Sydney Town Hall

– illuminating a heritage building

When the 140 year old Sydney Town Hall, Australia's finest High Victorian building, underwent a $40 million upgrade to its major essential services as part of a long-term rescue plan for the historic building, the city seized the opportunity to improve its energy-efficiency as well.

Installing 1700 energy efficient lights as well as more than 58 kilometres of electrical cabling, 1200 fire sprinklers and 240 solar panels in an iconic and heritage building required a sensitive solution that not only showcased the beauty of the building but respected its historic significance.

Philips Dynalite automated control system seamlessly and flawlessly met the challenge to illuminate and provide high levels of operational efficiency in the refurbished Sydney Town Hall.

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Client requirements

Embarking on a renovation of this size was challenging in itself, but maintaining the historical and cultural features of the original building while installing energy-efficient lighting and control systems required vigilant planning and implementation.

The Sydney Town Hall is home to a variety of events and functions – concerts, civic ceremonies, exhibitions, council meetings – held in different parts of the building during the day and at night, which called for a control system that would suit multiple and concurrent events.

The system also had to be integrated with a building management system with additional security access features to prevent unauthorised people from adjusting the lighting.

It was also imperative that the new lighting provided high levels of operational efficiency.

The Philips Dynalite solution

The Philips Dynalite solution offers more than an conventional lighting control system.

It's an outstanding example of the power and versatility of the system as it effortlessly manages lighting requirements for all areas of the building including function spaces such as the Centennial Hall and the Peace Hall; meeting offices and amenities rooms; as well as the new Lower Town Hall exhibition and venue space.

The high level integration of Philips Dynalite automation controls with the building management system (BMS) is extensive and multi-functional.

Balancing heritage with technology

One of the challenges during the project was balancing the need to efficiently run modern cabling through the building while preserving the heritage features and decoration.

To conceal much of the 58 kilometres of new electrical wiring and network cabling throughout the building, the electricians were able to use the old gaslight pipes and coal chutes as conduits.

Integrated lighting control

More than 1700 new, energy-efficient light fittings were installed as part of the electrical refurbishment. Matching an appropriate controller to the wide range of luminaires and lamp sources in the building – including incandescent, fluorescent, metal halides and LED – was another challenge.

Although priceless, the spectacular crystal chandeliers hanging in the building were expensive to maintain. Philips Dynalite specified leading edge dimmers with true voltage regulation, high rise time and soft-start capability to dramatically reduce the lamp replacement and ongoing maintenance costs.

Council Chambers

Lower Town Hall exhibition and venue space.

Products and technology used

The lighting control system has been integrated with the Sydney Town Hall scheduling system via a high level interface to the Building Management System (BMS).

Sophisticated software

When an event is booked through the BMS, it automatically sets up a sequence of lighting control events eliminating the need for entering the same data in multiple systems.

Sophisticated software sets up times and appropriate light levels for the 'bump in', the performance and the 'bump out', eliminating the need for staff to interact with multiple servers within the building.

Philips Dynalite head-end software runs in the background to allow authorised staff to over-ride the system from local control panels.

A touchscreen panel mounted behind the stage displays floor plans of the whole building, which allows for adjustments to any part of the system.

Sensors saving money

Networked occupancy sensors were also used in offices, meeting rooms, amenities and back of house areas to ensure that lighting was not left on unnecessarily, providing a simple yet effective energy management solution.

In the Centennial Hall and the Peace Hall, all the Philips Dynalite controls are dual ported to receive messages from differing system control protocol standards (DMX), depending upon the event taking place.

A simple and smart solution

During normal daytime working hours the controllers respond to DyNet protocol messages sent from the many pushbutton panels and touchscreens as well as the commands from the integrated BMS services.

However, when a performance or event is about to commence, an entertainment style lighting mixing desk using the industry standard DMX protocol can be plugged in, which allows direct control of the dimmer channels, over-riding any messages across the network originating from the DyNet system. This is both a simple and smart solution for all users of the lighting control system.

This level of isolated control is essential so that an unauthorised person does not inadvertently adjust the lights during a performance or event.

At the end of a performance, the lighting control desk is unplugged and the system reverts to control by the local Philips Dynalite panels.

Key client benefits

The upgrade and associated internal renovations – the first comprehensive overhaul of building services since the 1930s – in Sydney Town Hall ensures the preservation of its many heritage features but brings its performance into the 21st century.

The use of innovative technology such as the Philips Dynalite control system has improved the environmental performance of the building and reduced energy consumption by around 30 per cent.

The Philips Dynalite control system has successfully blended modern lighting technology with a heritage building ensuring that energy is not consumed unnecessarily, while providing users with complete flexibility and control over their environment.

Images courtesy of City of Sydney

" Operational ease and energy management were key considerations in this heritage project. "

Modern control software for a heritage building
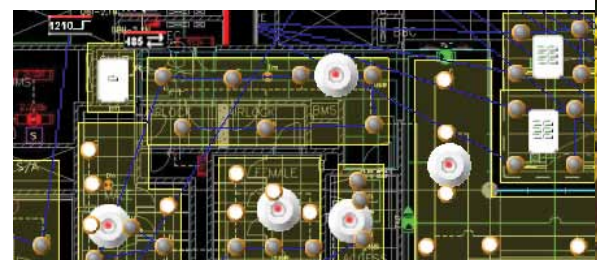
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