

# One Shelley Street

– office lighting gets six stars

Macquarie Group's iconic headquarters in Sydney's Kingstreet Wharf precinct, has set new standards in environmental sustainability and workplace functionality achieving a coveted 6 star Green Star rating from the Green Building Council of Australia.

Built, owned and managed by Brookfield, the property complex incorporates a range of revolutionary technologies such as harbour water cooling, passive chilled beam airconditioning and an innovative lighting control system.

Architecturally, the 11-level 33,000 square metre complex makes a dramatic statement comprising two-window dressed buildings separated by a central atrium. Internally, the building

has a strong focus on workplace functionality and environmental sustainability with large open plan office areas and meeting rooms jutting into the sun lit atrium cavity, taking advantage of natural light.

Only the third building in Sydney to be awarded a 6 star rating, the use of both natural and artificial light played a key role in the building's Green Star accreditation.

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## Client requirements



One of the key sustainability initiatives required to reach a 6 Star Green Star rating was an intelligent centralised lighting control system that would manage lighting energy consumption for the entire building.

### Built-in flexibility

A key consideration was building in flexibility in the lighting control system to cater for different lighting scenarios in the open plan office environment. It was also crucial that the lighting could be easily reconfigured for future tenant needs.

The client also specified that the lighting control system be able to feed information to the building management system (BMS).

## The Philips Dyalite solution

The innovative design of the building allows natural light to flow into the building, which is complemented by the Philips Dyalite advanced lighting control and energy management system.

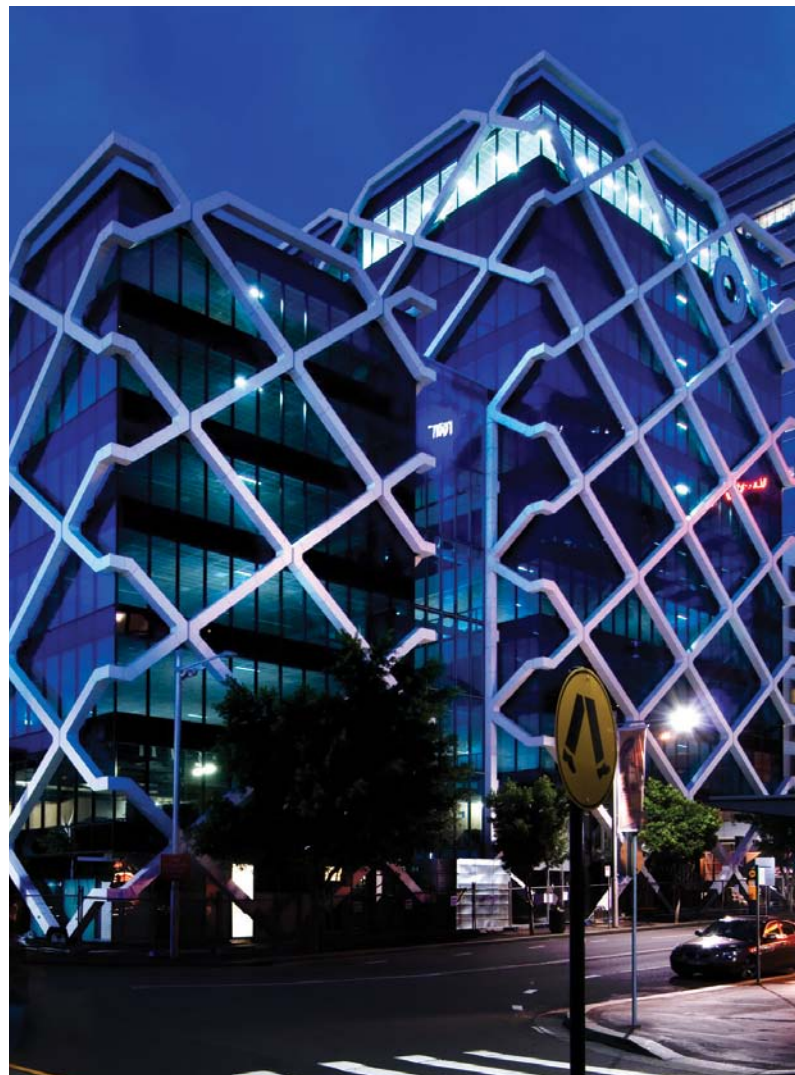
Importantly, the lighting control design incorporates several strategies to optimise energy consumption.

The lighting system allows zone switching and dimming flexibility to ensure no areas of the building are over-lit or illuminated when not in use.

### Intelligent programming

The lighting system is programmed to operate in two distinct modes – ‘trading’ and ‘after hours’ – which are timer based. While timing and functionality is individually configurable for each floor/zone, ‘lights on’ begins at the start of trading, followed by a timed sequence of dimming to ‘lights off’ when the system goes into after hours mode. In after hours mode, motion sensors in amenities areas and lift lobbies switch on lighting if movement is detected.

In trading mode, daylight harvesting sensors dim perimeter lighting, taking advantage of natural light.



## Products and technology used

To ensure lighting flexibility in the open plan office areas, the digital addressable lighting interface (DALI) was chosen. A single DALI network can control up to 64 individually addressable DALI devices including fluorescent ballasts. These 64 ballasts can be configured into an unlimited combination of areas, by using the Philips Dyalite system.

### Conserving energy

The Philips Dyalite DDBC320 DALI controller – the only one on the market that can control up to three DALI networks per controller – made it possible to install a single controller in each quadrant to allow all DALI ballasts to be individually dimmed or switched.

The DDBC320 DALI controller also powers down the DALI networks when not in use to conserve energy.

The Philips Dyalite EnvisionManager graphical user interface provides a visual overview of the entire lighting system,

which makes it easy to reconfigure zones on each floor and temporarily or permanently adjust scenes.

The easy-to-use system allows the building manager to access any part of the system with a click of a mouse.

### Individual control

Importantly, employees can control the lighting in their workspace via the Philips Dyalite touchscreens installed on each floor of the building. The touchscreens are also used to put the lighting system into after house cleaning mode when required.

The lighting control system is based on the Philips Dyalite DyNet, a sophisticated peer-to-peer communications serial bus network which links all the controllers with over 300 multifunction sensors and 75 touchscreens throughout the building.

## Key client benefits

There's no doubt that the Philips Dyalite advanced lighting control system was integral in One Shelley Street achieving a 6 Star Green Star rating.

Not only has the system optimised energy consumption, it has also delivered a lighting power density of just over 5W per square metre, significantly below the targeted 9W per square metre.

Using a combination of motion and light sensors along with timed events, the flexible lighting control system effectively delivers optimum lighting to enhance workplace productivity and energy efficiency.

“ The Philips Dyalite advanced lighting control system has enabled One Shelley Street to achieve a 6 Star Green Star rating. ”

