

Episode 232

Which parts of a house build can you do yourself? – with Ben Ribbans

The show notes: www.houseplanninghelp.com/232

Ben R: It started, for us, probably five years ago, I would say. The land had been in our family for twenty-plus years with just renewal of planning permission happening every three years.

We got to the point where me and my wife were in a financial position where we could afford to build. And we thought rather than risk losing planning, let's make a start and start building something.

That was probably five years ago the process started.

Ben (HPH): Having that planning permission renewing all the time is quite interesting. I'm not sure I've come across this. I think I'm right in saying it's a twenty-year-ish period, isn't it? So, when was the first one in?

Ben R: I think it was 1991. The land was previously my father-in-law's where he renewed the planning permission every three years just to keep it going, really.

Ben (HPH): But why did he get the planning permission in the first place?

Ben R: I don't know. He always had the dream of building a house, but I think you need to be of a certain mindset to be able to actually pull it off and do it.

Luckily enough, me and my wife were quite determined to build. It wasn't something that we ever thought about doing. It wasn't as if we thought, 'let's go and buy a piece of land and build something.' It was the fact that we had the land already and we thought, 'okay, maybe this is something we could do,' and then explored the option.

Ben (HPH): Each time it gets renewed, is it just a simple process?

Ben R: Fairly simple, unless you change anything. If you want to stick with your original design and you literally do not want to change anything then you can just resubmit the plans, pay your submission fee,

whatever it happens to be – three- or four-hundred pounds – and then they'll just pretty much give you the stamp of approval.

It's a relatively easy process. It only gets more difficult if you change something. If you change the design, change the position of the house, change the size of the house or change any particular features, then you would have to go back through that planning permission phase again, which of course is quite lengthy and costly.

Ben (HPH): And you must have done some of that as you thought about the house you wanted to build?

Ben R: Yes. My wife and her sister came up with a design that they were planning to build, just as me and my wife met, some eight, nine years ago. It kind of resembled more of a contemporary factory, if you like. It sounds a bit awful but actually, it was okay. It was a pretty good design.

I got involved a little bit because my background is design engineering. So, for me, designing things kind of made sense. So, I assisted them a little bit. I was involved in that first set of planning permission, if you like.

It's quite a difficult process. Once you submit, then the design is kind of fixed and every time you want to change something it goes back through the planners again, which then takes more time. And I think it's less financial and more time. For us to get to the point of actually building something was at least six months, I think, from putting the first initial plans in, to actually being able to dig some ground. And if you change anything then potentially you're waiting another eight weeks for your changes to be approved or not approved.

Ben (HPH): What did you want from your house?

Ben R: The design kind of changed, I suppose. In the beginning, the wish-list is not as big, if that makes sense. Then gradually, as time goes on, your wish-list gets bigger and bigger because you think, 'it would be nice to have this, or it would be nice to have that. What about when our children are this age? They'd like to have one of these.'

Our children were very young at the time; our youngest was only six months at the time of starting the build. So, he was only just born when we started the process. And then as you go through that process, obviously they get older and then their requirements change, which then makes you change.

But the real driver for us in making a house like this was the lack of mains facilities. So, there was no mains gas here at all. When we started building there was no electric and no water. We had literally nothing. Without access to mains gas, that dictates your design to a certain degree.

In a previous house, we had an oil-fed boiler which was a nightmare. We had oil stolen out of the tank one evening. Someone broke in and stole the oil. It was very expensive and just not very efficient. We originally wanted to write that off completely. Then we went down the road of thinking if we're not going to use oil, what's going to power the house? What are we going to use?

Our original plan was to build a relatively standard house but have lots of renewable energies: solar PV, air-source heat pumps, ground-source heat pumps – we were looking at all the different options. And then the more we researched, we gradually honed into the Passivhaus specification. And then again, coming back to my engineering, I thought actually, if you address the fabric of the building first, get that right, then actually your energy requirements change quite dramatically, so then you can get away with a much smaller air-source heat pump or ground-source heat pump or you can run on pure electric and you're not using anywhere near as much as you would normally.

That was quite an interesting revelation, I suppose. And I think we'd actually had some of the design work done by the time we decided we were going to go full Passivhaus. So, we had the basic floor plan already agreed and much of the design was kind of there, or thereabouts.

Ben (HPH): How were you designing this? You mentioned about input from yourselves, but have you got an architect? Is it a designer? Are you doing a lot yourselves?

Ben R: The floorplan we came up with ourselves. And it was relatively easy. We just thought about all the things that we wanted in the house and how we wanted the layout to be, what would work for us as a family and the way we like to live.

We'd been to a few architects in previous versions of the house and previous planning permissions, and probably expected a little too much from the architects. To my mind, you would give them a wish-list and then they come up with the design for you. Whereas we found some of the architects we worked with, you were the one coming up with all of the ideas and then they would just draw square boxes to make it fit around what you wanted. Which to my

mind I kind of thought, 'why are we doing that?' With that experience, we thought let's actually do as much of the design work as we can, in terms of the functional layout.

Once we got the basic floorplan agreed, then it was time to get an architect involved. And once we decided to go the Passivhaus route, obviously you need to get an architect that is familiar with Passivhaus design because there are subtle differences between what a normal architect would do and what a Passivhaus architect would do.

We were actually driven by the frame manufacturers. We used a company called Touchwood Homes and they already had a good working relationship with an architect and an energy consultant. So, I thought in the back of my mind, if they all work together already, they all know how each other interprets different things and they know how they work. So, if I just come into that mix as the project manager/main contractor, then potentially you've got the core team there which can then push it forward. You can pull in subcontractors as and when you need but the fundamental team is there, in place. And actually, I have to say, that worked out really well for us.

Ben (HPH): Who is this?

Ben R: I used an architect called Peter Smithdale who did all of the design work, the intricate threshold details, and then we used an energy consultant called Rod Williams to do all of the Passivhaus calculations and assist in selecting an air-source heat pump, how much PV should we have on the roof, orientation of windows et cetera.

With that core team, that was enough to get us to the point where yes, we can build a house, we think we can build a house, we've got a good design, we think we can achieve Passivhaus certification at the end, and then it was just a case of working out when each part of that puzzle needed to go together and who I needed to then make that happen.

Ben (HPH): Were you always going to be the project manager?

Ben R: Yes.

Ben (HPH): Why?

Ben R: It's something that I've done anyway, as a job. I suppose maybe, I think if you are going to be building your own house as a self-builder, then if you have the opportunity then you should take that opportunity and do as much as you can yourself.

We're in a very fortunate position that the company we run had a core team already in place that could run that company without us being there. That allowed me and my wife to be fairly hands-on and free every day as much as we needed to, which was perfect. Obviously, if you're not in that position then things change. You could still be project manager from your desk, wherever you are or whatever job you're doing, if you've got that time that you can spend on it. But in terms of the actual physical build and being there on-site, obviously you need that flexibility with your work, whatever that happens to be.

But yes, I always wanted to be project manager, and I think as time went on, we took over more and more responsibility and more of the roles. Which we probably weren't intending to do at the start of the project.

Ben (HPH): What does that mean?

Ben R: Well, I think in the first instance I thought, 'okay, I can be project manager. I can draw a Gantt chart and I can work out when things need to be scheduled, I can order materials, I can do all of those things. That's fine.' But you think, 'well, I can't build a house. I don't have any experience. I don't really know how to do any of these things.'

And then as time goes on, you research more and you look into how houses are built and you think, 'well, I could probably do that part. Let's have a go at that.' Then once you complete that section, you think, 'oh, well I didn't know how to do that, but I worked it out. Now I've got an end result and it's exactly what I wanted. So, maybe I could do this part of the project.'

I think as time goes on, that happens more and more, to the point where you end up spending pretty much your whole life in the house until it's finished.

Ben (HPH): What were those first steps, then? You get planning permission, and then you decide we've got to get this on site now.

Ben R: The first step for us – and I guess it's different for everybody – because the land had been pretty much untouched for twenty years and it's a relatively big site at half an acre, there are a lot of trees, a lot of shrubs, a lot of weeds and you physically couldn't even get in to the site to start with. So, I went to a groundworks company and said, 'I need some site clearance done and a temporary driveway made, just so we can make a start, we can get vehicles in and out, we can get materials in and out. How much would that cost?'

The groundworks team were family friends anyway. So, my main contact with them said, 'we could come and do it for you, not a problem, but it's going to cost you ten- to fifteen-thousand for us just to do the clearance. Whereas if you buy your own digger and learn how to use it whilst doing the site clearance, it would probably save you money and then you can use that digger throughout the project.'

Ben (HPH): Is that the one parked out the front?

Ben R: It is, yes. I can't bear to part with her.

Ben (HPH): What's her name?

Ben R: She doesn't really have a name.

Ben (HPH): You let me down there, Ben.

Ben R: But she's been very faithful so, I'm reluctant to get rid of her just yet. We've only been in two years so, it's still early days.

So, then I went on the hunt for a digger. I thought, 'how hard can it be? If someone can learn how to do it, why can't I learn how to do it?' We had the perfect opportunity to do it where the ground was, it didn't matter if we ruined some tree stumps or took out a hedge or whatever. It didn't make any difference. So, we could learn on the job.

I guess within a few months or so, we'd pretty much cleared the grounds over weekends. We dug out a few trees and made a site entrance, then we got some hardcore delivered and laid the hardcore, so we made the site entrance. And then every time you do this little job, like I said before, you get a little bit more confident and you think, 'oh, okay, alright, we've managed that. What's the next job? Can you do the next thing?'

Ben (HPH): But you normally need to be someone quite practical. Had you done things in your old house or some other project, helped friends ...?

Ben R: Yes. I think I've always been relatively practical anyway. With the engineering background, I've always done a fair amount of DIY. We'd done a couple of renovations in our old house, a small extension. So, it wasn't like I was coming in completely green, never held a drill in my life.

But yes, I think going from maybe knocking a wall down and putting some plasterboard up, to building a house, at the time seems like a big leap. You think, 'I'm not sure I could do that.' But as time goes

on, you find out you can do it. And the internet is a wonderful place where you can find out pretty much everything you can ever imagine. If you get stuck, I'd just go on the internet or fire up YouTube and have a look and learn from there.

Ben (HPH): What did you decide to get other people to do? You mentioned the frame. I assume that was put up by Touchwood?

Ben R: Yes, Touchwood put the frame up. We had all the main subcontractors that people would normally have, I suppose. But with most of the subcontractors, I tended to get them to do the vast majority of the job but not necessarily all of it.

For example, the groundworks team, they brought their own digger, but I also had my digger. So, actually me and a friend of mine dug the foundation for the garage, we dug the foundation for the house, but then we had their team come on site to help us assemble the insulated slab, to put rebar down, to put the weld mesh in. So various stages, because if you try and do everything by yourself, you'd never finish. It would just take you forever.

So, you do need a team of people who understand the basics of what they're trying to do. Passivhaus adds a little bit of complication into the mix. You need to be a lot more aware of what the subcontractors are doing, to make sure you end up with a certified Passivhaus at the end of it.

But in terms of subcontractors, we had groundworks, obviously an architect, Touchwood did the frame, we had a team that installed the windows, we had kitchen fitters come in to do the kitchen, we had a plumber do the last part of the plumbing – I did ninety percent of the work and then we had a plumber to do the final connections to the air-source heat pump.

Ben (HPH): Why take on plumbing then, and what did you learn through that? I'm assuming you hadn't done plumbing before?

Ben R: No, not plumbing a house anyway.

I tried to look at each part of the house as a design engineer, rather than as a DIYer. I tried to design the systems that were going to run the house. So, for the plumbing, I had a full plumbing schematic that I'd drawn out. So, I knew the design before we started to cut any pipes or put any holes in or anything.

For me, that just made sense because that's the way I'd worked before. I thought if I have a design in place and I know these are all the components I need and these are the areas they're going to go,

then all I need to do is follow that plan. As long as the plan's good, I can just follow it. Whereas from a plumber's perspective and probably an electrician's perspective, they probably don't work like that normally. They probably work in the sense of, 'I've always done it this way so, I don't need to draw anything first because I know how it goes.' But for me, I didn't know.

So, I did a lot of research as to plumbing techniques.

Ben (HPH): Where did you get those from?

Ben R: The internet. Just seeing what other people had done.

Ben (HPH): How did you know who to trust?

Ben R: Ha. Well, yes, it's a difficult one. I guess there's always that worry in the back of your mind that I'm committed to this design now, and what if it doesn't work at the end?

But you just have to, I suppose, trust your instincts to a certain extent. There's a lot of self-build forums out there that you can go to. You kind of learn who the people are that you can trust and who are the people that are maybe just chiming in without any real experience. You just have to tread a little bit carefully.

The main thing, if you are going to take on anything yourself, is follow the regulations. Because the regulations are there to help you and make sure that you've done everything you should have done when it's finished. I downloaded a copy of the building regulations for plumbing and the building regulations for electrical installations, just so I had an overview of what it should look like and where it should be heading when it's finished.

Ben (HPH): And you're not afraid to sit down and spend time just learning as well? Because once the build is underway, there's a bit more pressure.

Ben R: Yes. Once the build is underway, the window for learning is a lot slimmer.

Ben (HPH): It goes 'til three in the morning.

Ben R: Yes. I suppose maybe that's part of why I thought if I design it first, so you're not there hands-on with a load of pipe in front of you thinking, 'okay, how am I going to route this through that section there?' You've already done that work at home before you get ...

Ben (HPH): This was before anything happens?

Ben R: Yes. Before you ever start. Because that whole planning permission process takes so long. Don't wait until the planning permission falls on your lap, and then you think, 'okay, let's start designing a house.'

Assume that you're going to get planning and then do all that background work while you're waiting. Get your project plan in place, to a certain extent get your subcontractors lined up, have an idea who you're going to use, and have some of your design thoughts already mapped out as much as you can.

It's not always possible and things always change, things go wrong on site, and that's just a part of self-build unfortunately. But the more background you can do before you ever set foot on site the better, for sure.

Ben (HPH): What was the biggest challenge?

Ben R: I suppose for me, probably staying motivated is quite a big one. Especially if you're going to live and breathe building your own house from the start, all the way through to the finish. It's a big commitment and you will get tired, frustrated and want to give up and think, 'maybe I've bitten off more than I can chew.' So, staying motivated is a tough one.

I think that comes back to the planning. The more that's planned to begin with, the less problems you have, the less problems there are, then the more motivated you can stay. You can stay positive then because every day is a success. At the end of that day, you've put in that new wall or you've run the electrics or whatever it is.

Ben (HPH): You've moved forwards. We like forwards.

Ben R: You've moved forwards. You're always moving forward, yes. And trying to eliminate those mistakes or potential mistakes.

There are always going to be mistakes or things out of your control that go wrong. We had a couple of things that went wrong here that were out of our control.

Ben (HPH): Can you tell us what they were?

Ben R: Yes. Probably the biggest was to do with our bifold doors. We've got two three metre bifold doors, south facing, and they were ordered at the same time as the rest of the windows and doors. The beauty about a timber-frame build is that you can order the windows way ahead of having the openings cut because you can design it to fit.

I've seen a lot of programmes, people wait until the opening is there, then they'll measure up and then they go and order their windows. Of course, windows take two to three months so, you've lost a huge chunk of time whereas we didn't do that. As soon as we had the design finalised in terms of the frame, we pretty much ordered the windows.

They were all supposed to be here before Christmas, I want to say. So, once all those windows go in, you were effectively airtight at that point. Then once you're airtight, then you can start thinking about plasterboard, you can start thinking about the MVHR system, you can have your first initial air test to see how close you are to the Passivhaus spec which is obviously quite an important one. So, really you want to get those windows in.

As soon as the frame is done and you've got your airtight layer done, then get your air test done. Because at that point you can put things right. If there are any holes anywhere that you've missed, you can fix them.

Now, unfortunately, we paid five-thousand pounds for our deposit for the bifold doors to an intermediate company, not the actual manufacturer themselves, and just assumed everything was going fine, they were underway being constructed et cetera. It came to a couple of weeks before they were due to be delivered and I phoned the company and said, 'are you on schedule? How's it looking?' and couldn't get hold of anyone at the company, which seemed a little bit odd.

I ended up going to the actual manufacturer which was Solarlux and said, 'I've ordered these through a different company but they're coming to you. Have you seen the order? How far are you along with manufacturing?' 'No, we never received the order.' So, you go into a slight panic mode thinking, 'I really need those windows in because I've booked an air test in three weeks' time, or whatever it was at the time.

Ben (HPH): But it's just your bifold doors? Were you able to board up?

Ben R: It was just the two bifold doors. Everything else was okay, it was just the bifolds.

Luckily we did some temporary boarding up, but I didn't want to do an air test at that point because I thought it's going to be a bit of a waste. Because if I haven't sealed those holes perfectly with board or whatever it is, then the air test is going to be irrelevant.

So, I decided to wait on the air test. And actually, we had our first air test done when all of the plastering was done. So, the house, it wasn't finished but in terms of the airtight layer, there wasn't anything I could do. It was what it was, and I couldn't really fix anything at that point. Luckily, we passed easily. So, that was good.

But it turns out that the company we bought or ordered the doors from went into administration and disappeared with the five-thousand pounds. At this point, we're thinking, 'okay, the budget's taken a five-grand hit.' I spoke to Solarlux again and explained to them what had happened, and in all credit to them, they said, 'if you give us the remaining deposit ...' – which was another five-and-a-half-thousand, whatever it was – '... we will start manufacturing your doors and we will take the hit of the five-thousand.'

Ben (HPH): Really?

Ben R: Yes. Unbelievable. And sure enough, they did. And actually, they turned the doors around in, I think, seven weeks, and it was supposed to be a ten-week lead time. So, they did everything they could. They went above and beyond for sure.

So, eventually we got those in. Once those were in, the plastering was pretty much coming to an end, or at least half done, and then we had our air test done. I think we achieved point-two-three air changes an hour, so pretty good there. I wanted to be under point-two but, you know, I'll take the point-zero-three. That's fine.

Ben (HPH): Would that have been Touchwood's record or something?

Ben R: No, I don't think so. It would have been close. But point-six air changes an hour is Passivhaus spec so, anything under that is a bonus. But actually, in terms of energy efficiency and the amount of energy you need to heat the house, it does reduce quite dramatically the lower those air changes are. So, it was always on my mind that I'd like to get a good result if I could.

And actually, all of the tape sealing of the windows, me and my wife did all of those. So, that was a bit of a victory for us thinking we've done all the taping and actually we've still succeeded.

Again, it's one of those little victories. You think, 'okay, I've got a little bit more confidence now. I can go on to the next task feeling positive.'

Ben (HPH): At that stage you're nearly finished.

Ben R: Yes. There wasn't huge amounts to do at that point. It was more the aesthetics really.

Ben (HPH): What about the finishing up stages? How was that for you? You mentioned your interest in the project. Was it dwindling at that point, when it was more decoration and putting in bathrooms?

Ben R: Yes, I guess so. I suppose because it changes then from construction to final decoration. It's almost like two separate tasks. So, it goes beyond, 'I'm still building a house.' It's, 'okay, I've done the building so, I'm not going to get grubby anymore. I haven't got sawdust in my hair anymore. I'm not running pipes under floorboards et cetera. Now I'm making it look tidy.'

And yes, I guess it was probably the most daunting part in a way. Because I knew from my previous experience, in terms of construction, I can build it. That's fine. But the making it look like that show-home finish that everybody wants when they finish their self-build, that was the bit I thought I know I'm not very good at that. I know that's not in my wheelhouse really.

So again, it was lots of looking on the internet, trying to find design styles that you liked and then as best you can, recreating it. But again, we did all of the interior finishing ourselves. A lot of the little false ceiling details that you can see, we did all ourselves. So, you've got enough confidence at that point.

Ben (HPH): Did you ever have that moment where this is the end and you lean back, or are you always thinking, 'there's that little job'?

Ben R: There are always little jobs. Even now, there are still little bits that I think, 'I wish I'd spent more time doing that.' Or sometimes I look back and I think, 'I wish I'd done more.' I don't ever think, 'I wish I'd done less.'

Ben (HPH): What would you like to have taken on?

Ben R: If I was going to do one again, then apart from the bits that I legally can't do because you need a certification, whatever it happens to be, I'd probably do all of it. I'd do everything.

It sounds a little crazy.

Ben (HPH): It sounds a little bit crazy but you also, running this business, you're able to get a little bit of help. So, it might be worth just explaining when you need an extra pair of hands or how that worked, even.

Ben R: Yes. Luckily, with our other job, the team that we already had in place before we ever started building, we all got on very well with each other and their work ethic is top notch.

And actually, one of the guys who works there, he gets one day off a week. So, I came up with a deal for him where I would effectively pay him if he gave me an extra day a week of work, but he'd be working on the house with me. That way, if there was any time that I needed that extra pair of hands and my wife wasn't available because she was looking after our youngest or whatever, then he would be there to be that right-hand man.

That worked out really well. That's probably one thing I would say, if you are going to do it yourself in the strictest sense, you probably need someone there to act as a right-hand man, woman, whatever. It could be your wife, it could be whoever, but someone to assist. Even if it's just a sounding board. You might not physically need them to do anything, but you might just say, 'right, I've got a problem here. I could either do it this way or I could do it that way. What do you think?' And then they'll say, 'you don't want to do that because of X, Y, Z' and you might not have even thought about it because you're so close to the project at that point.

So, that was a big thing for me. And to be honest, I'd worked with a lot of the subcontractors already. So, that helped because you've got that level of trust with each other already, which makes life a lot easier. You want to try and avoid the stressful moments as much as possible and if you can, have a bit of a laugh and a bit of a joke with everybody and try and keep it fun. It should be fun for everybody, not just you. And then I think you get a better result at the end.

Ben (HPH): Finally, what has it been like to live in and step back and admire the work?

Ben R: Yes, very good, very good. I think the first year, it was all about numbers for me. So, I thought, 'okay, we've spent a lot of time, a lot of energy and money designing a house that needs to perform in a certain way.' So, for the first year, I kept a close eye on energy bills, how much water the house uses and all those things, and what was it like to live in. What was the comfort factor like? Did it tick all those boxes that we originally had? And sure enough, it probably works beyond what we thought it would.

For example, we've got a ten-point-eight kilowatt PV system on the roof and even though we got the lower end of the feed-in tariff – we missed out by, I think, six weeks; it had dropped from twelve-and-a-half pence to four-and-a-half pence or something which was a bit of

a shame – the house probably generates about seven-hundred pounds a year in terms of feed-in tariff, and our energy bill for heating, hot water, lighting, everything, is probably around about eight-hundred pounds a year. So, effectively it costs about a hundred pounds a year to run the house. So, a fantastic result.

And it's nice to know that you've done the work, as much as you could. You've been invested in the whole project all the way through. You remember each little screw you put in the plasterboard, all that pipe that you ran, when you laid a floor tile – all those things you remember. So, very good.

Ben (HPH): Well, Ben, I've really enjoyed chatting to you today. Thank you very much for your time.

Ben R: You're welcome. Thank you very much and for any budding self-builders out there, just have a go. You can do more than you think.