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INTEGRATED SYSTEMS

EDS Centre

ADELAIDE

C-Bus Control and Management System

Case Study 10

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Building **Management** at Australia's **S**martest **A**ddress

The new state-of-the-art EDS Centre at 108 North Terrace, Adelaide, is set to become a showcase for the local IT industry, as it enables the EDS to demonstrate and use leading edge technologies and services.

About five hundred of the company's 760 South Australian employees occupy almost five floors of the EDS Centre, with many supporting the information technology infrastructure contract that EDS has with the South Australian Government.

Hansen Yuncken Pty Ltd constructed the building with anchor tenant EDS in mind. Hansen Yuncken and consulting engineers Bestec Pty Ltd, wanted an energy efficient system that could provide a superior lighting infrastructure.

The Clipsal C-Bus Control and Management System met these criteria and was specified because of its proven track record in building management and its local manufacture and support.

Lighting is activated via a combination of manual switching and automatic control by Photoelectric and Movement Sensors.

Total Control and System Programming via C-Bus Network Topology

A networked C-Bus solution was adopted for the project, whereby C-Bus Network Bridges were used on each floor to permit control and system programming from the Plant Room to any location in the building.

Network Bridges were connected via an Unshielded Twisted Pair C-Bus cable located in the riser of the building.

Each floor of the building was divided into four quadrants, interconnected via Network Bridges, which permitted communication between networks, while at the same time providing electrical isolation.

This means that any quadrant can be shut down, without affecting the operation of C-Bus in any other part of the building.

The EDS Centre, Adelaide, set to become a showcase for the local IT industry.

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Substantial Energy Savings with C-Bus Lighting

The lighting consists of 3300 twin 36 watt Pierlite, Ultra Low Brightness Fluorescent Lights, with approximately 300 light fittings per floor.

The fittings were customised to suit a metric ceiling grid with specially designed louvres minimising glare on computer screens, and incorporating return air slots for the airconditioning system.

An electronic dimmable ballast was fitted to each light fitting, with a control range from 3-100%.

A C-Bus One Channel Relay was used to control two electronic ballasts.

The C-Bus Relay Module, which consists of a 10A switched active output and 0-10V analogue output, was used to switch power and provide the analogue control signal to the eletronic ballast.

Ultrasonic Movement Sensor

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Passive Infra-red Occupancy Sensor

Photoelectric and Movement Sensors

Lighting is activated via a combination of manual switching and automatic control by Photoelectric and Movement Sensors, all controlled via C-Bus.

The Ultrasonic Sensors are located throughout the open plan corridor and access areas. Ultrasonic Sensors were chosen for their superior detection capability and wide coverage area, up to 12m x 12m. They are programmed to turn lights off at 8 minutes in office areas and 10 minutes in passageways.

Passive Infra-red Occupancy Sensors and Manual Switching are used to control lighting in the building's conference rooms and offices. In automatic mode, the Occupancy Sensors will turn lights off automatically after a period of approximately 15 to 20 minutes.

For added convenience, such as video presentations, lighting in the conference room can easily be manually overridden via the C-Bus system. Video conferencing rooms use low voltage lighting which is dimmed via C-Bus.

Photoelectric Cells were used throughout the building to achieve a consistent minimum illuminance of 320 lux, regardless of the ambient lighting conditions.

Lighting is progressively shut down from 8pm every night. If any area is occupied, local control such as C-Bus Key Inputs or Movement Sensors automatically override the shut down commands.

In the future, if the lighting configuration needs to be altered or changes made to the office layout, there is no need for major rewiring. The lighting patterns and switching can be simply reprogrammed via the user friendly Windows™ application installation software.

The use of the Photoelectric and Movement Sensors represents considerable energy savings over conventional lighting configurations.

The Benefits of C-Bus Control

Features	Benefits
System design incorporates Photoelectric and Movement Sensors.	Results in energy saving, increased life of light fittings and reduced maintenance costs. Reduced loading on air-conditioning systems and reduction of greenhouse gases.
One C-Bus Relay is fitted to every second lighting luminaire.	Enables flexibilty with upgrades and changes to light switching patterns easily achieved by reprogramming without the need to rewire.
Manual Switching local overrides in conference rooms disable Movement Sensors.	Automatic and manual control is possible to facilitate video presentations, etc.
Automatic shut down sequence with local overrides.	Only areas requiring lights after 8pm are to remain on, resulting in energy and cost savings.

Installation Data

C-Bus Project	EDS Australia Centre, 108 North Terrace Adelaide South Australia
Builder	Hansen Yuncken Pty Ltd
Consulting Engineer	Bestec Pty Ltd
C-Bus Trade Costs (Approximate)	$100,000

These features were recognised by the Master Builder's Association, South Australia, which judged the EDS Centre as the most energy efficient building in the Commercial or Residential Category at its 1999 Awards.

The flexibility of the C-Bus system, together with reduced energy consumption and reduction of maintenance costs, ensures a short payback period for the owners of the building.

Photoelectric Cells measure light levels to ensure a minimum illuminance of 320 lux.

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Products of
Clipsal Integrated Systems Pty Ltd
ABN 15 089 444 931

Head Office
12 Park Terrace, Bowden
South Australia 5007

PO Box 103 Hindmarsh
South Australia 5007
Telephone (08) 8269 0560
International +61 8 8269 0560

Facsimile (08) 8346 0845
International +61 8 8346 0845

Internet www.clipsal.com/cis
E-Mail cis@clipsal.com.au

Offices in all States

NSW	Sydney	(02) 9794 9200
	Albury	(02) 6041 2377
VIC	Melbourne	(03) 9207 3200
	Country Areas	1800 653 893
QLD	Brisbane	(07) 3244 7444
	Townsville	(07) 4729 3333
SA	Adelaide	(08) 8268 0400
WA	Perth	(08) 9442 4444
TAS	Hobart	(03) 6272 3177
	Launceston	(03) 6343 5900
NT	Darwin	(08) 8947 0278

International Enquiries

Head Office Export Department
Telephone +61 8 8269 0587
Facsimile +61 8 8340 7350
E-Mail export@clipsal.com.au

New Zealand
Clipsal Industries (NZ) Ltd (Auckland)
Telephone +64 9 576 3403
Facsimile +64 9 576 1015
E-Mail headoffice@clipsal.co.nz

Customer Service
Free Facsimile (0508) 250 305
Auckland/
Mobile Phone (09) 572 0014
Free Phone (0508) CLIPSAL
2547725

Malaysia
Clipsal Integrated Systems (M) Sdn Bhd
Level 3, Unit 3-2, C P Tower
Jalan Damansara
46350 Petaling Jaya
Telephone +60 3 7665 3555
Facsimile +60 3 7665 3155
E-Mail
clipsal@clipsaltech.com.my

Singapore
CIS Pte Ltd (Singapore)
No. 8, Jurong Town Hall Road
#24-05-06 The JTC Summit
Singapore 609434
Telephone +65 266 1998
Facsimile +65 266 3922
E-Mail clipsal@clipsaltech.com.sg

International Representatives

China
Clipsal China Ltd
Telephone +86 755 246 1122

Greece
Clipsal Hellas S.A.
Telephone +30 1 0993 9165

Hong Kong
Clipsal Integrated Systems (HK) Limited
Telephone +852 2 487 0261

South Africa
Clipsal South Africa (Pty) Ltd
Telephone +27 11 314 5200

Taiwan
Clipsal (Taiwan) Co Ltd
Telephone +886 2 2558 3456

Thailand
Clipsal Thailand Ltd
Telephone +66 2 952 5338

United Kingdom
Clipsal Ltd (UK)
Telephone +44 1494 521 111

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