

Episode 292

What home automation do you really need? – with Mark McCall and Scott McMurray

The show notes: www.houseplanninghelp.com/292

Mark: I guess it was 2017 that we said yes finally, let's go for it, let's buy this site and make a start. Shortly after that, we attended one of the many self-build shows that we've gone to over the last few years and it was there that we met Scott from Epitome Living.

Scott: It was the first show that we ever did actually. It was the luxury home show. We were standing there on the show stand selling our wares, as it were, and Mark came over a little bit inquisitive.

We soon realised who he was, his background, and the strange circularity of all of this, of course, was that it was many years ago that I first read about Cat 5 cabling on Mark's blog back in probably the early 2000s I'm sure that was. So, it's strange how these things come around again.

Ben: Yes, Mark we've got to mention this blog. It's already come up in the conversation.

Mark: Yes, AutomatedHome.com and AutomatedHome.co.uk. We did our first self-build in the mid- to late-Nineties. Looking around then, there wasn't much information on smart-homes, certainly not in the UK; there was a bit in the US.

So, I started a blog in September 1996, coming up to twenty-five years ago next year, and ultimately, we ended up with the URL AutomatedHome.com.

Ben: That means you're a bit of an expert in this area.

Mark: No, definitely not.

Ben: Okay, you're debating this. You had automation in your first home, didn't you?

Mark: We did. We had some early x10 equipment. But I spent the last twenty years trying lots of different systems. I would say I'm

definitely not an expert in any one area. I think I possibly know a little about a lot. That's why it was vital to get someone like Scott on board who is a real expert in Loxone.

We'd chosen Loxone probably before we started to build. I said to Helen that if we're going to do it in this way, we're going to do it right. We're going to do Loxone or nothing. So, it was always going to be Loxone.

Ben: Why Loxone? I know that there are different standards and proprietary systems. How did you land up there? Is it right at the top of the mountain?

Mark: It's not. There are lots of systems out there. There are DIY systems and budget systems, and hugely expensive multi-million pound systems as well. To me, Loxone was always in the sweet spot, more reliable than the DIY system, much more affordable than some of the very expensive mostly American systems.

We always loved the integration that Loxone has as well. The biggest problem in the smart-home – and Scott will hopefully agree – is integration these days. Loxone is designed with all the products that work together flawlessly.

Over the years, I've probably come to see the proprietary nature of Loxone as one of its greatest strengths. It's similar to a certain fruit-based smartphone company. You're paying maybe a little extra over and above the cheaper alternatives but you're getting lots of things there. Privacy, security, the guarantee of interoperability.

It's probably less focused on home cinema and some of the more whizzy things although it can do all that, of course. It's more about building management and areas that I'm probably more interested in these days – energy, lighting, heating control. It has clever logic blocks for shading and blind automation. It's highly reliable, obviously, as well. You can interface with other standards like KNX, you can connect your heating system through your Modbus interface, it supports RS232, Dali, infrared, as well as normal dimmers, I/O, extensions and even some virtual I/O for API integration.

So, there are lots of reasons for picking Loxone. And of course, the importance of support from your partner and ultimately the company itself.

I think probably Scott, whenever he was starting out in his business, had to look around at the alternatives too to decide which system

he was going to launch his company installing. So, probably Scott is able to tell you a bit about why he picked Loxone as well.

Scott: Absolutely, Mark. That was crucial for us, to take a bit of time to figure out the best path. It was after a bit of an R&D trip to a large tradeshow over in mainland Europe that we really nailed that down, that there was going to be a Loxone based solution at the core.

You've hit the nail on the head there a few times with some of the features that it can offer. Obviously, technically it's very impressive, but in terms of reliability and the spread of the projects, there are over a hundred-thousand installations worldwide of Loxone smart-homes and commercial installations. In fact, even today, half of all new-builds in Austria use Loxone. That's not half of smart-homes, that's half of new-builds in Austria, their home country.

So, you can see how well-respected and how reliable that system is at this point in time. It really has got out there and we're really delighted to be working with that as the core of our offering.

Ben: Scott, let's say that Mark was an ordinary customer – and I'm sure you'd agree he's not – but where would this journey start?

Scott: In essence, as early as possible. We always say it's good to get in touch early, maybe when your planning is going through or is likely to go through for the general house that you want to build. From there, we can really start to think about the entire system.

It's a design-led process. It's absolutely crucial that you don't come in, have first fix complete, and try to shoe-horn in some of this technology. We should always be trying to make a system that works for you rather than trying to shift some products and install some boxes on the wall. That's a different approach. That's the Amazon approach where you're maybe retrofitting some equipment or setting some of this technology out on the countertops. We're talking here about a much more personalised and bespoke type of installation.

Ben: Mark, how did you brief Scott?

Mark: Obviously, we had a fairly good idea of the areas that we wanted, that were important having tried lots of different systems over the years, as I said. Something like automated lighting, for example, was probably high on the list because that's something we had setup previously. Although it wasn't really one-hundred percent reliable, we saw that the principle was good, walking into a room and the lights come on. It's actually a surprisingly important thing once you've had it. It's really nice to have.

So, things like that which we'd done, other things that we'd thought we don't really need. It was a lot of probably trial and error over those years. But we found that when we sat down with Scott and discussed the capabilities of Loxone, that nearly every meeting we had – and probably Scott would agree – the specification grew and grew because when you start this journey, you can see what's available.

For example, multi-room audio in the bedrooms, so you can have that waking you in the morning. Then you want to add speakers in other rooms because that can become a way to ring the doorbell in different rooms; the doorbell comes through the speakers. Text to speech alerts as well. So, all these things build and snowball and the integration makes everything work together so seamlessly that, as I say, the specs started off modest and we ended up with a fairly comprehensive system.

Ben: If I understand you correctly, you've got the cabling that's going to form part of the house, and then it sounds like you've got all these gadgets that you can plug in. Is that a fair description?

Mark: We've probably built a house that's fairly minimal so, it was important that there weren't really any boxes or things on the walls, apart from the beautiful glass Loxone Touch Pure switches. But all the gubbins and gadgets are probably in the plant area which is just over the garage, some cabinets on the wall and a data rack out there. So, it's all fairly invisible.

Scott even organised some invisible speakers. The speakers in the barn, up in the vaulted ceiling, are plastered over speakers so there's nothing really to see. We built the subwoofer into the large kitchen island. There was a useful void in there where we decided to try the subwoofer and that worked really well. So, definitely there doesn't need to be anything on show. I think less is more.

No whizzy lights and touchscreens. We have one touchscreen in the kitchen so that we can access all the subsystems in one central location and that is useful. But you don't really want to have to walk to the touchscreen every time you do something or pull your phone out of your pocket.

Loxone's wall switches are a five zone switch. They have a large, central touch zone in the middle. Pressing that brings the lights on. Pressing it again, it goes to the next scene; pressing it again, it goes to the next scene. The top-right is volume up on the audio in that room, bottom-right corner is volume down. Then the other side is mostly used for blinds up and down.

So, the switches are easy to understand. They are the same in every room so, you don't have to relearn or think about it. Visitors to the house can come in, mash their palm on the switch, and the lights will come on. In fact, probably with our movement sensors, the lights will come on in the room as they walk in anyway, so you don't even need to touch the switch.

Ben: Scott, on the wiring front, the question I asked earlier on, I was thinking of can you put all the cabling in and then plug the gadgets in later? It sounds to me as if you really want to do it all in one hit so that everything vanishes, and it just looks seamless.

Scott: That's the idea. Ideally you would do everything at once but of course, sometimes we have to be a little bit more pragmatic if budget is a concern or there's a certain phase to the project – maybe two or three phases of roll out. That's where a pre-wire for some of the systems can be very useful.

Now, by its very nature, the system should be designed, of course, and as part of that you get a cable plan ideally. So, if you're going to some technology professional, you'd probably be expecting them to supply you or your electrical contractor with a good, detailed cable plan to ensure that the systems are installed or the cabling for the systems are installed to that spec and also for some of that pre-wire allowance for adding something in later on.

Maybe you're not fitting out all the rooms with audio, but you want to allow for that in the future. Maybe you want to allow for, say, an extension that you know you may do down the line. That can be thought of at the start as well. If that's all planned in, it makes the whole journey a lot smoother.

Ben: A rookie question here. The internet. How much are we using the internet, if at all?

Mark: It's a great question and one that people are interested in.

First of all, it's important to say that Loxone does not require the internet to operate. That again was another reason for choosing this system. It doesn't rely on an internet connection, there's no reliance on cloud servers or anything. Everything happens locally in the house from the little mini-server in the cabinet. You can, of course, choose to enable remote access to the system which is over a secure SSL link. That gives you access and monitoring when you're away from the home.

There are dangers with other systems that are out there. Security and even more so maybe privacy is a big concern. I think again,

looking back to what we tried out in the previous house, there are the cheap, no brand Wi-Fi bulbs and switches. They're probably the biggest threat. You're giving these devices full access to your network. And privacy wise, some of the big names out there – Scott said Amazon, and the rest – are doing some smart speakers at unbelievable prices that are probably below cost to get into your home. So, you've got to wonder, when things are that sort of price, are you the product in those situations?

Scott: Yes. And having that lack of reliance on the internet just means your system is that much more stable and reliable. We've heard stories, maybe a couple of years back, of different smart-home systems that were very reliant on the internet and then [without] the app that you have to use to turn on your bulb, all of a sudden your lights don't work.

Things have improved in that world, but still there can be a heavy reliance on the network and a heavy reliance on an internet connection with some of those systems. That's why we love the solution that we offer which is not reliant on the internet at all, but it adds another layer of option. You can get the weather forecast pulled in, so that can help to compensate your heating if it needs to come on a little bit earlier some mornings because there's a cold weather forecast. It can use that information.

And as Mark said, there is remote access. That's both for the homeowner to remotely access the systems maybe to check in on things or to let somebody in remotely if that's what you want to do, or it could be just for maintenance. So, your Loxone partner, if you've entrusted them to access your system remotely to do some maintenance or to check-up on things for you, that can be a great option just to keep an eye on how everything is going.

Ben: So, that fear of waking up one day and then discovering all the phones ringing and the lights flashing downstairs because someone's hacked your system is not going to happen.

Scott: Again, it comes from a network security standpoint. The measures that have been taken are continually improved on. So, that is unlikely. They have industry standard networking security functionality in place there to make sure that is mitigated against as much as possible.

Of course, the weakest link in most of these systems is usually, unfortunately, the people who live there and their passwords. We always encourage people to make sure they have a secure password if they have remote access enabled.

Ben: Yes. I had one of those things saying, 'you haven't changed your password in a while. You must change this'. It's all too easy just to click the 'later' option and come back to it in a bit, isn't it?

Now, Mark's house is obviously a high performance house. So, who wants to take this one? What has that meant for automation in terms of heating? Is anything really happening?

Mark: That was an important aspect too because we're not a passive home, but we are hopefully a low-energy home with an airtightness rating of one-point-nine. So, we're at the lower end of a standard build, I'd imagine. So, we are looking to minimise our energy use, like everybody else.

Loxone is already integrated with our Hitachi heat pump but it will also connect with domestic batteries, EV chargers, things like that. Just today, Scott and I were discussing a case today where it was quite a cold, wet morning, and then the sun came out around midday and the temperature rose quite quickly in the barn. There's a lot of glass at the front of our barn. We were looking at if we could use some of that information that Scott mentioned from the weather forecast maybe to have a look at the solar aspect that's due during the day, to see if we can compensate for that. If we know the temperature outside, what it's going to be in the afternoon, have a look at the solar and see if we can back off the heat pump in the morning possibly.

So, yes, it definitely plays nicely with performance homes. It's also quite a flexible system and I know Loxone are increasingly being used in commercial buildings, hotels, office blocks. I think they even did a football stadium a couple of years ago. So, it's incredibly scalable and there's not really much that it can't handle.

Scott: In terms of the energy that you mentioned there, especially in the higher-performance passive-style houses, a lot of modern ones will have a lot of glass and that can, of course, cause an issue with solar gain as I'm sure your listeners will be familiar with. That can be a real issue.

Sometimes the best way to handle that is shading. And what better way to have your house shaded than have it automatically shaded based on time of day, outside temperature, position of the sun – whenever your blinds and your shades are connected into your smart-home system, that same system that operates your heating can also operate your shading. So, you won't find a situation where it's pulling the blinds down to cool a room at the same time that the heat thinks it needs to be on. That can all be intelligently monitored.

And of course, if you open a window to cool down the house, that could automatically turn off the heating in that room because everything is interconnected, and those intelligent decisions can then be made by the system.

Ben: Does this allow you then to really keep totally cool on those hottest days of the year? Have you any examples from a Passivhaus Scott of what temperatures have been like inside on a really hot day?

Scott: Well, it all depends on what is available. We can, of course, control whatever shading is there, and as you'll know, the shades on the inside don't tend to reflect the heat just as much as the shades on the outside. But if you can get external shutters with that kind of parabolic slat system, then that can really help to reduce that.

Again, as the sun moves around the house, the system can respond to that. As it moves, it can rotate and tilt those slats just enough to reflect the sun without plunging you into darkness.

On a case by case basis, you'll see different results there depending on what shading system is available.

Mark: This is Northern Ireland as well, I have to say.

Scott: That's true.

Ben: What does that mean, Mark?

Mark: It's generally grey and wet, even in the summer.

Ben: You must have a couple of nice days, please.

Mark: We do. And to be fair, even if it is cold outside, a day like today when the sun is out, it's amazing the gain you can get from the solar aspect. Our building is working really well in that respect.

We have a two metre south facing overhang at the front and it's amazing to see. Last December when the house was being built, the sun was right the whole way into the barn. And yet, in the summer months, we moved in about the middle of July and the sun was only making it maybe one or two metres into the barn. So, that overhang is really cutting out the high summer sun really well.

We've got Keylite rooflights in there as well. Scott's controlling those through Loxone. So, that's another great way to dump the heat. If the room starts to overheat, the system has full control over the Keylites. It can open them to dump some heat. There's also a

weather station on the roof and if the rain started or the wind picked up, it could automatically close the Keylites as well.

All these things, there's maybe a buzzword coming –a synergy about them. It is true. The more subsystems that feed into the system, the more intelligent the whole thing is.

Ben: I guess the question that I have at the back of my mind is about, when you've tried to keep the design simple, are we starting to complicate it again by being able to have this automation?

Scott: It totally depends really on what's needed for the house. That's why it needs to be design led. It could be that the brief is simply some really good lighting control and you want to reduce the clutter on the walls and you want to get rid of all those different switches and room controls and all those things that lie about the place, and replace that with some automated lighting with some switches where you want a bit of manual control. That could be the entry level type system.

Maybe you want to bring in the heating then as well if that is an underfloor system with multi-zone temperature control. That can be done too.

It really scales from there. Mark mentioned the multi-room audio that can come into play and that has some really great advantages. You can have your doorbell going through it, announcements going through it, music itself – various different ways to use those systems.

So, at its core, yes the system can be complex. But the nature of that means that day-to-day, there's less that you need to do with it. Generally, your installer will take on that complexity and leave you with a system that does an awful lot for itself.

Mark: Yes, I think that's a good point that Scott makes. It's up to your partner in this thing to take all the complexity out of it for the homeowner. Certainly, that's what Scott has done for us. My better half would not have any interest in technology at all but loves the system and that's because it makes all those things simple.

Even those Keylite rooflights that I mentioned. You would normally have to hook-up a Keylite remote control somewhere to do that or you'd have to change the temperature somewhere else. But all these things are available from the phone in your pocket, from the iPad on the wall, or most of the time just operating themselves completely autonomously.

Ben: Mark, all of this stuff that you've got in your home, has it taken any time to get used to, or is it second nature?

Mark: I think it's second nature to me, but again I go back to this thing where the complexity is taken out of it. A lot of people's experience of home automation or a smart-home is probably negative. It seems a great idea to be able to control your lights from your phone until about ten minutes after you get it and you realise what's involved in taking your phone out of your pocket, unlocking it, getting to the app, the right tab – it's a nightmare. And that's just the app for your lights. Then you've got another app to control your heating, another app for your curtains.

So, 'smart' is a word that's put in front of many things these days. It really means remote control and often not a great experience. This is different. This is integrated proper home automation. We probably have to make that distinction.

You can change stuff yourself, like on the Loxone app we can change lighting scenes, timer delays – I think there's an autopilot designer. Scott, you can setup scheduled events and things like that. But that's always a balance between Scott's side of the work versus how much customisation that we want to be able to do.

We're in three months now, I think, and we're still probably fine tuning things with Scott. Certain light switches – for example, the switch in our utility room which we had Scott configure for our garage door, so you don't have to be sitting in the car pressing your remote garage door opener. You can touch a switch on the way out in the morning so, by the time you're sitting in the car, the garage door is already up and you're ready to drive out.

So, when the system is smart like that and anything can be pretty much reprogrammed to be anything else, then the flexibility is there.

Scott: It's that balance, as you said there, Mark, between having the power to do anything and also then making that work for whoever is in the house.

Another thing we did for Mark recently was just reconfigure the switch at the back door to just open the blind at the back door rather than the rest of the blinds in that room. It sounds like a simple thing, but it just made sense in that location. It's very easy to do with this kind of system.

If that was a traditionally wired house and you wanted to change what a switch did, that would be a bit of a session, getting the electrician back and maybe rewiring something, maybe trying to pull

a cable through the ceiling again. Not very easy to do with a traditional wiring setup. Thankfully with a smart-home, a lot of that is just programming and reconfiguration.

Ben: You mentioned integration right at the beginning. I think this is one of the biggest issues. Are we saying that the systems that you're using, actually integration is not a problem because it all works together?

Scott: It's a mixed bag out there, to be honest. There are quite a lot of options available and this is where I think a lot of people get confused in what they should be doing.

What we do is offer a system that can do both a really fast install, is really reliable, and has a great choice of products for a customer who just wants it to work first time out of the box, so to speak. We do that, but we also offer that custom integration where needed.

There might be a bit of an edge case solution, maybe a different heating source, maybe a few different heat sources for example, and we can bring those all together. But for ninety percent of the time, our standard offering is exactly what they need.

Having the power to do both is, I suppose, what makes our offering somewhat unique in that it can do the really standard everyday smart-home, but it can also do those little bespoke touches that are sometimes needed just to make that project right.

Ben: Scott, as we know on any build, costs come at you from all directions. How much are we going to have to pay? Any examples from basics, right up to a very complex scenario, whatever is going to cost us the most?

Scott: It scales, and that's the beauty about it. There are no really hard numbers. Everything is project dependent, but you could spend a few grand getting a really decent lighting control system in maybe a couple of rooms, and that would be a really great user experience there.

And then, of course, the world is your oyster. You can scale that to a massive mansion with various swimming pools, ballrooms and all sorts of things. It really depends on how much it needs to scale for the project.

A bit like a kitchen. You can have a variety of different finishes and levels of luxury in a kitchen fitout, but you can have a functional level that you can start at, and then as we said earlier, it is possible to add to if you needed to in the future.

Ben: What about overkill? We were talking about speakers, having them built into the ceilings, that's fine. But do we want one in this bathroom? What about the kids' rooms? Do you just put them everywhere or is there a point where you think, hold on, actually this corridor, I can wait until I get downstairs?

Scott: Exactly. It comes down to being somewhat pragmatic again. Whatever is needed to be appropriate in that space. That said, with the offering that we can give now, it does make sense that you can install it in more places than you may have a couple of years ago.

You don't have to have high end audio everywhere. It's probably a good idea to have the better audio in those living room spaces. Maybe you have a room that you like to listen to music in. If you want to have the doorbell audible upstairs in the back bedroom, that's where multi-room audio can be very practical and very useful, but it doesn't need to be high end. You don't need to spend thousands of pounds on a speaker by any means, but you do get all those extra features should you wish to.

But again, it's scalable. You don't have to have it everywhere and we always take the lead on what the customer wants to do there. Some people do want it everywhere and some people just want it to be useful.

Ben: Three months in then Mark, do you think you've got it right this time?

Mark: Yes, we're delighted, I have to say. Loxone took actually we went with Scott about a year ago – this time last year, maybe – and we went to their showhouse in Austria and stayed for the weekend. That really was an eyeopener. And I hope we have gone someway to recreating that here. Certainly, we're very pleased with what we've done.

There is some tinkering to get things finished and just exactly the way we want it, but I have to say we're really delighted with the system.

Ben: The other thing, Mark, I'm sure you've found it really useful for all your blogging and articles and things on the website. I'm itching for another project here at House Planning Help, but what about for you? What's next?

Mark: Well, that's our second self-build, and quite a few people have said to us that you need to do a third one to get it right. But I think if you did the thirty-third one, you'd still be making mistakes. We didn't get everything right, certainly, but a lot more than we did the last time.

So, we're happy. I think this will be my last self-build.

I read something the other day. Someone was talking about some of the more DIY smart-home systems and the amount of tinkering that they needed. The guy's line was, 'I want to live in my home, not work on it'. That pretty well sums it up for me.

Ben: Yes. You're building a home, aren't you? Scott, any last words from you?

Scott: Certainly, if anybody has bad experiences of a smart-home which we do hear about occasionally, put those on pause and try and get somewhere where you can experience a real smart-home. It's not the kind of thing that everybody feels that they need, but then not everybody needed automatic lights in their car, electric windows in their car, remote central locking, all these things that we've come to maybe expect from our vehicles. For some reason, we still put a key in our door and open our windows manually and adjust the heating manually.

So, just consider that the bad experiences you've maybe had or heard about with smart-homes are possibly those DIY products that people tend to install themselves at the weekends and then tear their hair out whenever they don't quite work as promised.

Ben: Gentlemen, I really enjoyed that today. It's an area that I know I'm weak on, but I feel like I've learnt a lot. So, thank you very much.

Mark: Thanks Ben.

Scott: Thank you, Ben. Thanks for having us.