





CHARLOTTE GALE



Above: Working with a smart lighting specialist will ensure the finished result is as intelligent and functional as the infrastructure behind it. This project is by Brilliant Lighting. Above right & inset: Installing the Niko smart home infrastructure at the Build It Education House ([www.buildit.co.uk/ourhouse](http://www.buildit.co.uk/ourhouse)). Here we see the cabling running through open, metal-web posijoists and one of the team fitting the hidden ceiling speakers from Amina UK

But what does a smart home actually do? Well, simply put, it's all about leveraging technology to enhance your lifestyle and make the whole house work more effectively for you – both now and in the future. A modern system will provide you with complete, centralised control over your living environment and vastly improve functionality. This gives you the opportunity to take the hassle out of modern life via pre-programmed moods: so once you're ready to settle down after a hard day in the home office, at the press of a single button, you can dim the lights in the living room, close the blinds and switch on the TV or whole-house audio (preset to a favourite playlist).

But the smartest elements are in the bits you don't really think about. For instance, with a fully wired-in smart home, when you leave the house you can just hit the 'all-off' button to switch off all the lights and music, set the alarm, close any electric windows/skylights and put the heating into eco saving mode.

Ever needed to get up super-early for a meeting? Gone are the days of worrying about waking your partner when you switch on the lights in the ensuite: a smart home will realise what time it is and set the lamps to come on at 10% brightness. And there's more on the way. "We're not far off motorised sliding doors," says Andy. "Innovations like this are fantastic for improving accessibility and making your home fully future-proof."

The next generation of smart tech is even going to be capable of managing your household power requirements. For instance, it might turn off the fridge for an hour if it's

not needed, divert excess energy into the hot water cylinder or borrow unneeded power from your electric car so that you don't need to rely on the national grid as much during peak hours of domestic usage.

### Why you should focus on infrastructure

The first step in achieving an intuitive smart home is to plan it properly – so bring a specialist on board as early as possible. "We advise homeowners to think about smart technology at the outset of their build plans," says Stephen Chard, co-founder of Baulogic. With an expert in tow, you can discuss your needs in depth and ensure your house designer has all the right information available.

While this stage does include deciding exactly what elements you want to automate now, the biggest consideration is getting the infrastructure right. That's easiest to do, of course, when you're building a new home from scratch (or completely gutting an existing house).

On this kind of project, you'll have the opportunity to future-proof your living space with high-quality, hardwired infrastructure that will allow for flexibility and adaptability over time. A centralised control system can manage everything from lighting through to audio-visual (AV), heating, ventilation, security, shading and more. And it doesn't have to cost a fortune to get the basics in place. "I always recommend that people design and cable for everything," says Andy. "That might mean spending £200 more on cable and a couple of days extra labour – but the most expensive cable to pull will be the one you



don't put in!" Running all the wiring now is relatively inexpensive, then, and will give you the flexibility to upgrade your setup as and when you have the cash.

### How does the wiring work?

Traditional electrics is very different to this new modern standard. Most smart systems use what's known as Bus topology to allow the central brain (located in your tech cabinet) to communicate with every control pad, light fitting, thermostat etc that's hooked up to it. So, everything is daisy-chained back to the main controller, which tells all the components what to do according to the preselected moods and commands you've agreed with your installer.

You can think of it a bit like a bicycle wheel: the hub is the brain, and the spokes are the individual circuits. Messages from the switches and sensors ping back to the central controller, which then sends a signal telling the specific socket, light, blind, heater etc what to do – either individually or collectively as part of a mood setting.

"To use lighting as an example, traditionally you would wire power to the switch, which would then be connected to the lamp," says Steve Itoje of Link It Solutions. "With smart lighting, you centralise everything, so each light and switch goes back to one location. That gives flexibility for any control to operate any fitting, in any part of the house."

Designing and programming an integrated system is a specialist job, and many self builders and homeowners choose to use the same team to complete the install – taking maximum advantage of their experience. That

## CLOSER LOOK Control options

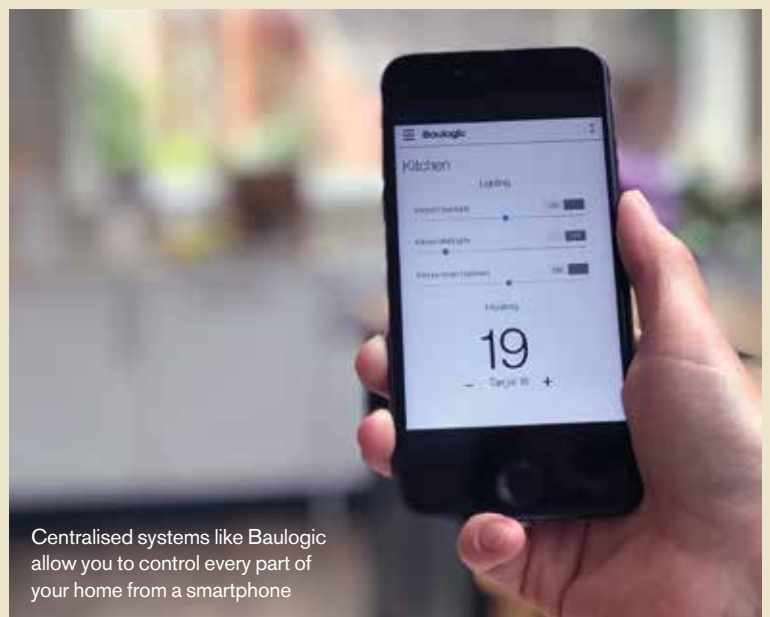
Your smart home could be the envy of friends and neighbours, bursting with the most amazing functionality they've ever seen. But if the controls are too complicated, or not intuitive, you will quickly find yourself longing for the days of analog light switches. From grandparents to digital native children, the whole family needs to fully understand how their living spaces operate, and manufacturers and installers work hard to make sure that's the case.

Touch control panels have been around for ages in automated homes. They're still in widespread use, and getting cheaper. "In-wall touchscreens are typically a part of every installation, and they are now more like £700, instead of £4,000. With the right setup, they offer fabulous integration and access to all services including intercom, video entry etc," says Peter Worthy, CEO of Smarthomes. We're also used to physical interfaces like this, and pre-programmed to hit the light switch when we go into a room, for instance.

Some panels include nifty features, like Elan's Intelligent Touch Panel, which benefits from facial recognition. Just walk up to it and it will load your particular settings. Having different profiles for different members of the family is a growing trend and can be a really useful solution – so, kids could be able to control the TV and music in their den, for example, but not the heating and lighting in their parents' bedroom.

All systems have their own dedicated app, which means they can be operated via your smartphone or tablet. This is brilliant for when you want to monitor things when you're away from home, but surprisingly, this control method hasn't taken over from dedicated touch screens, or from the handheld remotes that are often used in rooms with a television. "It's a false assumption that the phone or tablet will replace the traditional remote," says Steve Itoje. "People tend to go without a remote for cost reasons, then they come back to us and ask how they can get hold of one. With this conventional tool, there's muscle memory – you don't need to look down at them to use them – and you get instant access to the control of that room. You don't need to scroll through your phone and find the app first."

Controls don't need to be screen-based. Loxone's system features a touch surface that can be integrated into glass, wood, ceramic or stone – so it can sit within a kitchen counter or an office desk, for example. Finally, a virtual voice assistant like Amazon Alexa is a fast-growing way to interact with your smart home. "I personally think they're fabulous, but they're currently not stable enough to be the only form of control," says Peter. However, as the tech gets better, expect them to play a bigger role – especially for those keen to live independently in their homes for longer.



Centralised systems like Baulogic allow you to control every part of your home from a smartphone





**Above & inset:** This project by Barc Architects ([barcarchitects.com](http://barcarchitects.com)) includes tech from Control4 for whole-house AV control, lighting and a cinema room. Smart home specialists Azro created pre-set lighting moods to choose from, among other functionality. **Below right:** Baulogic is a hardwired, plug-and-play smart home system that can be installed by your own electrician, complete with intuitive touchscreen interfaces

said, you can use your own electrician if you prefer. "With a plug-and-play system like Baulogic, your own trades can put the wiring in," says Stephen Chard. "Ultimately, you'll get full flexibility of your control over your entire home without having to depend on WiFi."

First fix is all about installing the cabling infrastructure safely and in the right locations. Using different colours and labelling both ends of the wire is a good idea to ensure everyone on the build knows what's what (and you don't end up losing cables in the walls). Once the plasterboard goes on, it's all about fitting the backboxes, collars etc for the elements you'll interact with. After the plaster skim and decorating's done, the final fittings, touchscreens and faceplates can be installed, before the controllers, amps etc go in and the whole setup can be commissioned. This second fix work actually takes more time than the cabling.

### What does a smart home cost?

Not as much as you might think. Sure, as with any element of your project, you could sink a sizeable chunk of cash into your smart home tech. It's all about the specification. An entry-level installation could cost as little as £20,000-£30,000, for instance, which represents just 5%-10% of the average self builder's budget. At that kind of figure, you might only be looking at spending £5,000 more than traditional wiring – and what you don't get with old-school electrics, of course, is all the benefits of modern life-enhancing features and built-in future-proofing.

So, what constitutes a starter smart home? "As a minimum, most people will want centralised lighting control, so they can set moods etc," says Andy. "We'd also

recommend adding in the infrastructure for shading and heating – although there is a lot of third-party smart tech for heating systems. Of course, there are benefits to whole-house integration – but if you're not using a central controller like Niko to manage this aspect, at least go with something like Heatmiser and zone the heating.

If you want to go for an all-singing, all-dancing spec, then the budget will quickly rise. Add in a high-quality home cinema, multiple 3D screens and whole-house audio, touch panels in every room and colour-changing lightbulbs everywhere you look, then yes, you can expect to pay in excess of £80,000. If you want those things but your budget won't stretch right now, then ask your installer to run in extra cabling instead: it costs very little extra and gives you the flexibility to upgrade when funds recharge.

The lesson is, think of modern smart wiring as part of the immutable fabric of your home, much like the insulation, brickwork and glazing. You only get one chance to install it cost-effectively: so it's worth focusing funds here. "The infrastructure gives your home value," says Andy, "so why spend £50,000 on a kitchen if it means you don't have the budget for a smart home that will enhance your lifestyle and improve efficiency, flexibility and future-proofing?"



### CONTACTS

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