

Rialto Towers

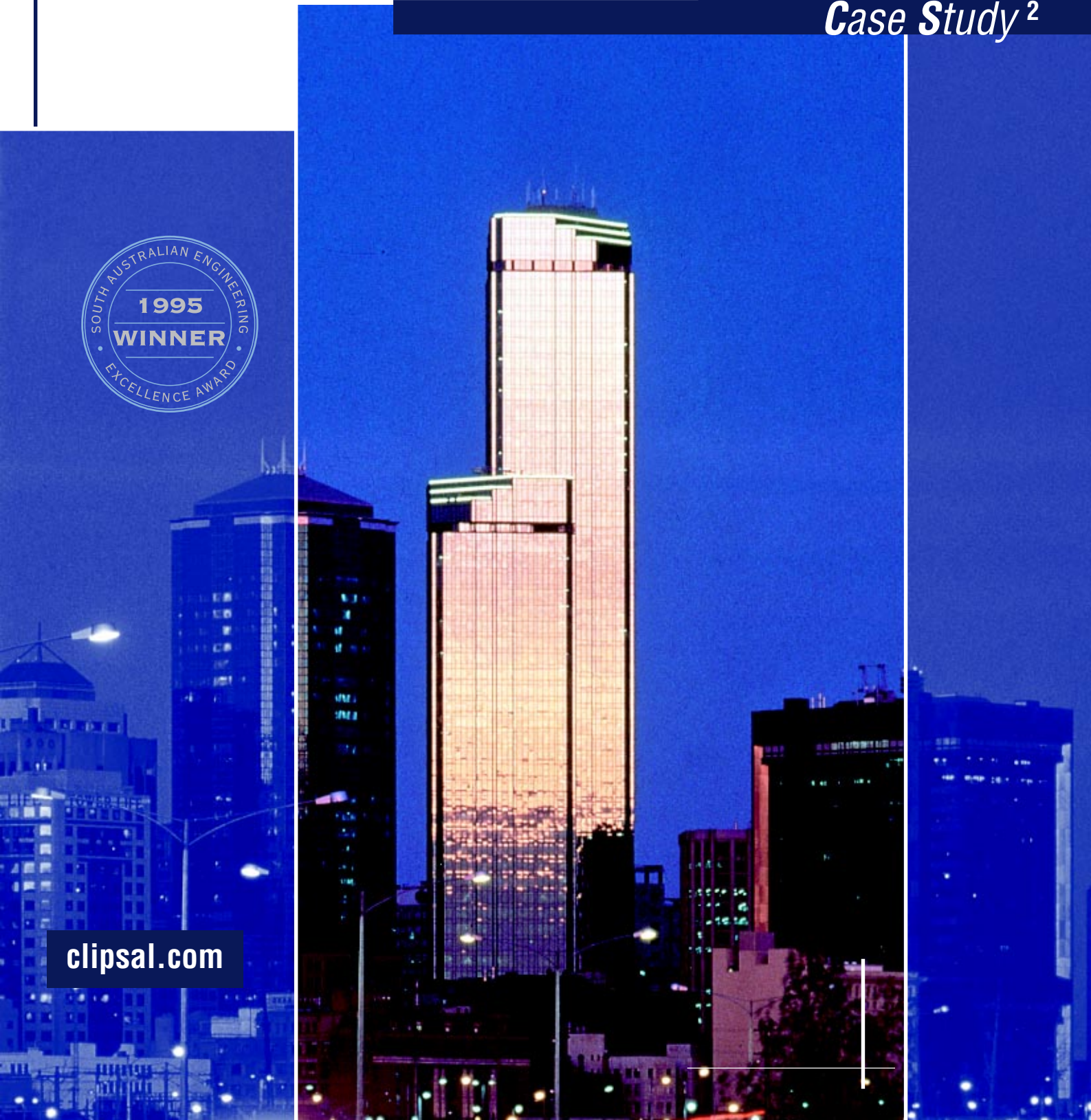
MELBOURNE

C-Bus Energy Management System

*Case Study*²



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Lighting Management in Australia's Tallest Building

O'Donnell Griffin, the electrical contractor to Melbourne's Rialto Towers, was first introduced to the Clipsal C-Bus Lighting Management System during a site visit by a Clipsal C-Bus Technical Consultant. The system was retrofitted for legal firm, Mallesons Stephen Jaques, initially for office lighting on the 30th Floor of the South Tower of the Rialto Towers.

Impressed by the flexibility of the system and energy saving benefits, the client proceeded to upgrade a further 3 floors of the building with a view to fitting out 6 floors in each of the Northern and Southern Towers, 12 floors in total.

The Building

When completed in 1985, the Rialto Towers became the tallest building in Australia. Mallesons Stephen Jaques occupies 12 floors of the Rialto Towers, with forty offices located on each floor. 24 offices are located on the perimeter, featuring large amounts of natural ambient light while a further 16 offices, secretarial areas, store rooms and service areas such as elevators and toilet facilities are located internally. Artificial lighting is provided on each floor by twin 36W recessed luminaires, 13W PL and twin 9W PL downlight luminaires.

C-Bus switches can be programmed to provide on/off, dimmer or timer functions.

The Requirements

Mallesons Stephen Jaques set out to establish an effective and efficient lighting system that would maximise energy savings. O'Donnell Griffin insisted on a system that could be monitored and controlled from a central location, allowing flexibility for future additions and changes without the need for rewiring.

Designing the System

Each floor was networked through a C-Bus Network Bridge, providing electrical isolation between the networks but permitting data flow between them. Each network can be changed or added to without interfering with any other network.

The system required C-Bus Voltage Free Relays to switch luminaires controlled from C-Bus Infrascans and C-Bus Key Inputs. The C-Bus Power Supplies and PC Interface were powered from the building's Stand-by Power Supply while the Relay Load Units were powered from the Normal and Stand-by Power Supplies. If power is ever lost, the C-Bus will remain operative while C-Bus control via the PC remains intact. An advantage of C-Bus is that any unit can be powered from any phase.

Utilisation of Existing Wiring

Clipsal utilised Voltage Free Relay Units to connect to the existing Bevisco wiring loom. The Four Channel Voltage Free Relay Module can switch up to 10A per channel.

Effective Office Lighting

C-Bus Infrascan Occupancy Sensors were installed in office and service areas. When vacated, luminaires are turned off automatically after a timeout period set in the installation software. The timeout periods were adjusted to achieve optimum lighting performance and energy savings. Delay periods from 15 to 20 minutes were set depending on the particular application.

The Infrascans are of the passive infrared detection type. A microprocessor and embedded software ensure optimum detection while minimising false triggering. Up to 4 load circuits with different timeout periods can be controlled from one Infrascan.

PC Surveillance and Control

Another important benefit of the C-Bus System is that it offers trained personnel remote access using a PC and graphical interface program developed by Clipsal. The PC is located in a secure area with restricted access. The software can also be secured by a password if required. In this way the client can remotely control and monitor the status of lighting on any floor.

A further advantage is that the building manager can add new units to the system, change program setups and perform maintenance operations on the system without the need to call in Clipsal specialists. This results in direct operational cost savings and reduced down times.



Reduced Electricity Bills

The most important saving is seen in reduced electricity bills. To monitor the energy savings, O'Donnell Griffin connected a kW.h meter to the mains on the 30th floor. Another kW.h meter was connected to another floor which has an identical lighting and power arrangement but uses conventional hard wired lighting control.

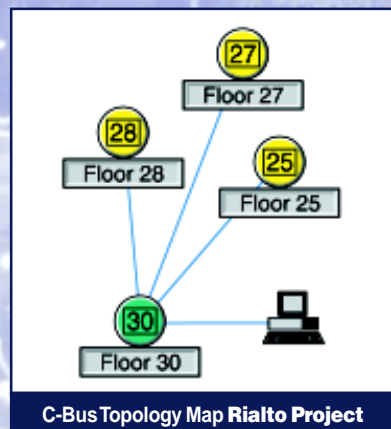
To date these readings have well and truly met all expectations with measured energy savings on the C-Bus floor of 2,310 kW.h per month (based on a 28 day month). This equates to \$438.20 per month on the D Tariff of 18.97 cents per kW.h (peak). Based on this figure, a payback period of just over two and a half years has been calculated.

Long Term Benefits

The benefits to Mallesons Stephen Jaques are many. C-Bus has provided the firm with a completely automated lighting system, featuring greater lighting efficiency with significantly reduced energy bills.

Ongoing reduced electricity bills will see the C-Bus System pay for itself many times over in future years.

Further cost saving benefits of C-Bus will occur if the office plan requires adjustments in the future. The lighting system will be simply reprogrammed without hefty rewiring costs.



Network Topology showing C-Bus Network for Rialto.

The Benefits of C-Bus Control

Features	Benefits
C-Bus compatibility with existing wiring	Reduced cabling expense
Timeout periods in offices, work stations, corridors and toilets	Minimum necessary lighting used
PC surveillance and control	Convenient remote access
Reduced electricity bills	Reduced operational costs
Products available from electrical wholesalers	Reduction of maintenance costs, and no need to call specialists to reconfigure the system



Installation Data - 30th floor

Project	Rialto Towers, Melbourne, VIC
Client	Mallesons Stephen Jaques
Electrical Contractor	O'Donnell Griffin
C-Bus Products Used	5104RVF Four Channel Voltage Free Relay 5751PIR Occupancy Sensor 5031N One Gang Key Input 5100B Network Bridge 5100PS Power Supply, 320mA 5100PC PC Interface
C-Bus Costs (approx.*)	\$14,600
Savings Per Annum~	\$5,258
Simple Payback Period	2.8 years
C-Bus Cost Per Square Metre	\$12/m ²
Total C-Bus Project Value	\$43,800

* Costs quoted are at TRADE PRICING levels, at the time of installation.

~ While every effort and care has been made to ensure that the data presented is correct, Gerard Industries Pty Ltd will not be liable for any omissions or errors.

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