Energy-efficent lighting sparks an idea

When the Poswall family decided to more than double the size of their four bedroom, two bathroom house, to 1,5000 sqwm – an area covering nearly four netball pitches – managing the house's lighting system to prevent energy wastage became a top priority. Electrical Times finds out how MK Electric sparked an idea

Over the last few years houses in Southampton have become hot property. There's a dynamic local economy, which has allowed property prices to grow by 15% over the last five years, ahead of the 12.5% national average. Exceeding both growth in earnings as well as the national average house price growth, developing property in this part of the UK seems to be a sound investment. The Poswall family agree. Once complete, their rather regular family abode will become a larger-than-life home with 11 bedrooms and 13 bathrooms over four floors, as well as five large living rooms, a handmade bespoke kitchen, cinema, games room, gym and indoor pool.

An extension of this size presents a wiring – and energy saving – conundrum. When MK was approached to suggest solutions, Astral – MK's advanced wireless lighting system – was a clear winner. As a result, the project has become MK's largest Astral installation in the UK to date.

Far and wide

MK project manager Mervyn Homer has worked closely with the Poswalls since the beginning to meet the their needs. He believes that the flexibility of the system is what appealed most to the family: "The Poswalls were faced with a dilemma when we first met with them. They had been told that to install an automated lighting system would require a lengthy planning process at the outset, with the exact number of switches and rooms being detailed from the very beginning of the project. But for the Poswalls the project wasn't that straightforward. Despite the fact that they've now opted to have the system throughout the whole house, this was a gradual process as they crafted their home – not something they wanted to stipulate from the beginning. Astral gave them the flexibility to add or remove switches and rooms as the project progressed."

But the main challenge was always going to be the size of the finished property, and ensuring that the Z-wave signal – used to communicate between the switches – could be transmitted across the whole house.

Mervyn continues, "With Astral, every light switch is a transceiver. We had to do a number of checks along the way, especially as the installation progressed from being in one area of the house to all rooms, across three levels. The communication between the switches is what makes the product so desirable so we performed detailed checks at every stage. With the Z-wave signal being the most common form of wireless communication for similar devices, Astral also has the ability to connect with alarms and blind controls to create a completely integrated system. This allows homeowners to control multiple lights, alarms, blinds and other devices all from one switch, wherever they are in the house."

Ease of control

It is this ease of control and the fact that the system can be controlled by devices such as iPhones and iPads which has led to a surge in home automation for the masses – a trend which is beginning to be seen across the industry. As with many home automation projects an intuitive interface is key. But with lighting systems built using Z-wave technology, lights can not just be controlled by a smartphone or tablet, but also a single light switch.

Alan Donovan, the project's electrician, explains, "Each light switch in the system can be programmed differently to either control one light, two lights or multiple lights – many owners decide that one switch will control all outside lighting for example, or perhaps all lighting in the downstairs of the house. This avoids the need for a central engine, or control box, that requires an integrator to pre-programme and change the settings. Instead, it puts the freedom into the hands of the homeowners to very easily alter the light switch settings themselves if required by simply using the buttons on the back of the clip-in front plate."

For many home owners this is beneficial for two reasons: firstly convenience, and secondly energy savings.

Mervyn elaborates, "Often the selling point for the customer is the ease of control, but the biggest benefit is actually energy savings and lower electricity bills. By being able to control whole areas of the house with one switch and by using timers to ensure lights are automatically turned off when appropriate, the savings can be much higher than expected.

"One of the key features that can help with this is the timer function. Not only can lights be set to come on at a certain time, they can also be programmed to adjust to the natural light and come on at sunset, for example. This ensures that they're never on unless they need to be."

Installation made easy

For such a complex system it is perhaps the ease of installation that stands out the most. Astral runs on conventional wiring so to install the system electricians don't need to learn new skills. The system is simply controlled by seven fuse boards spread around the house to control the different sections – nothing too out of the ordinary. It is the same process whether installed in a two-bedroom semi-detached house or a 15-bedroom mansion, making the process easy to manage.

Yet Mervyn confesses that he has had a right-hand man helping him out: "The design of the whole house and every single detail has come down to one man – Mohammed Poswall. At just 20 years old the newly graduated student in Property Management and Quantity Surveying has already put his degree to good use by overseeing the whole project, including the decisions on the lighting system.

"Mohammed represents a new age of both property developers and home owners who expect modern wiring systems to support home automation. This project has been an exciting one, but it's only the beginning. As consumer demands increase for cost-effective and energy-saving lighting systems, projects like this one will become more pervasive."
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