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Integrating Lighting with Other Home Automation Technologies (1/7/2008)

By Dave Chester, CustomControls

As a lighting control and home automation company, we are experiencing increasing demand for whole-house lighting control. A few years ago lighting control was an add-on to an audio-visual project - an option to add if funds allowed. Not anymore. Having realised the benefits in terms of convenience, security, energy efficiency and aesthetics - literally showing their homes off in the best possible light - people are now specifying whole-house lighting.

Ambient light sensors and motion detectors can ensure that lights come on when you need them - when an area is occupied and light levels are low enough. Lights can also slowly ramp up as dusk falls, keeping a constant light level in the room. Automation of this kind however, is only as good as the control system design and associated programming. A lighting system that seamlessly works in the background will quickly be accepted by every member of the family, whereas an unreliable or unpredictable system will quickly become unwanted - even loathed.

Crestron C2NI-CB lighting keypad with integrated ambient light sensor.

Applications

Product developments from companies such as Crestron have enabled us to specify lighting keypads with ambient light sensors built in. This opens up endless possibilities for automation - the system can bring the lights on when dusk falls, but can just as easily partially close electronic blinds when the sun is too bright, thus protecting fabrics and keeping the temperature down on a room by room basis. Activity-based lighting scene selection, for example for 'reading', can ensure light levels are at the client's preferred level, whatever the time of day or night.

Integration with electric gates and intercoms can automatically light up communal areas as the home owner arrives, improving aesthetics, convenience and security. Integrating the alarm system can also pay dividends - the PIR sensors on the alarm can be used as motion detectors for the lighting system, and lighting events such as flashing external lights, can be programmed should an alarm condition arise.

Implementation

Obviously, these systems are best implemented at the wiring stage of a project. You can't beat a wired connection between two systems, so automation at this scale should not usually be left to wireless technologies. The exception is perhaps the Lutron HomeWorks system. Recent product releases for HomeWorks have enabled extra rooms to be added by simply wiring a new radio dimmer in place of a standard switch, allowing the room to be controlled by the system - perfect for extending whole-house lighting control without costly and

inconvenient rewiring.

If your client is not fully behind the idea of a whole-house lighting system, or funds are limited, then using lighting control in a lounge or home cinema can be an excellent choice. Single-room solutions such as the Crestron iLux or the Lutron GRAFIK Eye can easily be integrated with control systems. A good example of this is a home cinema equipped with a Kaleidescape DVD server and a Crestron audio visual and lighting control system. Selecting 'DVD' on the Crestron keypad can close the blinds or dim the lights (after evaluating the ambient light sensor in the keypad), and switch on the TV and sound system. Nothing ground-breaking there, but useful if, for example, pausing the film to answer a phone call causes the lights to raise, and dim again when 'play' is pressed. Another example, is the system we are currently installing in a penthouse in Manchester, where one button press on the keypad by the front door will illuminate the communal areas and the garden. The whole system can then be turned off by pressing one button on the bed head lighting keypad. Touches like this ensure that the apartment is always viewed at its best - how often have we all returned home at night and had to go rushing around switching lights on whilst guests stand waiting?

Crestron touchpanel being used for controlling HVAC and lighting in the Penthouse of the Beetham Tower, Manchester.

The future

The future of lighting has to be with LED technology. While this is currently the preserve of feature lighting and pinpoint spotlights, we really need this technology to become better suited to general lighting - replacing all of those halogen spotlights that were fitted a few years ago with LED lights has to be a priority. We are already seeing a few well-designed fittings on the market, but they have yet to become economical enough for general use. Our control systems coupled with these lamps will see home owners' energy consumption reduce drastically.

Conclusion

The benefits of integrating lighting and home automation are increased security, convenience and energy efficiency. A good lighting control company can significantly enhance a home and leave the homeowner wondering how they managed before. It really is worth spending the time designing scenes to complement the home owner's lifestyle - not just programming 100%, 75%, 50% and 25% - because a well-designed system will literally have their friends and visitors beating a path to your door!

Dave Chester is the Managing Director of CustomControls, specialist installer of custom control and entertainment sytems.

www.customcontrols.co.uk