) also offers individual users the option of creating their own switching programs using access rights e.g. according to working hours, occupancy etc. Remote control via the internet is also possible.

Coupling the lift control with an authorisation card is one of the technical refinements. It also activates the lighting on the floor on which the lift arrives.

All the parties involved in the project profit from the KNX installation, since planning security and system flexibility were key factors at the project design stage. The LCMS saves the building owner and the tenants energy and labour costs. Control functions can simply be adapted when the room use changes while the guests and employees enjoy comfortable lighting conditions. To meet personal preferences and to adapt when the working day is extended, room functions can simply be operated manually, even directly on the workstation PC. Prewarning functions such as the lights flashing prevent the building from being plunged into sudden darkness when there is a master reset.

The climate protection also profits from the reduction in the carbon footprint due to lower energy consumption and no longer burning time of the luminaire.

Benefits provided by KNX in this project

- Versatile functionality, large number of components
- Flexible for optimisation and modifications
- Energy-efficient lighting
- High technical comfort
- Access rights for tenants
- Central technical monitoring
- Multiple use of the presence signals
- Security through coupling with the BMS
- Supports economic efficiency and sustainability

Technical refinements

- "Light Control and Management System" (LCMS)
- Supports systems such as DALI or I-IOV
- Monitoring of luminaires and operating hours
- Access rights for tenants
- Coupling with IBMS and emergency lighting
- Prewarning in event of a master reset

Companies involved

Building owner:
MGPA, www.mgpa.com

Electrical Engineers and KNX System Integrator:
Yumetronics Pte Ltd, Stanley Yeo, Singapore

Area of application:
Hotels, offices, retail, culture

Functions:

- Lighting
- Technical monitoring
- Energy management
- Visualisation
- Interfaces to other systems
- Remote monitoring/control

Scope

Number of KNX devices: 4200, ABB, Theben etc.

Costs:

2,500,000 US dollars