



Main pics courtesy Lutron



Luxury or efficiency?

Lighting control continues to be an important component of home automation projects, as **David Davies** discovers from manufacturers and integrators

To paraphrase the great writer George Orwell, all elements in a home automation system are equal, but some elements are more equal than others. Or, to put it another way, lighting, heating and security – extremely important; the ability to control your audio system from the downstairs loo – rather less so.

“Lighting control is obviously very important as you can live without audio and video, but not without lights,” affirms Crestron residential sales manager Phil Solomons, and it is hard to disagree. From straightforward ambience-setting to being an integral part of a cutting-edge security installation, lighting is fundamental to our notions of the automated house.

It does not take long to realise, therefore, that lighting control has been one of the key drivers behind the development of the residential automation business per se. For new builds and retrofits alike, it continues to be near the top of the installation priority list and, if anything, is actually increasing in importance as more and more people acknowledge the contribution that an efficient and effectively-controlled lighting system can play in reducing household energy consumption.

The impact of more stringent building and wiring regulations – more of which anon – should also not be underestimated, while the growing tendency to make lighting part of an integrated home system also demands to be taken into account. In short, it’s a time of significant change in the lighting



‘A key benefit of a hardwired system... is that cabling provides the data backbone for the entire smart home’

Phil Main, Dynalite

control sector, making this an ideal juncture at which to take stock and consider the likely way forward.

Top of the shop

First of all, how exactly did we get to the point where ‘sophisticated lighting control’ seems to be on the lips of nearly every commercial and private property developer? The contribution it can make to design and aesthetics, the suitability of many lighting control systems to serve as the primary integration infrastructure for a home, and the need for developers to offer genuine value extras are just a few of the factors that come to mind.

Guy Simmonds, European business development manager (home systems) at Lutron, believes that the trend can be traced back to home theatres. “Many homeowners first appreciated the benefits of lighting control when used in a home cinema environment – obvious really – and that has now spread through the principal living areas of the house to give multi-room and whole house systems,” he says.

“Very often the whole house lighting control system, such as our own HomeWorks system, becomes the main infrastructure of the home, with the processor driving many other integrated third party components. Developers and architects have influenced that rise through their recognition of light as a tool to enhance aesthetics.”

“There is the obvious interior design crossover as lighting control can really accentuate any features in the property and change the look and feel in subtle, but impactful ways,” says Ian Trudgeon from UK integrator Thinking Bricks, which currently favours Rako Controls’ lighting systems, with Lutron as an



Pics courtesy Dynalite

option for more advanced or full integration systems.

Trudgeon adds a word of warning, however: “Frequently as a project progresses, lighting control can be prone to roll back to rotary dimmers or plain switches. It is our job to sell, and continue to sell, the advantages of lighting control throughout the project.”

Nonetheless, pretty much everyone agrees that the case for lighting control is growing stronger with every passing year, not least because of the role that such systems can play in the creation of a ‘green’ home. “I think the key selling point currently is the ‘green factor,’” agrees Trudgeon. “Using lighting efficiently has become a major consideration.”

The current economic conditions are also helping to shape demand. With the previously vibrant European property market having gone into a tailspin in the last six months, many developers have been left with unsold new builds on their hands. All of a sudden, there are too many luxury apartments and refurbished town houses for too few buyers, and it stands to reason that developers are looking to add distinguishing features in a depressed market.

“Developers need to add a bit of glitz to help sell the properties and make them stand out from the com-

petition,” confirms Paul Wafer from lighting control technology developer Rako Controls.

Part and parcel of this development appears to be a change in the relationship between property developers and their potential audiences. It’s a transition that was neatly encapsulated by David Dobouny, chief executive officer of home automation and guest room management integrator One Media Controls (OMC) Middle East, for a regional focus article that appeared in the April 2009 issue of *RSE’s* sister publication, *Installation Europe*.

“Developers who can perceive the market conditions are becoming more focused on the owner/occupier than the speculator,” Dobouny told me. “They are more concerned about the end product than was previously the case. They are more likely to want to sell a finished product, and this means looking for points of differentiation – one of which is home automation.”

New regulations

Even as orders continue to roll in for lighting control systems, however, the lighting market that they serve is undergoing profound change. New regulations concerning energy efficiency and wiring standards are having a significant impact on light-

LAVISH LONDON INSTALL FOR DYNALITE

Equipment from Dyalnite plays a pivotal role in a home automation control system installed at a prestigious eight-bedroom residence in South London.

Orchard House incorporates three floors, an adjoining indoor swimming pool and spa complex, a multiple-car garage, a security lodge, a cinema, a library, four separate living rooms and dedicated staff accommodation.

The fully automated Dyalnite system controls the light circuits, air conditioning, underfloor heating and gas fires in the main living rooms. It constitutes a crucial component of the home automation installation carried out by Kent-based CEI.

Located at the entrance to the building, the colour touch-screen control panel for the Dyalnite system enables the user to control and adjust the lighting in each of the rooms, as well as the pool area, sauna and steam rooms.

Each of the controllers on the main



Pics courtesy Dyalnite

control panel can be used to raise or lower the level of light, allowing the user to create their required ambience or mood-lighting combination. Mood settings can be recalled at the press of a single button; alternatively, the operator can alter the settings via the touch-screen to reflect their current mood.

In order to reduce energy wastage and to extend lamp life,

the lighting control system has been programmed to operate all of the dimmed lighting circuits at 95%. Ballast controllers have been incorporated into the design to enable the Dyalnite system to dim all the circuits, including cold-cathode varieties.

Other notable features of the lighting installation include passive infrareds (PIRs) with daylight sensors in the centrally positioned



glass atrium area. The PIRs enable the Dyalnite system to detect when natural light reaches the designated lux level and then automatically extinguishes the appropriate lighting circuits to reduce energy wastage.

Each of the house's climate-control systems is fully integrated into the Dyalnite network, including the under-floor water heating system and air-conditioning sys-

tem, which is integrated via a Lon-Works interface. This solution enables the heating and air-conditioning systems to be linked to Dyalnite's organic light-emitting diode (OLED) displays that are built into the control panels.

According to the manufacturer, the Dyalnite system at Orchard House "sets a new benchmark for future home automation and lighting management projects".

CASE STUDY

ing suppliers, with inevitable knock-on effects for control manufacturers and integrators.

Lighting has long been a priority topic in the energy efficiency debate, and is correspondingly well-represented in both national and international 'action plans' and directives. Arguably, it was the European Parliament's wide-ranging 2002 directive on the energy performance of buildings that set the ball rolling, with its call for major renovations to be regarded as "an opportunity to take cost-effective measures to enhance energy performance", among many other requirements. The directive has since been adopted by states across the European Union.

More recently, the decision by EU energy ministers in October 2008 to ban incandescent light bulbs across all 27 member states with effect from 2010 has dramatically heightened awareness of new generation, energy-saving light fittings and the need to devise an orderly transition for individuals and businesses. (As an aside, it was recently reported that the UK Palace of Westminster has saved 61% of its energy costs by moving to low energy bulbs!)

For dimmer control manufacturers like Rako, the new lighting landscape is not without its challenges. "Under the new building regulations, 25% of lighting has to be energy efficient, and the problem is that lamp manufacturers don't tend to worry about dimming when designing their lamps - they simply look to make the fittings efficient," says Wafer.

The primary issue for control manufacturers is the impermanent nature of the electrical connection in fluorescent lamps. As Wafer notes, dimmers and new generation lamps are intrinsically working in opposition, requiring "manufacturers to put in a lot of electrical components to try and ensure fluorescent lamps stay on and dim with reducing voltage supply. It's quite complicated; the technology is getting there, but it is not really 100% reliable at this point."

Wafer adds that the advent of

new, easily dimmable high-efficiency tungsten lamps may help to resolve the problem.



'Five years ago, the control of lighting was about 90% of a home and building automation system'

Erik De Waele, Luxom

Crestron's Phil Solomons says the company has taken the necessary action. "The new generation light fittings mean we have had to make specific dimmers to control them, but we have done so."

Increasingly demanding wiring regulations for commercial, domestic and industrial electrical installation works have also forced a rethink. In the UK, these have manifested themselves in the latest version of the Institute of Engineering and Technology's IEE Wiring Regulations. Incorporating signifi-

Structured Cable Products

Quality Installations Deserve Quality Products

SCP, a leading manufacturer of low voltage wire and accessory products in USA, is proud to announce the **Grand Opening** of its new location in the **UK**.

HDMI™ CAT5E EXTENDER SET

The HDMI™ CAT5E Extender Set uses CAT-5E/6 cables as the transmission media. This enables easy HDMI™ installation over a long distance.

- HDCP compliant
- Follows the IEEE-568B standard.
- Signaling rates up to 2.25Gbits in support of 1080p display.
- Transmission distance reaches up to 35m with CAT5E or 50m with CAT6.

HDMI™ CABLE

- 1080p | 1080i | 720p | Surround Sound
- CL3 (In Wall) Rated
- HDCP Compliant
- 24K Gold Plated
- FPED Dielectric
- AT5 Shield
- UL Approved
- ATC Approved
- HDMI 1.3b

50.75 & 100 ft. HDMI cables come with built-in repeater

HDMI cable lengths:

- 1.00 m
- 1.75 m
- 3.00 m
- 4.50 m
- 9.00 m
- 15.00 m with repeater
- 22.75 m with repeater
- 30.00 m with repeater

VOICE/DATA & AUDIO

ALSO AVAILABLE IN LSZH

CAT5E

24 AWG BC
350 MHz

CAT6

23 AWG BC
550 MHz

AUDIO

• Oxygen Free
16/2 • 16ga: 65 strands
16/4 • 14ga: 105 strands
14/2
14/4

CRESTRON™ SYSTEM CABLE

ALSO AVAILABLE IN LSZH

CRESTNET

1 pair 22 ga str shielded + 2C/18ga str

CREST-3

1 pair 22 ga str shielded + 2C/18ga str + 2x CAT 5E

CREST-5

1 pair 22 ga + 2C/18ga + 2x CAT 5E + 2x 24RG6/U

CREST-2

1 pair 22 ga str shielded + 2C/18ga str + 1x CAT 5E

CREST-4

1 pair 22 ga str shielded + 2C/18ga str + 4x CAT 5E

STRUCTURED WIRE

HNC-1

1x CAT 5E + 1xRG6/U Quad Shield (Siamese)

HNC-4

1x CAT 5E + 1x4C/16 ga Speaker Cable (Siamese)

HNC-2

2x CAT 5E + 2xRG6/U Quad Shield (Bundled)

HNC-8

2x CAT 6 + 2xRG6/U Quad Shield (Bundled)

Corporate Office: 6228 Hiatus Road, Tamarac, FL 33321, USA. Tel: +1 (954) 327-5770. Fax: +1 (954) 327-8176. Call for more information.

UK Warehouse: Wrecclesham, Farnham, Surrey GU10 4PL, UK. **+1252 747 586**

For inquiries please email us at: sales@scpcat5e.com
SEE OUR COMPLETE PRODUCT LINE ONLINE AT www.scpcat5e.com

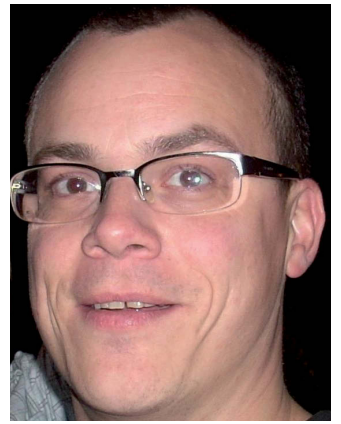
UL, CE, RoHS, LSZH, GEDIA, RoHS, LSZH

Manufacturer & Supplier of Low Voltage Wire, Cable and Accessories

HDMI, Security, Fire Alarm, Voice & Data, CCTV, HDTV, Structured Wiring, Coaxial, Audio /Video, Specialized Control, Direct Burial, Access Control



Pics courtesy Thinking Bricks



‘Lighting control can be prone to roll back to rotary dimmers or plain switches

Ian Trudgeon, Thinking Bricks

cant changes to ensure alignment with European documents, the 17th Edition regulations (BS 7671) came into effect on 1 June last year.

“The regulations call for enhanced protection of lighting circuits in certain environments,” explains Guy Simmonds. “Lutron has introduced a new control panel with integral breaker protection so that installers can buy an ‘off the shelf’ solution as needed.”

Crestron has also risen to the challenge and recently introduced a new 17th Edition DIN Rail lighting control solution for the European market (see Box for full details). “The 17th Edition IEE regs are playing a huge part in how we specify and supply systems that can meet

these new regulations,” confirms Solomons. “Crestron was the first manufacturer to announce a lighting control system that is fully 17th Edition compliant. We can supply the RCBO breakers on every outgoing circuit, instead of a system that just protects the dimming module inputs, as some of our competitors have to do.”

The impact of the changes on integrators appears to be less dramatic. David Skelton, AV manager at Kent-based integrator CEI Europe says that the 17th edition regulations have had “a slight impact on us and forced us to raise our prices due to the new regs we have to meet”.

Thinking Bricks’ Trudgeon, meanwhile, emphasises the importance of partnership in this new, more heavily regulated era. “It has become key to befriend and work coherently with the electrical contractors on our projects,” he notes. “They have the knowledge and practical ability to ensure that the regulations are followed. We have found that large electrical contractors are well set-up to absorb the requirements we have and work with us on recent projects.”

The necessary skills

Some projects now call on a wider skill-set – including that offered by lighting designers – to realise elaborate lighting installs.

“We have worked with two lighting designers, who were employed by the client directly,” says Trudgeon. “We always ensure we set out our role in the early stages as the ‘controllers’ of the lighting system. We don’t involve ourselves in the specification of the fitments, or sit with a client choosing from a variety of Italian lighting brochures. We take over once we have the load schedule and understand what effects are required from the dimming of the lamps. This has worked well, and gives the client clear accountability for the ultimate sys-

tem they get to use everyday.”

Such a clearly demarcated division of labour may become increasingly useful as lighting takes its place in fully integrated home automation installs.

“Five years ago, the control of lighting was about 90% of a home and building automation system,” reflects Erik De Waele, managing director of Luxom. “Today, the customer also wants control of audio, video, heating, air-conditioning...”

CEI’s Skelton is among those to welcome this kind of convergence. “I think it’s a great thing that it’s all coming together,” he says. “It can become complicated to get three different systems talking to each other, but it definitely has its advantages –

including cosmetically, as you only have one panel controlling everything rather than three or four... On the other hand, it is vital that your client can use the system correctly, so if it’s going to be confusing for them it may be better to keep to three simple systems.”

Inevitably, increasing convergence will require lighting solution developers to reassess their market positioning. “You can’t just go in as a lighting solution provider,” believes Phil Main, residential segment manager for Dynalite. “A key benefit of a hardwired system such as Dynalite’s is that cabling provides the data backbone for the entire smart home, facilitating interconnectivity of third party

equipment on a single communications platform.”

Certainly, the conversation surrounding lighting control is becoming more complex. Lutron’s Simmonds pinpoints “the addition of motorised window systems and the environmental impact of using lighting controls” as being among the factors now informing the debate, and there are plenty more besides. The need for more education would appear to be inevitable, and indeed a number of leading manufacturers already run training courses. Increasingly, lighting control is rarely just that, and it may be that a further industry-wide shift is required to accommodate this trend. **RSE**



‘You can live without audio and video, but not without lights’

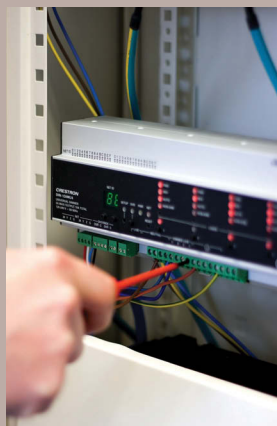
Phil Solomons, Crestron

CRESTRON LAUNCHES 17TH EDITION COMPLIANT DIN RAIL SOLUTIONS

Introduced by Crestron at ISE 2009 was a new 17th Edition-compliant lighting control solution for the UK market.

The new DIN Rail solutions feature 16 circuits with input breakers and output RCBO (necessary for 17th Edition compliance), are pre-built and shipped as a fully integrated solution with processor, adaptive modules, and all input and output protection. In addition, the system will report to a Crestron touch-screen regarding the energy that the lighting system is using at any one time.

A total of 10 new products are available, each designed to snap onto a standard DIN rail for installation in a wall-mount enclosure, equipment rack or on



a flat panel.

The available models include a two-series Automation Processor, dimming and switching modules, a motor controller, low-voltage interfaces, and a complete Cresnet distribution solution.

Crestron UK’s Robin van Meeuwen commented: “The



17th Edition is demanding in its requirements and custom installers need to be aware, as much as anyone, that their lighting control installations will have to comply, and with our new DIN Rail system, they will. The addition of the energy monitoring feature is, I can guarantee, going to be massively popular with everyone.”

PRODUCT FOCUS