



PHILIPS

Commercial lighting

Case study

Burj Khalifa: a towering achievement

Behind the glimmering façade of the world's tallest building is a state-of-the-art lighting control system that sets new standards in lighting ambience and functionality.



Background

At over 828 metres, Burj Khalifa is a building that sets a lot of world records – the world's tallest building, fastest elevators, highest swimming pool and observation deck.

Opened in January 2010, the 160 floor mixed-use tower in Dubai features residences, corporate suites and the world's first Armani Hotel and residences.

Not surprisingly for a building of this height, it employed the latest advances in wind engineering, structural engineering, construction materials and technology.

The Philips Dyalite lighting control system is an example of the innovative technology used to meet the practical and logistical demands of a project of this magnitude.

The challenge

There were some highly specific and practical criteria that the lighting control system needed to meet: it had to be highly modular and distributed to accommodate all interior and exterior lighting; it had to be intelligent to support sophisticated programming requirements; and it had to be virtually invisible and easy to operate for the end-user.

Naturally, delivering ambient lighting to complement this dynamic architectural project was essential.

One of the key challenges of the project was to house controllers in a rack enclosure in a utilities cupboard.

The client also wanted a lighting control system that could accommodate potential changes in lighting design at the last minute.

The solution

Philips Dyalite designed an intelligent bespoke lighting control system that delivers the advanced functionality, flexibility and ambience necessary for a building of this magnitude and quality.

The hundreds of guestrooms, residences and offices housed within Burj Khalifa each contain a lighting control and automation system founded on the same basic architecture.

The modular multipurpose controllers are fixed in a rack enclosure that was specially modified by Philips Dyalite to fit within a utilities cupboard.

The entire network features built-in intelligence, designed with appropriate levels of isolation right down to room level so if the computer head-end goes down it doesn't affect room operation.

Above all, the system is user friendly and delivers the appropriate lighting scheme according to the time of day and the user's location within a room with the press of a button on the user interface.

Every suite on every floor is linked to a central control room via 13 separate DyNet riser trunks.

Philips Dyalite EnvisionManager software acts as the system head-end in the control room, providing control, status and scheduling information.

Over 7,000 Philips Dyalite multipurpose controllers have been installed within the building, each one configured to a specific load schedule. Philips Dyalite's uniquely modular controller design allows different output modules to be 'plugged' into the motherboard.



It allowed minor changes in the system design to be accommodated right up to the last minute.

Over 14,000 Revolution user interfaces were installed throughout the tower, with each suite containing up to ten slim-line fascia-matched user interfaces. In-built intelligence ensures the user interfaces retain their programming when disconnected from the communications network.

Benefits

The intelligent design of the Philips Dynalite lighting control system has made it possible to deliver functional and responsive lighting that is largely invisible to the end-user in keeping with the building's discreet luxury design.

The lighting control system seamlessly delivers innovative and clever interior and exterior lighting.

Fast facts

Project:

Burj Khalifa

Location:

Dubai, UAE

Developer:

Emaar Properties

Architect:

Adrian D. Smith – SOM

Products:

DR2PE Revolution Series User Interfaces, DDMC802 Multipurpose Modular Controllers, EnvisionGateway 10/100 BaseT Gateway, EnvisionManager System Software

“Creating a lighting control system for the world’s tallest building was no small job but the Philips Dynalite solution is an integrated system capable of delivering for every imaginable scenario in this landmark building.”



www.philips.com/dynalite

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