

Episode 220

How to finish a self build when money is tight – with Mike Coe

The show notes: www.houseplanninghelp.com/220

Mike: The first self-build, the Autonomous House in Cropthorne in Worcestershire, turned out to be more famous than I thought, in that we tried to build a ground-breaking house that would make as few demands on the environment as possible and it was off-grid apart from electricity, super insulated, had no heating system at all.

We made it fairly public during construction and afterwards and we're always willing to show it to people, but it's really surprising now how many people come to me and say, 'I was really interested in your first building project,' including somebody who got in touch yesterday who I'd never heard of before, happened to be working in Scotland and actually came around last night to chat about the previous house and look at the site and look at the details for the new one.

So, I've been quite pleasantly surprised how influential it may have been.

Ben: What I'd like to do in a way is to compare the experience of the first time to the second time. We know the first time around, we've recorded a podcast on that, on what it means to have an Autonomous House and going that extra mile. There are lots of interesting details there. You're not doing that this time around, but how would you lay the experiences side by side?

Mike: In many ways, they're quite similar; in many ways, they're different.

I was massively enthusiastic about the first project. I really wanted to get involved, wanted to build a house that we were prepared to stay in for the long-term, and I was very, very hands-on during the project. At the end of it, I'd had enough.

I've worked on houses all my life but never done something as big as a self-build and never previously focused so strongly on the environmental aspects of it. But I had plenty of experience of being on something that was a building site, albeit one of my own making.

This time, because we hadn't expected to do a self-build again, I didn't want to do as much work. Even though I can do it. Luckily, I'm very practical. I always have been. But I hoped that this time I could step back a bit and perhaps have most of the work or even all of the work done by contractors, having failed to actually find a ready-built house that we might be able to move into, which is what we started looking for when we first decided to move to Scotland but that turned out not to be possible.

So, I was approaching this one with less enthusiasm. I've got to be honest about it. Now that construction is getting fairly close, and I think we're fairly close to starting, I'm feeling a bit more enthusiastic about it, but I don't want to go into another really big project that's going to take a little over three years, which is what it took to build the Autonomous House. I'm hoping that by employing a main contractor to do the bulk of the work, we can do it in a more reasonable timescale. I'm going to do some of the things that I can do, but to a large extent, that's being dictated by financial constraints.

Ben: How did you procure the project the first time around?

Mike: It was really quite informal and, to an extent, random. We were employing a widely renowned energy consultant called David Olivier. We were working with Neil Lewis who was a one man architectural practice who was doing our design work and so forth. He suggested that we employ David because once he understood the level of energy efficiency we wanted to achieve, he said, 'you'd be better off having an expert actually working out your energy calculations and so forth.'

But it also just so happened at the time that Andy Simmonds was getting close to the end of his then ground-breaking upgrade of a Victorian cottage in Hereford, which was I think the UK's first EnerPHit upgrade. So, not Passivhaus, but a very high standard of upgrade for an existing, quite elderly building. And David Olivier was working on that as well, as energy consultant, and pointed out to us that Mike Neat and his team were working on that house and seemed to be doing a competent job and seemed to understand the implications of building to high standards of energy efficiency and things.

So, basically, he said, 'why don't you employ those people to build your house at Crophorne?' And as at that point, we hadn't really identified any suitable contractors locally. I had a chat with Mike Neat and he was sort of signed up on a fairly ad-hoc and informal basis. So, we just proceeded from there.

This new project has been very different. I think we're doing it in a much more professional way.

Ben: One more thing on the Crophorne Autonomous House. That's about the amount of labour that you put in. So, had you known from the beginning we're going to be doing this, this and this, and it would happen at this point?

Mike: I hadn't. I approached it with a fairly relaxed attitude about timescales. I know everyone says, 'we want to build it in this time and we want to be in by this Christmas' and so forth. I basically thought it'll take as long as it takes to build. Because I was taking on a significant amount of work that would normally be done by professionals, I was aware that I would slow the process down. Had we not had a fairly small building team on the project, I wouldn't have been able to keep up. So, it was actually quite a good thing in a way. I wanted to do this work, we only had a small team working on the build, and so it proceeded fairly slowly.

I actually ended up doing everything I intended to do on that house, which was basically the electrical wiring, all of the plumbing, I'd designed and built the rainwater harvesting system in the basement and the MVHR – the mechanical ventilation system. Together with Lizzie's help, my partner, we did all of that and any amount of sundry bits of carpentry, tidying up, cleaning up and so-forth, and all the accounts.

So, I was very closely involved in the entire project and I think that's part of the reason that it took three years to build.

Ben: How much of it was before you moved into the house versus finishing off jobs?

Mike: The bulk of the work, the actual hard physical work, was during the main part of the building project. There was a fair bit of planning, obviously, and research into how we're going to build a house like this. Is it going to work? Let's try and make it likely that it will work. Let's try to tip the odds in favour of it being a success by trying to design everything correctly.

But then there was a considerable amount of work that Lizzie and I just finished off ourselves, which was mainly things like decorating, because we moved into the house with it only just habitable really. We had enough rooms functional to be able to sleep and eat, and we had one bathroom working. So, we moved in with a lot of work still to complete, and that took us another year, pretty much.

There were still a few jobs left over after that, but I was suffering from self-builder fatigue. Once we'd got things almost everything complete, I just thought I can't do any more of this, and I had several months where I didn't do anything on the house at all. But it was habitable by then and actually, pretty pleasant to live in.

Ben: This time around then, what do you mean by more professional? I'm imagining you're thinking this is going to take a shorter space of time?

Mike: Yes. This time we're using a much larger architectural practice, which is partly because they seem to be very suitable. Now that we're on the Isle of Skye, it's quite a different environment in all sorts of ways to Worcestershire, where we were before.

But there is a very good and quite well-known local architect called Rural Design who have built some innovative buildings in this area and actually, even in other parts of the world. I think they've done a project in Poland. But most people have heard of them because one of their designs was featured on Channel 4's Grand Designs programme in, I think, 2012, which was a larch-clad house at Kendram in the north of Skye which two ladies built, and they now run that. There's a small attached building which they run as a café during the summer months which is incredibly popular. But the house is quite distinctive and is very unlike the traditional local dwellings which are almost exclusively white-rendered walls and slate roofs.

Rural Design have been quite trail-blazing in moving away from that very basic, traditional local vernacular and introducing much more interesting looking buildings, and seemingly with the approval of the planning department. I think a lot of people who are renovating or perhaps doing new builds in the Highlands and Islands submit plans based on the white-walled house with the slate roof because they think it'll get them through planning. But it doesn't lead to very much innovation architecturally.

They're alright, those houses, but when you see loads and loads and loads of them scattered around the place, you think surely we could have a little more variety than that, a little bit more visual interest. Rural Design have designed some interesting houses and they seem to be able to get them through planning. So, our house is not like that at all.

So, it's a larger architectural practice so the processes have been more formal. We've assembled tender documents, they've gone out to local contractors, and we're actually signing a contract for

construction – which I don't think we did last time, at least I don't remember signing anything very much – for a period of twelve months.

Ben: Yes, it all went fine, didn't it? You didn't run into any difficulties?

Mike: No, we didn't, but I'm not sure that the process of building the last house was as efficient and streamlined as it might have been. That's not to say that the last project was unprofessional, but there's a sense that this perhaps is following a more conventional path.

As I say, we had a contract period of twelve months, but we've extended it to fifteen to allow, once again, for me to do some work, although nothing like as much, hopefully, as I did on the previous house.

Ben: Are there any additional challenges of being on an island in terms of supplies or anything like that, or are you not yet aware of these sorts of things? There might be advantages, a small planning team?

Mike: Well, the planning team was so small that when the lady who works in the planning department went off on maternity leave last year, there was only one person left. So, basically there are two of them. But local government funding problems meant that they didn't replace the lady. Nobody was brought in as a replacement. So our planning decision was four months late in arriving, which had knock-on effects in terms of it's difficult to build in the Hebrides in the middle of winter because the weather can be really, really unpleasant for long periods.

And there was a lot of additional design work to do on the house partly because of the Passivhaus design aspect of it, which the local architects weren't familiar with. Fair enough. I mean, they were aware of energy efficiency and they understand about Passivhaus, but they didn't have any particular experience. So, it's all taken quite a long time.

We're later starting than I would've hoped. That's down to perhaps there's not as many people locally who do this kind of work anyway, but yes, supply of materials just basically translates into extra expense, because everything pretty much has got to come from the mainland or further afield in the case of highly efficient windows. So, the distances involved are longer. Once you get into the Highlands and on to the islands, the roads aren't very good, it's difficult for larger lorries. We may even be looking at having to transfer some large loads across from a great big truck onto a smaller one, so that

it can get to the site. And some people simply won't supply here, so your choice is perhaps reduced somewhat compared to if we were building in central England again, for example.

Ben: That really sounds like a list of disadvantages. Are there any advantages?

Mike: Oh yes, of course. People live here because it's relatively sparsely populated. The Isle of Skye is noted for it being very, very beautiful and peaceful. It's the second most popular holiday destination in Scotland behind Edinburgh. In fact, tourism is a key part of the local economy. But it is because of that beauty that the tourists come and it's because of that beauty that the people who live here do live here.

It is said – I don't know how true this is – that once you have lived here, you've settled in and you've got used to the inconveniences, that basically, you never want to leave. I can see that probably being the case.

Ben: How has it been in terms of budgeting for this project?

Mike: It's been difficult. We did a previous podcast about selling the Autonomous House, a house that we had built never intending to sell.

Various reasons led to us deciding that we would pack up and leave. And had I known I was going to be leaving that house after just four years, I would never have built a house the way that we built it. So, I lost a fairly considerable amount of money in selling it.

It was a very difficult decision, partly because it wasn't the actual house that we wanted to leave; we really liked the house and it was a terrific house to live in. But having weighed everything up, we decided that we would take the financial hit and go.

Now that we're here, living on Skye, we've moved considerably further north to be cooler, I actually don't regret the move at all. Had we stayed there, we would've been living somewhere that for various reasons we no longer wanted to live.

So, we've done that, but obviously, that's some money that I have in effect thrown away. So, I haven't got it. But we still had enough money, we thought.

We proceeded through the design with the architects, with Rural Design, and we designed a house that we really like. I think it's a fantastic house that we've designed. And then about this time last

year, we got a report from a local quantity surveyor to give us an idea of how much it was most likely going to cost. But that would be the full package with a contractor arranging and basically doing everything and handing us a completed house. And on that basis, we said it's tight on money, but we can afford it.

So, that was fine. That was a year ago. Then we had the four month planning delay, then we had the knock-on effects of that delay and also the additional design complications and various things that we had to do and various people were busy. So now, about a year after that, when we came to put out contracts for tender – there were actually only three local contractors who were interested; perhaps another side-effect of living in a relatively remote place, you haven't got a choice of ten contractors, there were three – but when their tenders came back, we were just horrified at how expensive they were. And two of them were just unbelievably expensive, quantities of money that I simply don't have and have no prospect of having really, not for many, many years perhaps, if I save enthusiastically. So, there was only one contractor but even they were well over last year's quantity surveyor's estimate.

So looking into it, basically there have been price increases across the board on building materials. Labour hasn't got any cheaper. There's a lot of demand for contractors on the Isle of Skye. And we've also got, shall we call it, political instability – uncertainty of supply from Europe where, for example, high performance windows would have to come from, and of course, the Pound has lost quite a lot of value against the Euro. So, when you're looking at importing products particularly from Europe, they've all gone up. And pretty much the whole world has been on emergency interest rates since the banking crash of 2008.

So, obviously I have at the moment got a reasonable amount of money in the bank but it's earning about one percent interest. That isn't even keeping up with inflation. So, all of the money that I had squirrelled away last year where we said we could afford to build this house, it's lost value in real terms since last year, as well as everything else going up.

Ben: I know you've said to me before that one of the reasons you're keen to get constructing is actually because you might not be able to afford it this time next year?

Mike: Well, I think that's right, yes. That's a logical extension of what's happened in the past year. Look ahead, we will actually be leaving the European Union – is it March next year? Something like that. Once we've left the EU, who knows what's going to happen? At

least one thing we're pretty sure will happen is that it will be a much more complicated process to bring, for example, windows into the country. And whether that will push the price up, I don't know. But we don't know what's going to happen in terms of exchange rates, other kinds of instability and so forth, further inflation, I see little prospect of interest rates going up so, money in the bank is losing money in real terms.

I think it's a very real possibility that this time next year, we would not be able to afford this house, which is why we've made the decision to start now, even though it's financially very uncomfortable.

Ben: You were never tempted to do some value engineering first, or is it again the design and the planning that will then take the time, and by that time things will have started to escalate in terms of cost?

Mike: Yes, I mean, when we looked at the design a year ago and decided that it was viable, we did it partly because we'd spent some time designing that house and that was the house we wanted. So, we didn't want to look at it and say, we're gonna have to strip these bits out to make it affordable, because at the time we decided that it was affordable.

But in terms of the value engineering, I think that's kind of happened as we've gone along. I don't think we've done anything reckless in terms of adding in unnecessary, complex and costly extra features and things. Notwithstanding the fact that the house is built of stone and we could probably have used a cheaper material for the external surfaces. But that was partly down to an indication given to us by planning that they very much liked the stone idea. So, that was partly based on if that's what they're telling us, perhaps that means that it's going to be much more likely to get permission. Which it did first time, albeit late.

I think the value engineering has been built in anyway. Although we weren't consciously thinking value engineering, I think it's happened anyway. This is the house we want to build and we're still going to try to build it.

Ben: What about the size? This was something I thought about on my own project when I bought a piece of land that was very expensive and perhaps too big really for what I had in my mind first of all, and then I had to build to the size of the land. Is that a concern too, that if you did think of building something smaller, it would be a wasted opportunity and you'd be losing money and that's the lesson that you've learnt from the Autonomous House?

Mike: I've learnt many lessons from the Autonomous House.

I think that's something that you have to bear in mind, as you have done, and I think that's something that architects will tend to warn you about. They'll say this site will support a larger house so, when you look to the future when you might ultimately want to sell up and move on, you've got to look at the value of what you've got available to sell.

Although there are only two of us, actually in reality, the Autonomous House could've been a little bit bigger.

Ben: What was the square meterage?

Mike: The Autonomous House was 160 square metres inside the Passivhaus envelope, but we also had a two floor conservatory and a big plant room. In total, it was about 225 square metres, if you included every square metre of floor area, which is roughly what the new house is, except that in this case there isn't the conservatory, the plant room is also the utility room and is integrated into the building. So, all of that 230 square metres, whatever it is, is actually inside of the Passivhaus envelope. It's in the house.

It is a big house, I suppose, but Lizzie and I like to have separate bedrooms, although sometimes we're allowed to go and visit each other. It gives an element of choice, and also generally, we find we sleep better, basically. Also, Lizzie's elderly mother who is still around and we hope she will still be around when the new house is completed. There is a room with a bathroom in it specifically for her, although ultimately it'll become a guest room. And then Lizzie has an office because she still does a few things to do with publishing and various bits and pieces. I still have a media studio for the various things that I do, to do with video editing and actually I'm about to master an album; I still do some music industry work occasionally. So, I have a room which could be called a bedroom, or it's my media studio. And we've got a largish open-plan living area upstairs with an attached kitchen.

That's it basically. So, it's a largish house but there aren't any bits of it that won't be used. Every part of the house actually has a purpose, and in some cases, a dual purpose.

So, maybe we're being slightly extravagant, but I don't think we're being outrageously extravagant at all. And as you said, the issue of ultimate sale value is the size of the building proportionate to the site that it's on, and I think it is. I think if you're thinking of it purely in

those terms, it could've been bigger. But we didn't want to make it any bigger than it is. I think it will be about right.

Ben: How are you building it?

Mike: It's based on the Autonomous House. People have said, 'you don't need to build high thermal mass,' which the Crophorne house was. You can do it cheaper and more simply by doing it with timber frame.

And an additional argument in favour of that method of construction is that it's the default method of construction in the Highlands. There actually aren't that many masonry built buildings here, and even those that are – for example, the 1960s bungalow that I'm currently sitting in – although it's got masonry cavity walls, the inner leaf is not direct plastered. It's still dry lined with plasterboard. So, that seems to be how they do things here.

So, this was one original concern as well. Can we build another high thermal mass house? Will local contractors be able to do it? Well, it turns out that they can. It isn't necessarily a problem. The fact that the default Highland house is white-rendered on the outside, well that's a form of plastering. So, the people who can do that can also do internal plastering. So, it isn't a problem.

We proceeded with that method of construction based on that because our experience with the Crophorne Autonomous House was that it actually works. The structure of a high thermal mass house warms up during the summer and then returns that heat to the interior during the winter, giving you a considerable amount of time before you need to add any kind of active heating. And also, perhaps more useful in the south than here and maybe more relevant in the future than now, the high thermal mass also helps to keep the temperature stable in the summer. It reduces the risk of overheating. It makes the house more comfortable in hot weather.

So, for those reasons but specifically our experience of living in a very high thermal mass house, we decided that we would do the same thing again. Because I personally believe that it makes sense. I know there are arguments for and there are arguments for building thermally light rather than heavy, and I understand both arguments. But our experience was that super-insulated airtight and thermally heavy is a very good way to build a comfortable house.

Ben: I'm not going to press you further into that argument, but I do want to ask about how you're keeping control of the money then? How far are you going with your contract?

Mike: Well, having had to reject the two most expensive tenders as being totally unaffordable, we went with the third one which we thought was affordable until we discovered that the contractor had omitted to include some of the estimated costs for items that we're going to supply, like floor tiles and kitchen units. Given that, it then became a little less affordable, but we decided that it would be possible to proceed on the basis that I would take on, as a minimum – and I hope also as a maximum – that I will do the electrical wiring and install the MVHR system.

The MVHR seems to have attracted a largish estimated cost from all the contractors because I don't think they're familiar with the Passivhaus form of doing MVHR, and also the fact that I'm going to use a system which has a built-in air source heat pump within the MVHR unit itself, which I believe is a good way to provide a low level of heating.

So, I've taken that out, and then we've also removed a number of items from the contract in order to get the price down to something that appears affordable. Initially, the contract was still going to be for an amount of money that I didn't have, and I just said I'm not comfortable signing a contract to commit to something that I can't afford, so let's get it down to something that's affordable and let's review the situation as we go along. So, as we get nearer to the end, we can see what items we can add back in.

So, I'm doing MVHR and electrics. We've removed all of the decorating which I think was fifteen-thousand pounds. We're simplifying the plumbing. We're going to get a local plumber who the contractor has recommended, just to do the first fix plumbing. Lizzie and I are going to do all the pipe insulation because there's not much point in paying a plumber plumber's rates for skilled plumbing just to put insulation on pipes. So, we're going to do that, that's a relatively simple job as a way of saving probably a couple of thousand pounds.

And we're not building the superstructure of the garage. We've taken that out.

So removing all these items got us down to a price where I could say I've got that much money. Let's sign it and proceed from there, and then as we get nearer the end, we'll see how things go.

But I'm very realistic about what we're doing. We are entering into this project with no contingency fund whatsoever and we're also relying on Lizzie and I saving enough money from our pensions, because we're both pensioners now, to be able, during the course

of the project, to be able to complete it or more or less complete it when we get near to the end.

Ben: What happens if there are groundworks issues? Because you are on a slope.

Mike: We are. There is a possible groundworks issue. We know that most of Skye, it's heritage is volcanic. So, there's a lot of volcanic rock below the soil, known locally as rotten rock because it's a softish kind of rock. If that's what we hit – and the soil test suggests that's what we are going to hit – it's not too bad. It can actually be scraped away by a digger, it's that soft, but still a good solid rock to build on.

In certain parts of the island, there are much harder rocks – granites and so forth – and if we hit a layer of that, then we have to bring in specialist rock chipping equipment which, of course, is expensive and probably has to come from Inverness, some three hours away. So, there's an immediate problem.

In fact, I think that's the biggest potential problem that we face and we're not going to know whether we've got that until groundworks start, possibly in three weeks' time.

Because we have no contingency fund, the effect of anything like that is that it will simply prolong the project. So, money that we were going to have at the end, for example, to build the superstructure of the garage, we might have to say we can't do it. We'll have to just build the garage later when we can afford it. That's the biggest worry.

We are, of course, very fortunate in that having purchased this site, it came with nine acres of croft land with some sheep on it, and it came with a 1960s bungalow which is where we currently live. It's not a bad little bungalow. It's right next door to the site. And I said earlier that Skye is the second most popular tourist destination in Scotland behind Edinburgh, and what that means is that any possible holiday accommodation has considerable value. So, our ultimate fall-back position – and it's only partly because we've got this that I was prepared to proceed with this whole slightly risky project – is that the bungalow can be turned into holiday accommodation, which because of the demand, is potentially quite profitable.

So, if we're really up against it financially, towards the end of the build – we will have to do what we did at Crothorne again, and we will have to move into the new house in a barely habitable condition. Basically, we'll get one of the bathrooms operational,

we'll decorate a bedroom, we'll make sure the kitchen is working, we'll get it into a state where we can live in it but it won't be complete, and then a little bit of work is required to get the bungalow into a reasonably smart condition but we'll basically get the bungalow ready and we will start running it as a self-catering holiday let.

That has the potential to rescue us financially in quite an impressive way, if what I'm being told is correct about the price that it might command. That is our get out of jail card.

Ben: Keep the bungalow. Don't sell it. The only thing I'm concerned about, Mike, is this does sound like it could take a few seasons to be able to complete your house. Would I be right?

Mike: To get it absolutely complete. Obviously, one problem is to make the bungalow lettable, we've got to do some redecorating and probably put some better furniture in it.

And you think that's going to take away some of the final finishing budget for the new house. But because I was saying earlier there's very little interest on money in the bank, it's a terrible time to be a saver. It's a very good time to be a borrower and small business loans are relatively easy to get, I understand from local people who've done it. Interest rates are quite reasonable and repayment terms are quite flexible so, you can pay back money as soon as you've got it. So, the logical thing to do would be to take out a small business loan to turn our current home into a holiday let, meaning that we don't have to take that money out of the budget for the new house. So, it's almost like an alternative to taking out a completion mortgage, meaning that we can get the bungalow into a state where it's earning money pretty quickly.

You might be alarmed on how much you can earn in holiday accommodation on the Isle of Skye, but it's probably one of the few ways you can actually make useful money from property these days, I think.

Ben: Well, I wish you luck with it. I am certainly upset that I haven't been able to go up there before. It sounds like construction's about to kick off. The one good thing is that you've been making your video reports, so that I feel like I've been there already. Tell us about those and where we can find them.

Mike: The website for the build is at portreepassivhaus.uk. Also on the site, there are links to the two video reports; there will be more as the project proceeds, and there's also an almost-live webcam. So,

once construction starts, you'll be able to see. The image updates every thirty seconds so, it's close to being live. So, it will be possible to follow the build in almost real time and see what's going on, on a day to day basis.

Ben: Fantastic. Let's catch up again, if you're amenable to that, in say a year or so. Hopefully we won't find you sitting in a concrete shell waiting for the summer to get those lets out.

Mike: No, or in a home for the criminally insane.

Ben: Good luck, Mike.

Mike: Okay, no problem.