V CONGRESO
EDIFICIOS INTELIGENTES
Madrid, 14 mayo 2019

"DUBAI INTERNATIONAL AIRPORT"
KNX AWARD 2014

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AGENDA

01 Company Profile – Total Automation

02 Project Introduction

03 Project details

04 Visualization and Integration

Total Automation Co. LLC

Established in the year 2000, is a leading provider of Home & Building Automation in Middle East.

Total Automation is committed to provide quality energy conservation and green living to the people at large, using state of the art technology based customized solutions pertaining to comfort, safety and security of the customer with perfection of highest standard wedded to flawless service commitment.

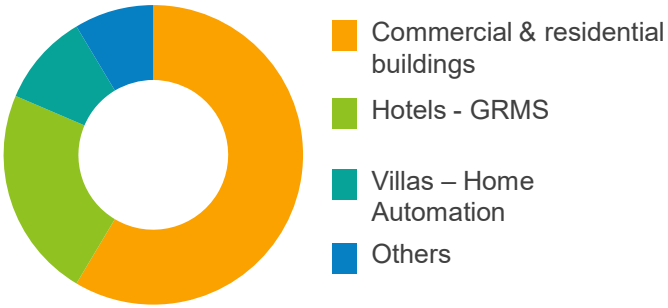
KNX Awards

2014: KNX Award – International – Asia
Project : Concourse A – Dubai International Airport

2016: KNX Award – Energy Efficiency
Project : La Verda Suites and Villas

2018: KNX Award – International Asia
Project : Dubai Parks and Resorts

Work Experience: 400+ Projects



DUBAI INTERNATIONAL AIRPORT - CONCOURSE A

Introduction:

- Modern and sophisticated airport dedicated for emirates airlines.
- Spread across 528000 Sq meters ,24 gates, 11 stories which includes retails shops, offices and hotels.
- Worlds only dedicated hub for Airbus A380 featuring multi level boarding facility .
- Airport serves up to 80million passengers in a year
- With the vision to deliver a world class experience to the customers by providing safe, secure and environmentally responsible airport

TECHNICAL HIGHLIGHTS

Open Protocol – Seamless integration

The customer demands in terms of integration was extremely complex and only KNX could suffice this requirement. The KNX system implemented is integrated with Flight Schedules(including last minute changes),Security, Fire Alarm BMS , AV and SCADA

Multi Vendor – Choice of products

To ensure optimization of all customer requirements , KNX products from Schneider, IPASS, Zennio, Arcus, Tridium, Intesis etc have been deployed in this project

Energy Efficiency – Green Project

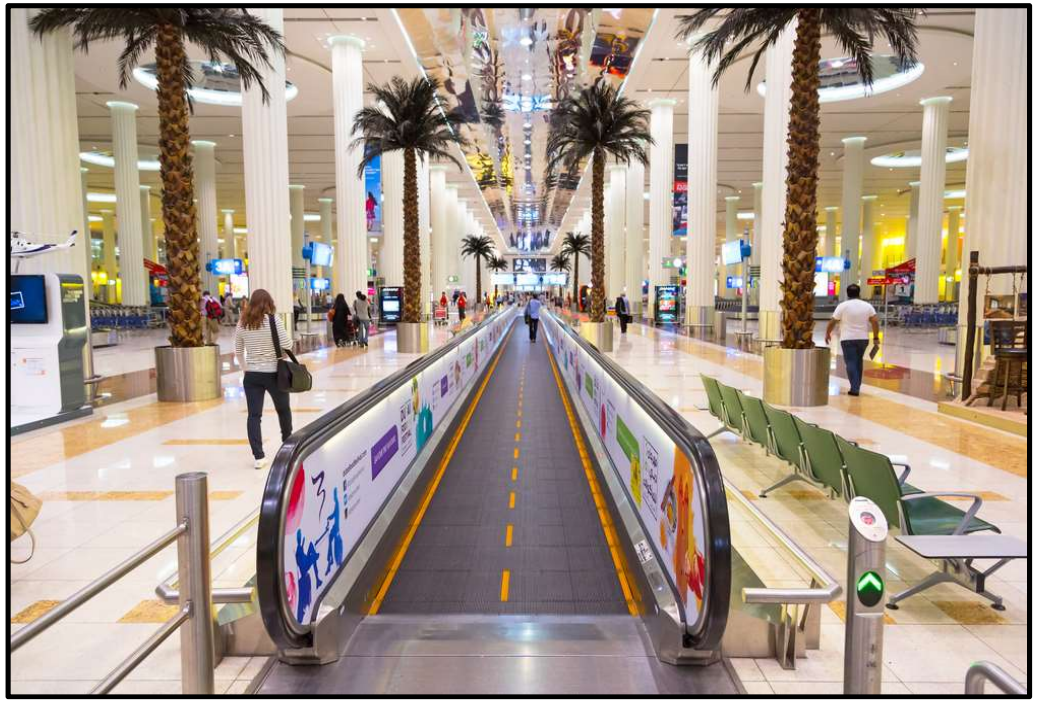
KNX system ensures optimal usage of lighting via motion, light level and time schedule – reduces concourse's energy consumption by 30 to 40%.

Secure System

The KNX System implemented is shielded against any unauthorized access in to the bus line. Combination of standalone detectors in common areas and switched via binary inputs which area placed in secured area.

BENEFITS OF KNX- ENERGY EFFICIENCY

- Meets the tough demands of airports for a high degree of reliability.
- Energy efficient control of Lighting, HVAC and Blinds.
- Dimming control in lounges, hotels and meeting rooms provides pleasant lighting scenes.



BENEFITS OF KNX- ENERGY EFFICIENCY

- Integration to other property management systems.
- Monitor and control from central graphical interface.
- Energy consumption data monitoring and recording.
- Flexibility: easily modified and optimized.

SIZE OF INSTALLATION

7390 Total Number of KNX devices were used to meet the complex requirement of the customer.

6 Total number of brands used in the project namely Schneider Electric, Arcus, Intesis, Altenberger, Tridium Niagara, IPAAS

140,000 Total Number lighting points illuminating a total area of 528,000 sq meter

SIZE OF INSTALLATION

187	Total Number of Lighting Control Panels
175	Total No of KNX Power Supply Units for Lines/Mainlines/Repeaters
11	Total Number of Area's
3214	Total Number of Motion sensors
754	Total Number of switches (multifunction /override /pushbutton etc)
3422	Total No of backend devices (Actuators /Dimmers /Gateways)
75,200	Approx EIB Cable used (in meters)

Typical Lighting Control Panel (LCP)

PROJECT DESIGN & FUNCTIONS

Lighting Control

- DALI based light control using motion sensor with constant light control in common areas.
- On/Off light control in Toilets using motion sensors and switch actuators.
- Scene based dimming control in Hotels, Lounge and meeting rooms using Dimmers, Touch Panels & multi Function Push buttons.
- Automatic light control in gates and waiting area based on flight schedule
- Timer and Photocell based light control of Façade lighting

Blind Control

- Shutter control based on lux level, override using intelligent push switches and touch panels and central control software.

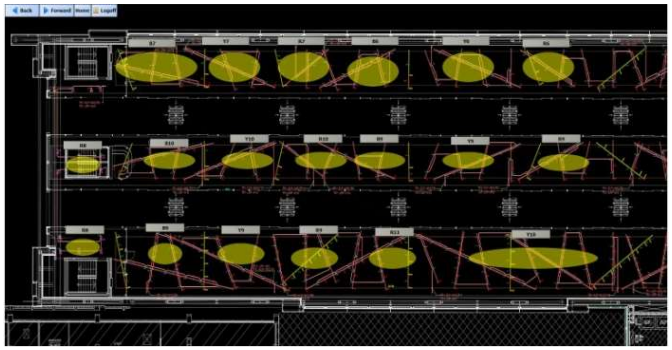
HVAC Control

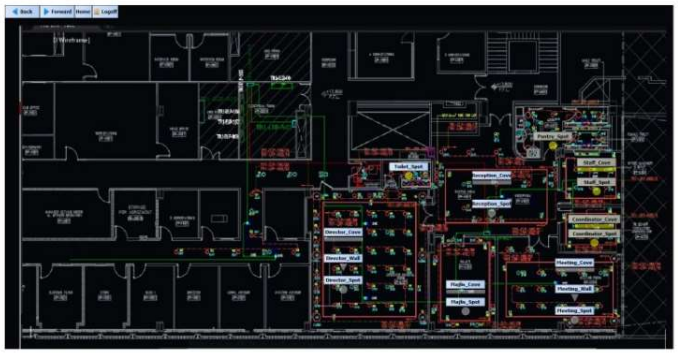
- KNX based HVAC control , based on presence in the room the setpoint is adjusted to provide significant energy savings.

Energy Management

- System ensures highest level of energy efficiency in terms of lighting by optimizing right light intensity based on occupancy by combining dimming and lux sensors.

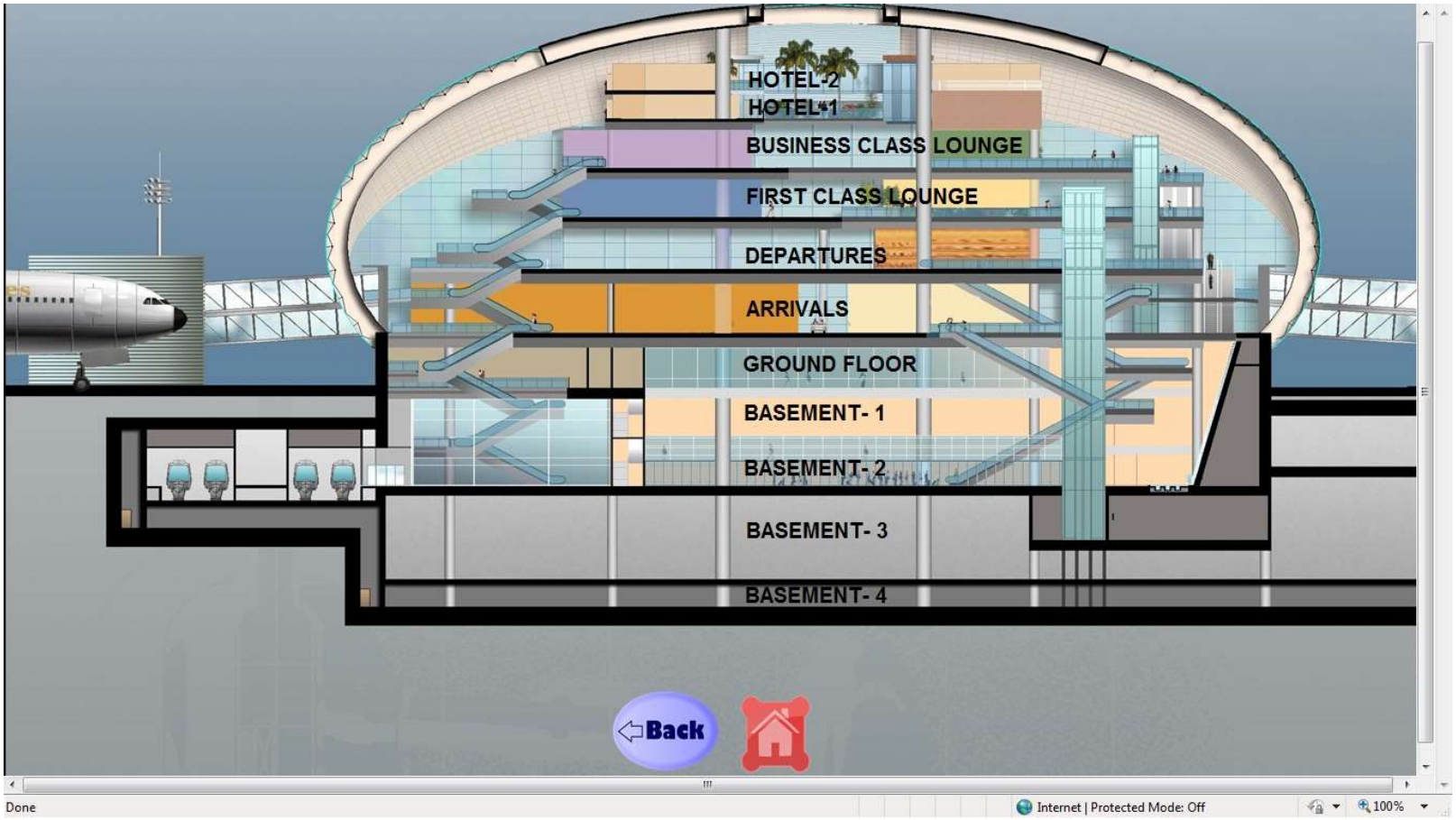
VISUALIZATION





Graphics - layout

VISUALIZATION



INTEGRATION

REMOTE CONTROL AND MONITORING SYSTEM

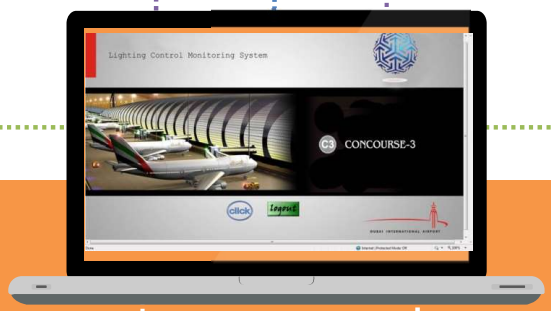
SCADA

Airport SCADA(BIS) for flight schedules

BUILDING MANAGEMENT SYSTEM

Panel Status, Override

SMART METERING



FIRE ALARM SYSTEM

AUDIO/VIDEO INTEGRATION

Via RS232 & IR

DALI - KNX INTEGRATION

INTEGRATION

- The customer demand in terms of integration in airport is very challenging and only KNX being an open protocol could comply to the requirement.
- The lighting control for individual gates are through the flight schedules which is automatically taken from the Airport SCADA system through integration.
- BMS integration (BACnet/IP) provides Panel Status, scheduling and manual override of the lighting control system.
- Fire Alarm Interface integrated with Fire alarm system overrides all other controls to turn on the lights in case of Fire or emergency.
- Smooth dimming is achieved using DALI based lighting system interfaced with KNX protocol using DALI-KNX gateways.
- KNX system implemented is integrated to audio/video system via RS232/IR in meeting rooms which provides central control using AV control units such as touch panels. Various scenes such as presentation/meetings are also achieved using this interface.
- Smart Metering is achieved in this project via switch actuators with inbuilt current sensing capabilities and KNX Energy Saver. All values are displayed and being monitored in the central server with graphical indicators showing area wise and location wise consumption.
- Remote Control and Monitoring provides hassle free maintenance of the system from remote location.

THANK YOU!

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