

A future-proof contemporary eco home – with Liz and Mike Hill

The show notes: www.houseplanninghelp.com/210

Ben: When did you first come up with the idea that you'd like to build a house?

Mike: I think it's something that they've had for quite some time. It's very difficult to put a time on it, as to when we were going to do it. But we've always wanted to build something eco. A passivhaus has always been the sort of thing that we've looked towards, and when we finally decided to go for it, it must've been four or five years ago I suppose.

Ben: How did you find the land? What was that journey like?

Liz: It was already part of the land associated with our old house.

Ben: So that makes it nice and easy. Did you always have this idea then?

Mike: I think it's always been there as a possibility. It's not something where we actively said yes, this is what we're going to do in the long term. But having got the land and the opportunity was always sitting there to do it, when we got to a point where we could, we thought, why not?

Because with the children going away now and doing their own thing, we were looking at downsizing. So, we could have either sold everything off and moved somewhere else, but actually we really liked being here. So, it seemed a natural thing to utilise what we already had, divide the land up and build something which we actually wanted to do and be involved with.

Ben: You've obviously done a very good job of dividing it up because I didn't notice another house at all. How far away is it?

Mike: I don't know, four-hundred metres or something like that.

Liz: Fifty metres.

Mike: Depending on where you're measuring from.

Ben: Somewhere in between. Was this going to be easy to get planning permission? Because if you have a lot of land, people always say, 'I'd love to have a house there.' Why did you think you'd be able to build here?

Mike: Well I don't think we automatically assumed that we would be able to. Around here, trying to get houses in is a bit hit and miss. With the changes in the unitary development policy and the local councils and everything trying to work out what they need to do in order to meet government requirements, we thought it would actually give us an opportunity to see if we could build something here.

If we hadn't done it and we'd moved away, and somebody else had just come in and done the same thing, built a house there, we'd have felt pretty upset that we hadn't made the effort. So, whilst there was no guarantee that anything would come of it, we thought well we've got to try for it because if we didn't, we'd be mad if somebody else came in and did it.

Ben: What was the house that you lived in before and what did you want from your new house? What would be different and be on that brief?

Mike: The old house was built in the 1960s and 1970s. It was a wood construction and not the warmest of houses. It was also quite big and with just the two of us rattling around in it, there were a number of rooms we weren't using.

So, we wanted to have something that was more intimate with us, something that met our requirements for being able to work from home and being able to do our own thing in our own rooms and hobbies. We just wanted a property that worked better for us as a whole, rather than having rooms and facilities we weren't using.

Ben: And how did you start that design process?

Liz: We started with a brief which we sent around to a few architects, which in hindsight was completely ludicrous.

Ben: Why?

Liz: We wanted things which you could not get in that sort of price bracket.

Ben: It's difficult to tell, isn't it? When you start somewhere, you have no idea. I think you're right, you've got to start with something like that.

Liz: Yes. We came down to a couple of architects local who had experience with passivhausing and we spoke with both of those and then chose one which we felt was the most applicable for our needs.

Ben: Had you honed that brief down at that point? You mentioned that you sent it to a number of architects.

Mike: Yes, we did. We produced an architect's brief which outlined what we wanted, the rough size we thought we wanted, number of rooms and how we were going to use the space.

Some of them took it literally and said, 'okay, that's what you want, here's what it's going to cost.' And we went, 'maybe not.' But the architects that we chose, they came back saying, 'we hear what you say, but what about these as alternatives?' That started the process of dialogue with them, and that process led to coming up with a number of designs and saying, 'what about this? What about that?'

We went away and probably came up with something which we weren't quite expecting when we started the process, but something which we feel now works really well for us.

Ben: Liz, there were certain aspects that you were keen to incorporate into that design, weren't there? Maybe you could go through a couple of those as you think around the house?

Liz: We wanted one of the bedrooms to be downstairs to futureproof it, we wanted not totally open plan. We wanted the kitchen separate from the living room.

Ben: Why? It's quite interesting because a lot of people go for open plan these days. Do the reverse argument here.

Liz: I like to listen to the radio when I'm in the kitchen. I don't think other people should listen to it. I like to be able to make as much noise as I want in the kitchen and not disturb other people in the living area, as well as keeping any smells or untidiness hidden away.

Ben: Anything else that you can think of, Mike?

Mike: One of the things which we were keen to look at was we would have elderly relatives who'd come to visit us. We've seen them in their own houses have problems as they've got older and more frail. So, we needed a room that we could actually partition off and use as a bedsit if they became ill, have easy access to downstairs facilities – toilets, showers and whatever.

We wanted everything that was on the same level and fit for life. So we wanted to make sure we had wheelchair access, nothing to get in the way. That meant spaces were slightly larger than perhaps they would've been otherwise.

That was one of the things we gave the architects, to say this is the type of thing we need, and then they came up with some designs of how we could achieve that.

Ben: Also, there are elements, as you take me around, where you said you could've had four bedrooms, five bedrooms. But you've actually been clever about just not overdoing things, haven't you?

Liz: We opted to go for three large bedrooms where we could use them either as studies or as double bedrooms, rather than having a spare room dedicated to just as a guest room which wouldn't be used most of the time.

Ben: How did the designs develop? I know that you have these two cubes that interlock together. Is that what you started with, when you were working with Architype?

Mike: No, not really. What Architype came up with to start with was three quite different designs. One was a long bungalow-type look, one was this type of house, and one was more your conventional sort of house.

We would talk with them through the pros and cons of the different styles, and so the design we ended up with kind of developed out of those discussions.

We didn't start from the position of going this is the sort of thing we want, we started with these are the types of rooms we want, these are the connectivities between the rooms we want, and this is how we want to use the house. Then the architect went away and said, 'here are some designs. We think these meet your requirements. What do you think?'

There were a number of times where we said, 'we don't think that room needs to be next to that room because the connectivity is not right, but it needs to have access through this way.' And so, it was a two-way dialogue with the architect, to arrive at what we have eventually arrived at.

Ben: When did you know it was right, that you could put your finger on it and say, 'this is what we want to build'?

Mike: I think when we couldn't think of anything else to change!

Liz: We actually went for the option of the rather modern-looking two interlocking cubes quite early on, when we were given the three options. We actually were won over fairly quickly with that and then it was just minor tinkering with the layout and size of it.

Ben: Often with Passivhaus, you've got the form to consider as well. Are there any issues that come up from two interlocking cubes? I'm assuming not, if Architype have suggested that as an option presumably.

Liz: It was more difficult to get it into Passivhaus and therefore more consideration had to be made on window sizes. And when they took the more local meteorological data into account, we did have to make them slightly smaller so that we wouldn't overheat in summer – or was it get too cold in winter? I can't remember now, which way around it was.

Mike: I can't remember. Certainly, we don't overheat. We've got a year's worth of data now, looking at the heating in the house. I think we went over twenty-five degrees for about one hour on one day. The rest of the time, we were well under the criteria.

Ben: I've noticed you've got quite a few trees around here. How does that change things? I assume it must be to your south?

Liz: No, the trees are to the north.

Ben: Okay. That will answer that one.

Mike: But there are trees south-west-ish. It means as you go through the late summer, the trees will stop the sun from the late afternoon onwards. So, that level of heating doesn't happen and I think that's part of the reason why we don't overheat is because we get this natural shading from being surrounded by these trees, if only from south-west-ish round.

Ben: Do you have a good access then from the south, for the low winter heat that no doubt we're having at the moment?

Liz: Yes. Completely clear access to the south.

Ben: That's why it's all so clever, isn't it?

The construction phase then. How did you work out how it was going to be built? Were you guided a lot by Architype or did you have your own ideas?

Mike: I think very early on, Mike Whitfield was involved, not only with 'this is the type of construction,' but also, 'if you developed it in this way or designed it in this way, then it will make it easier to do this or that.'

So, we very much had a three-way working relationship with Architype and Mike Whitfield pretty early on, I would say.

Liz: Hmm, before we went to planning.

Mike: Hmm. So, that helped a lot with making sure that by the time we actually got a design, we knew we had something we could build.

Ben: So, this is really a design and build process would you say, as opposed to a standard going out to tender? I know Mike as well and he's a good guy. He's going to do a good job for you. Is that how it started from before that planning?

Liz: We decided not to go out to tender. We had seen Mike's work and heard his reputation and as we lived in his area, he seemed a sensible person to do it.

Ben: So, everything was coming out at the right cost, as you went along, because of that knowledge? Or were there things that you had to work on?

Mike: We had a costing done at the early stages and I would say we were pretty much within that ballpark all the way through. I mean, there were obviously slight tweaks that we did, but mostly we wanted to make sure we got the requirements and the design correct from the outset. So, we didn't have many changes. Certainly, none which were significant. And therefore, the costings were fairly accurate.

Ben: What is the build system that you've used for this?

Liz: It's timber framed with I-beams and ...

Ben: Warmcel?

Liz: Yes, Warmcel. It was Warmcel.

Ben: Warmcel insulation. It's surprising how often I come across that as a build system. So, the I-beams shoot up and then they create the cavity ...

Mike: I think the advantage was it was stick-built with the I-beams and it was from zero to being watertight within eight weeks. I think that is really impressive, to be able to do that. Especially when you look on

the television, at Grand Designs and those programmes, the number of people who seem to have their house sitting in water for months on end, whereas ours was watertight within eight weeks.

Liz: We were so organised that our windows actually arrived before the house was built.

Ben: Very good. And how long was this build process?

Mike: Depends when you start counting!

Ben: Why?

Mike: Well, are you including the groundworks?

Ben: I'll include the groundworks.

Mike: Well, the original groundworks started maybe in the summer of 2015, and they were all completed by the end of 2015. Then the building started in January 2016 and we moved in here in November 2016.

Ben: Was it all a very smooth process? Were there any hiccups or things that you had to deal with along the way?

Liz: I think the only one was when the windows arrived, we found that some of them were hinged on the wrong side.

Ben: How did you deal with that?

Liz: Some of them we were able to swap, and in some cases, we decided it didn't really matter which side the hinges were on. So, we went with the hinges on the side they came with.

Ben: Does that mean that some windows open outwards?

Liz: No, they all open inwards, but it was a question of whether they were hinged on the left or right.

Ben: Got you. I'm at the stage where we're about to order our windows. It's been a fairly lengthy process. It surprised me how much detail there is.

When you think about windows, it's just windows. But there's a lot to take in. I can imagine this must go ...

Liz: Our problem was that there seems to be a discrepancy between how the UK draw their window designs, as to which side the hinges are on, and the European. Somewhere down the supply chain, half

the windows had got converted from the UK standard to the European standard, but not the other half.

Ben: Oh my goodness. Well, it sounds like you dealt with it well. Also, fixtures and fittings. That's where things can add up. I like the glance that you had between you! What do you want to tell me about that?

Liz: Apart from the number of decisions you have to make during a build, which you don't really expect to have to make at a particular point, we were tending to go for the budget end.

Mike: Well, yeah, mostly we did. The door behind you, you'll see has got a nice oak latch and it's a nice oak door. So, some things we actually went with Mike's suggestions, which really have improved the way things look. Other ones, we decided what we were going to do ourselves and we went for the more budget end.

I think as Liz says, it was the sheer number of things you have to make a decision on. You think you've got a complete set of architect's plans and the builder's all on board and you think everything is plain sailing, but it's not. And when you're asked about a decision, you can't go away and say, 'I'll think about it for a week.' It's a decision that has to be made then and there.

That, I think, did create a lot of time. Especially for Liz because she was here on site most of the time.

Ben: Did you feel that was a big advantage, being able to respond? Because they do always say to stay on site.

Liz: Yes. Because our old house was effectively on the site, that meant I could come down each day to check how things were coming on, but equally, if they had any questions, they could just come up and bring me down on to site and say, 'do you want it done this way or that way?'

I think that helped quite a lot, to be able to do that.

Ben: Finance for this project – you mentioned that you had to be careful about certain choices that you made, but how did it play out overall? Did you manage things well?

Liz: It came within the budget of what they said it was going to be.

Ben: Is that for the construction, or do you include everything? Because there are often some hidden costs, aren't there? When you think

about landscaping or just little things that maybe you haven't planned in – I'm talking about myself really.

Liz: Landscaping is yet to be done. We knew that there were some costs which at the beginning might not be totally quantifiable like how to put the septic tank in and the utilities to the building, but in fact none of those were too horrific in the end.

Ben: Are there any other eco-features or things that you were wanting to have on this project?

Mike: I suppose a big one which we looked at but didn't go for in the end was rainwater harvesting. The advice that we got was that it wasn't cost-effective to go for it from the house. So, we've got rainwater harvesting off the garage and the greenhouse, which will be used outside.

You always feel that it's a shame it's not more cost-effective to do something like rainwater harvesting for flushing the toilets and that, because there's a great demand now on water and the purification of it.

That would be the one thing where it would've been nice to do it, but actually, cost-effective wise, it seemed to be outside of the ballpark.

Liz: But we did put in solar PV on top of the roof, which given that it feeds into the hot water tank when we generate too much electricity, so between March and October we haven't needed the boiler on at all.

Ben: You also have an orchard that you've planted, which I think is quite a nice touch. Can you explain why you've created that and how it relates to the building?

Liz: The village has a history of local orchards, and we wanted to continue that by planting an orchard.

Mike: I think there's also the fact that some trees did have to go down in the build, plus we've also got some very old trees as well, so we wanted to bring the next generation along with the orchard.

Ben: Just looking at some of the other features when I had the grand tour around the house, so hard surfaces on a lot of the floors. What led you to that decision?

Mike: I think downstairs, it's because you've got the big thermal mass on the floor and therefore, you couldn't have insulation of any sort on that so, carpets were right out.

The choice really then came down to do you use a slate or a tile of some sort, or do you use wood? We felt that we'd like wood in some of the rooms but not necessarily all of them. So, we went for a limestone flooring in the main living area and then wood in other areas.

But we felt that the two bedrooms upstairs would be much better to be carpeted because that means if you get out in the middle of the night, you haven't got to find slippers or whatever. It's a much nicer, warmer feel to it.

But overall, we find that the mix between the different surfaces seems to work quite well.

Ben: And you have a little library don't you en-route to your study?

Liz: A part of the design brief was that we wanted so many yards of book space, and the architects kindly provided us with a little walkthrough library to give us that space.

Ben: With a simple thermal envelope as well, you don't have attic space, or usable attic space anyway so you've gone on to create more storage. Maybe you could tell us about that?

Liz: Upstairs, along the corridor, we've put some deep cupboards in, so that we can put all the stuff which you would usually put in a loft, into these cupboards.

Ben: Does that all work? Do you find you have enough? It's difficult to gauge how much junk – or does it force you to just get rid of some of the bigger items that linger in the house?

Liz: The garage is still full of stuff which needs sorting.

Ben: It goes on.

As we get towards the end of the podcast then, do you have any tips for people who might be going into this, other self-builders wanting to go down an eco-route?

Mike: I think it's definitely worth going down the eco-route, given the zero carbon initiatives that one should be pursuing and that. It does cost slightly more to do it, but actually the cost isn't significantly greater than a normal house. And the benefit long-term in terms of the

reduced amount of energy you need to keep the house warm and comfortable more than pays for itself.

So, we would well recommend people to go down an eco-route rather than a conventional route.

Ben: Liz, what's it like to live in and do your various bits and pieces in the office, or the kitchen?

Liz: It's much warmer than the old house in winter.

Ben: With a bit of snow on the ground, I think we're still noticing that. Do you notice anything else about the comfort or the air quality?

Mike: I think the air quality, because we have an MVHR system which constantly churns it around, I think the air quality is definitely better. I don't seem to sneeze so much as I used to in the other house. And although yes, you do get dust and things around the place, because the air is changing on such a regular basis, it does feel a lot fresher but without that breeze that you get through cracks in window panes and whatever in the house.

So, I'd say the actual quality of life we have in here is much better.

Ben: It's been fascinating to hear the self-build story today. Thank you very much for chatting to me.

Mike: Our pleasure.

Liz: Thank you.