

Episode 288

Renovating a 1960s house for comfort and efficiency – with Russel Hayden

The show notes: www.houseplanninghelp.com/288

Russel: I'm an architect and I've worked all my working life in London. About four years ago, I decided that we'd outgrown London; with a young family, our priorities changed. So, in a move to be I suppose primarily closer to our in-laws, we moved up north and Stockport became our new home.

We found this derelict house, as it happens, right opposite my in-laws, for better or worse, and it's proved to be a perfect project for I guess our new life. Now we're living here and really enjoying what's effectively a passivhaus but not quite, which we'll come to I guess in more detail in a moment.

Ben: As an architect, is it your dream always to build new or did you quite like this challenge?

Russel: I think I've been completely open-minded, and I guess on balance I prefer the challenge of doing something to an existing building. It is more difficult, it adds a level of complexity, but I think a level of interest alongside that. You always have surprises and it's more fun.

Ben: I was going to ask you as a key question, and maybe something that we can bear in mind as we go through this interview, about money. How did you set your budget?

Russel: When we left London, we were fortunate to own a house in London and kept that, renting it out. As it happened, at about the same time we received a small inheritance which allowed us to purchase this property in Stockport and gave us a little left over for the renovation works.

The budget was set effectively by what we thought the house would be worth once it was complete. We went overbudget – we're both architects and inevitably, spent more than we expected to.

Ben: Well, you're both architects. For self-builders, it's even worse. You've got all the knowledge and you know what territory you're going into.

Russel: Well, you would like to think so.

It was helpful to have set the budget because it gave us a clear direction and clear target. We got pretty good value, I think, from what we did. We had a few little extravagances: we wanted a nice kitchen. But as a rule, we managed to keep it simple and pretty much worked to that budget.

Ben: Tell us about that valuing process. How did you know what it might finish up being worth, and were you right?

Russel: That's a good question. I guess we were just looking on Rightmove to see what things were doing in this area.

We're fortunate that it's a rising market here. We're in Heaton Moor close to Didsbury, and since we've finished the work, we've had it valued and actually, it's significantly more than we had expected.

Interestingly, the estate agent didn't really know what to make of it because he'd never previously valued a passivhaus and there's nothing else like it around here. So, he was slightly pulling figures out of the air, to be honest. But we think it's certainly worth more than we had anticipated.

But in a sense, it's incidental. Whilst we had seen this as a stepping stone – we weren't expecting to stay here; living in suburbia didn't seem like our thing – but actually we really like it here and we absolutely love the house and we have no intention of moving.

So, it's here for a while.

Ben: Fantastic story.

So, we've got the valuation, we've presumably got what it cost to buy the house. Is it just a subtraction at that point to work out roughly what budget you could play with and how much did you have as contingency versus your main budget?

Russel: We had some contingency and we were under some time pressure, to be honest, which meant that we launched into the project in fact while we were still in London. We found a local builder who basically stripped the house back to the bare bones and we just set him off underway.

Quite soon after that, we moved up here and I then took on the project management role of finishing drawings and overseeing what he was doing, and managing all of the procurement of materials and things as well.

So, he didn't give us a firm price at the outset simply because we hadn't completed all of the drawings and there were a number of things which weren't fully resolved, but we felt confident in proceeding I guess because we weren't novice. We knew what our limitations were. It felt manageable and it felt affordable. So, we cracked on and it's worked out pretty well.

Ben: How did you find this builder?

Russel: He was recommended actually, by somebody who'd just finished another project with him. He was a nice guy who had never done anything like this before but he had a really good attitude, solved problems, was proactive. He was generally used to doing smaller projects and it was interesting that you could sense every now and again frustration by him having to work out of his usual sequence while I did the taping.

I was the taping champion on the project so, whilst he bought into the principle of Passivhaus and was watching YouTube videos into the night to learn more, which was admirable and he was really interested in what it all meant and how it might change things, but equally there were times of frustration when he was not able to just crack on and finish what he would normally have done as I suppose effectively a jobbing builder.

Ben: Do you think this was a learning curve really? That was what the frustration was?

Russel: Most definitely. A learning curve for him and for us also because we'd not tackled anything on this scale before. I'd done the Certified Passivhaus Designer course just before leaving London so, I'd got some theoretical knowledge about the requirements and the science behind Passivhaus. I was then effectively cutting my teeth, I suppose, on the practical side of it, rather thrown in at the deep end. But on reflection, it was absolutely the best way to do it. I learnt a huge amount.

The other thing I would say is I also now have a huge respect for builders. Having done the materials procurement, I have a better understanding of just how much work is involved in getting materials, and then finding the best price, getting them on site when you need them – it takes a huge amount of time. I can now see,

having worked on bigger projects in London, I can now see why contractors have a team of surveyors behind the scenes doing all of this admin work.

So, it's a lot of work.

Ben: Let's talk about that relationship a bit more with the builder. How were you working with the builder? Were you just paying a day rate? Did you do a project cost? You mentioned you hadn't got the drawings, so they can get a bit nervous.

Russel: Yes. It was very simple. We paid him a day rate. It was one guy and his two lads with him. We had a daily rate and they basically did what we asked them to do.

I think it's not something that, as a professional, I wouldn't recommend a self-builder to do that, unless you are on site every day and you know what you're doing because you could very easily come unstuck.

Ben: Were you on site every day?

Russel: I was on site every day. We moved into my in-laws' house opposite which was a dream arrangement in many ways. We were able to keep a very good eye on things.

Ben: Let's go back a step to the actual site. Was it always going to be this property just because of its location near to the in-laws or was there something about it that you liked that you thought this is perfect for retrofit?

Russel: It's a good question. It's serendipity to be honest because we happened to be staying across the road when this house came on the market. I think it was a February half-term or something.

It had been empty for, we think, getting on for ten years and it was ripe for development. The garden was massively overgrown, huge trees growing in the back garden in particular, and it was just a very sad and sorry state. We'd seen this but hadn't thought anything about it, just that it needed sorting out.

Then it came on to the market, it went to sealed bids, and we were very fortunate to win the bid.

Ben: Can I just stop you there? Our one went to sealed bids as well and we lost out a number of times. So, how did you win it?

Russel: We bumped the price up, basically.

- Ben: We thought we bumped the price up, but it didn't work.
- Russel: Well, who knows? It's pure chance, isn't it? We went over, I think it was between five and ten percent more than the asking price. I can't remember exactly what it was now.
- We had a good relationship with the estate agent, and I think they were quite helpful as well.
- Ben: Do you think that helped you in putting in the right bid? Because technically, they're not allowed to say anything, are they?
- Russel: No, but they obviously had a rapport with the clients and I think if I was in the receiving position, I would be keen to make sure the house went to an owner that was going to either take good care of it or do something nice with it. They knew we were architects.
- It's a good question because in fact, thinking about it now, this was a probate case. The reason it had been empty for so long was because the owners had died, and they couldn't find the heirs for it. I think they eventually found somebody in Austria or somebody who had a nice little windfall.
- Ben: Let's get back on track. I just thought that was interesting. You were talking through acquiring the house.
- Russel: Yes. We won the bid and then realised that this was a project. We engaged Enhabit to help us with the Passivhaus consultancy because I realised that I wasn't going to have sufficient experience to properly tackle this by myself.
- We looked at the options of how far do we take it; they provided a very helpful report setting out, I think, four options from getting it to building regs. standard; doing it up to AECB Silver as it was then; going to EnerPHit; and going all the way to the Passivhaus standard.
- So, they set all this out for us in a report and we made the decision pretty early on that we were going to go for EnerPHit. For me professionally, this was going to become effectively my business card for my new venture up north, so we felt that it was important that we got as close as we could to something that was certifiable and within a reasonable cost. That effectively then set our brief.
- On reflection, it was a very helpful device actually because it then made everything very clear about what we had to do. I think that's one of the beauties really of Passivhaus. Although there are infinite ways of achieving it, you do have a very real target and with PHPP

you can obviously play games which help you to understand the more you do here, the less you have to do there and so on.

So, it was a really useful starting point.

Ben: We know a lot about the Passivhaus methodology. We've talked a lot in relation to new build because that's what the podcast has been about, and back in the day we did a lot on retrofit. But what does this mean then specifically when you're looking at some of the constraints of retrofit?

Russel: I think perhaps the best answer is by a couple of specific examples.

We decided early on to wrap the building externally with insulation, so we've got external wall insulation. It needed a new roof, the brickwork – it's a brick-block cavity wall – had absolutely no insulation whatsoever, and it needed sweetening up in some way. So, we took the decision to wrap it externally with a new roof. That effectively gave us a very clear steer of how we were going to develop the project.

One of the biggest challenges was with the existing floor which is a concrete ground bearing slab and it's the usual problem with what do you do at the perimeter, which is a massive cold bridge. On the whole project, it was the only significant cold bridge that was a concern. What we decided to do was to retain the slab, and put insulation on top of it, and accept that there was going to be a cold bridge there. We mitigated that by dropping insulation down the outside, so we put one-hundred-and-fifty mill of Dow Styrofoam dropping down to foundation level.

It helped but it's clearly not as good as a new build where you'd build the whole thing off an insulated raft, but it was as good as we could get without spending an absolute fortune.

The height that we lost internally was not too much of a problem because we decided to build it up to effectively one step of the stairs. So, we lost one stair height. And the first floor ceiling, we took off the plasterboard and exposed the joists to give a sense of a bit more height. So, we've now got a height of two-point-two-five, I think it is, to the underside of the joists which is okay.

It looks a bit rustic because the joists are all gnarled and they've got holes cut through them where they've had heating pipes in the past. We quite like the slightly more rustic look of that, though it divides opinion to some extent. But most people like it.

I think we were relatively lucky with the fabric of the building because it was in fairly good shape. What we did decide very early on was to minimise any structural alterations. There was a chimney breast which went up through the roof. That obviously doesn't work well with Passivhaus so, we took that out early on and replaced the structure where we needed to for that. But in order to keep the costs down, we were really keen, for instance, not to go moving windows and doors around unless we absolutely felt it was necessary. So, that was a positive actually because I'm sure we saved quite a lot with that. Because that inevitably costs more money.

Ben: When you were doing the external insulation, were there any constraints on how you finished that on the outside?

Russel: Not really, no. We ended up going for planning permission simply because the planners again had not previously had anything like this and were concerned about the additional size of the building, believe it or not. The insulation thickness was two-hundred-and-eighty mills so, fair enough, it was going to increase by half-a-meter plus a bit. And the ridge line of course would have gone up by a foot or so because of the additional thickness of the roof. But the render was not a planning constraint, interestingly. We were expecting it to be, but they weren't concerned about that.

Ben: Can you tell me a little bit about the space that you added where the garage was?

Russel: The existing garage was massive and much bigger than we needed, so we cut that short and extended on to the back of it to form what's effectively a garden room. It felt like the obvious thing to do and it's worked out really nicely because now we have a space where I work, we have an exercise studio, and it's added a lot to the house.

Although clearly from a cost point of view, we've got additional footings and additional fabric, it's a timber frame, very simple, and this in fact is timber clad externally just with a straightforward flat roof on it. So, it was a good value addition to the project.

Ben: What about some of the other features? How have you given it a facelift really, in this area?

Russel: I think what makes it special for us, is we worked quite hard to lift the interior finishes. This is where Anna has spent a lot of time researching materials and finding fittings which are not necessarily very expensive, but she has a very good eye for finishes.

For instance, we put down a parquet floor from Industrial Wood Flooring which extends right across the ground floor apart from the studio which is screeded. And upstairs as well, we have a slightly different colour oak parquet which goes in every room. You have continuity between the spaces which just helps the room to flow.

Together with upstairs, because we rebuilt all the partitions, we had full height doors. And that makes a huge difference because again, you see the ceiling, you see the plasterboard ceiling upstairs. You get continuity between the spaces. And that together with the floor really gives it a lift. I think that for me has made a big contribution to the joy really, particularly of the space upstairs.

Ben: We'll definitely add some images into the show notes so that people listening to this can check it out and have a look.

What was the biggest challenge then on this project?

Russel: I think one of the biggest challenges was actually making the connection between the fabric of the existing box, if you like. It's a very straightforward, ordinary house to be honest. Where the extension and the garage connect on to that, getting the detail of that to work minimising thermal bridges was one of the biggest challenges.

We didn't quite hit our target for airtightness. We got to just over one-point-one, I think, which was immensely frustrating but I'm fairly certain there were shortcomings in some of the workmanship around that connection between the existing building and in particular the new build. I think things are never perfect. You get them as good as you can, and you get to the point where you've just got to hope for the best. Unfortunately, the best wasn't quite good enough to get the certificate we were hoping for.

Ben: Were you able to check that out as you went along? At what stage did you realise that you were going to have to settle for one-point-one?

Russel: We did three air tests, and I think the penultimate one we were in the process of forming the connection between existing and new and we realised at that time that it was looking as if it was going to be a struggle.

Then when we did the final air test, it obviously wasn't good enough. But by that time, we'd really gone past the point of being able to remedy where I think the problem was.

Ben: Explain what you might be doing on a typical day project managing this, coming in, doing your materials. Was there a bit of a rhythm that got going?

Russel: I think there was. I'd start off doing some sketching. The builder, being a jobbing builder of course, was rubbish at reading drawings, never looked at them, didn't see the point in them. But he did engage with 3D hand-drawn doodles. And suddenly he got it.

So, I would typically start sketching and then looking to see what was coming up because inevitably you need to anticipate workflows and look a few days ahead to see what he was going to need. So, I then spent a bit of time probably working at my desk and then there'd be a delivery of some sort coming in. I'd go across and sort that out, see what the builder was up to, make sure he was fine.

Just backwards and forwards, to be honest. Every day was different, that's for sure.

Ben: What did you learn from the project?

Russel: I learnt that you need to be quite patient with people. We got to the point with the builder where I think he'd really done as much as he wanted to do. So, we were having to tread rather carefully with him because we really wanted him to finish so that we could move in.

One of the things we learnt is that with the right approach, you can get people to do a lot and find your way.

I guess the other thing was just from a personal knowledge point of view, a much better understanding – having been on the tools, as it were, particularly with the Passivhaus taping – of actually just what works and what doesn't work. I think that's especially valuable if you're typically a designer and not a builder because that invariably feeds back into what you then draw and detail. And I think what's been brilliant about the Passivhaus Designer Course is that I've realised that for the last thirty-odd years I've been detailing and designing buildings not terribly well without a proper understanding of moisture and how buildings work, thermal bridges and things like that.

Ben: I was going to ask, as a professional – because obviously, this is a massive issue in the industry – but there would be no way of you going back to how you were, once you've seen the light. Would that be fair?

Russel: Absolutely true, yes. It is that. You do see the light. I'm now working on kitchen extensions and house retrofits and I simply can't not

detail it in a way that is, if not full Passivhaus, at least adopting the principles of Passivhaus. Because the science just makes so much sense. There's absolutely no going back.

Ben: How do we bring everyone else with us? There are more and more Passivhaus buildings being built – and in a second, I want to ask you about your new one and the contrast there – but how can we help them to see what we can see?

Russel: I think it's just chipping away at it. There is clearly a growing movement. Education is obviously key, and I believe there's now more input at university level to ensure that students at least have a basis of the understanding of, if you like, the foundation of Passivhaus. I think that's a really good start. The more that can be encouraged, the better.

Ben: So, the new Passivhaus, how is all that?

Russel: It's very exciting.

Funnily enough, again we went to sealed bids on a bungalow in the Lake District and won that. We weren't sure what we could do with the bungalow. It's not in great shape. It's again a 1960s build, concrete panel, and I think very quickly once we started looking at it, we realised that it actually wasn't worth saving. The view is just too good, and the building is just not good enough.

So, we've taken the decision to replace the bungalow with a new-build and that's going to be a timber frame, going for Passivhaus, and if we can make it Passivhaus Plus – we're at planning stage now; it is a World Heritage Site and one can never be sure what's going to emerge from their deliberations, but we're keeping our fingers crossed anyway.

Ben: Quite a lot of what you've said today has drawn on your professional experience. What about if you're a homeowner who knows they want to retrofit either their existing property or they're moving and know that some work needs to be done? How would you suggest they go about it?

Russel: The budget is obviously key, as anybody will tell you. The projects that I'm doing at the moment, very often clients want to upgrade their house to a better standard, and it is extremely challenging to know just how far you can go within a budget.

If they are able to say they want to meet a particular standard, then somehow it becomes a bit more black and white. If they don't, then you do need to look at quite a lot of options. From their point of

view, you need to understand the difference between what do they want to spend and what do they need to spend. They need to spend it carefully and I think you get what you pay for.

It's finding that balance between getting the building to a level of comfort that is what they're looking for without spending a huge amount of money. And it's not black and white, inevitably.

So, I think you need to know your limitations and keep things as simple as possible.

Ben: Russel, thank you very much for your time today. Fascinating stuff. Really appreciate it.

Russel: Very good. Thank you.