

# HPH310

## **Ben Adam-Smith** 00:00

This is House Planning Help - episode 310. Hello, I'm Ben Adam-Smith and this is the podcast for you if you're interested in self build. I'm exploring what houses we should be building in the 21st century and trying to break down some of the major roadblocks that may get in our way. Coming up, we're looking at one of my favourite projects, Old Holloway Passivhaus. Not only will we be hearing from Juraj Mikurcik, the self-builder behind it, or George as I'll refer to him from here on in, but also two experts who have both been on the podcast before and were involved on this project. That's Passivhaus specialist Nick Grant and Passivhaus builder Mike Whitfield.

## **Ben Adam-Smith** 00:42

It's a slightly different episode today because it's being put together from video footage. I always feel that it's my job to draw attention to the best projects out there and give them as much publicity as I can. And that's why I was keen to make a video about this project. And it's been in the pipeline for a while but what with COVID... I don't know, it could even be three years since we thought about doing this and then returned to it at a later date and a later date. But I'm very pleased to say that it did happen. And collectively, George, Mike and Nick have decades of experience. So getting them together, it's a bit like a mastermind on how we should be building. So very fun. And I remember thinking, well, this is a five minute video we're filming here. That's fine, I know how to do that, how to structure it. And then looking back at it afterwards and just thinking there was so much good stuff here that I decided to double it to a 10 minute video. And even then it probably could have gone longer but one of the things of video making is you need enough shots. You can't let it get boring. And so I had run out of shots. So round about 10 minutes keeps you wanting more but we can do even more in a podcast, because we're making it with bits of audio. So we're going to tie together a few of the video clips.

## **Ben Adam-Smith** 01:56

Probably before we start, it makes sense to check out the show notes first, because you can have a look at the designs of the project. You can watch the video if you fancy. But if you're unfamiliar, I think that's going to make sense. George has some lovely photos of the house as well. We'll have links to his own blog today at [houseplanninghelp.com/310](http://houseplanninghelp.com/310).

## **Ben Adam-Smith** 02:20

George is a Slovakian architect who's lived in the UK for years and years and worked for top sustainable architecture firm Architype for many years as well. In fact, we heard from Polly and Kirk in the last episode as well. So it's a double episode with Architype. And in 2017, George and his partner Joyce moved into their new home, Old Holloway. The toughest part of the whole project was gaining consent to build the house. And it was almost a double consent needed for this. So George spotted the site on a bike ride and went to investigate further. It was a gap between two houses. And he worked out who the landowner was and approached them and it was none other than the Duchy of Cornwall estate. So part of the sale conditions required design approval. And that, of course, means a lot of

tooting and froing, and making sure that they were happy first. And in the process, their house became a single storey building. And then there was another two years in the normal planning system. So yes, four years. But I'm pleased to say after that it was pretty much plain sailing. So where do we start today? Well, I'm not alone in loving this home. Both Nick and Mike think it's a great building too. This is Nick starting us off.

**Nick Grant 03:40**

One thing to say is just this is probably my favourite house for all sorts of reasons. But it's also interesting how, I think I've said before, it's quite hard to photograph. So if you're judging it just from the photos, and you're a brilliant photographer, you make some of our houses, which are not that special, look brilliant. It's one of those ones you've got a visit.

**Nick Grant 03:55**

And I think that's the interesting thing with the discussion recently about Grand Designs and so on, how people look at magazines and TV stuff and influence their house choices on the wow factor. And they kind of miss the things that make something a really nice, nice house. And this, you know, when you visit, it's just everyone who does visit whether they're architects or just ordinary everyday people, they don't want to leave. That's yeah, down to the detail and so on.

**Mike Whitfield 04:21**

The other thing is the atmosphere in it, what we used to call the soul quality, is really good. And it's not... It's a debatable subject because you can't quantify it. But I mean, it is an important thing. And a lot of people want that in a house.

**Ben Adam-Smith 04:38**

I really like this as a starting point because I feel that both Mike and Nick are trying to describe a certain 'je ne sais quoi'. It's the feeling, isn't it, that you get from the building. Well, is it the house? Is it the happy people that live in there? Perhaps it's the Passivhaus? Or perhaps it's the straw bales with that lovely clay plaster? I don't know. You can't be sure. What you can say is not every building has this and some can have the opposite feeling when you go in.

**Ben Adam-Smith 05:09**

While we're talking about feelings there's definitely - and I've mentioned this before - a Passivhaus feeling. I made a film a few years ago with Mark Tiramani, saying what's it like to live in a Passivhaus. And pretty much his response was, well once you're in there, you don't know any different at all. It's like living in a house, you forget about the comfort. But it's that moment of going into the building, the very first few seconds. And I would say you get greeted by a warm hug. It's not over the top in a Passivhaus. Well, George's house is interesting, because you get that same thing but I also feel you get something else on top. And I'm attributing that to this quality, or to the straw bales, clay plaster, whatever it is, there's something just a little bit extra. That's my take on it anyway. So now George explains a bit of background about the project, which starts with a familiar situation.

**Juraj Mikurcik 06:02**

We used to live the other side of the woods in Aconbury in this old stone, uninsulated cottage, which had a lot of character, it was beautiful, but was just so inefficient. We spent so much on heating oil every year, and we thought this is ridiculous, we need to just move to something a lot more efficient. So when the opportunity came to look at this plot, we grabbed it and managed to build our own place that suits us. So it's affordable. It's kind of modest, but offers enough space. We're quite inspired by rural vernacular with farm buildings that are really simple, shed-like almost. But it feels a bit like a TARDIS, you know, quite small from the outside but because we've got these open cathedral ceilings, it just gives a really good sense of space.

**Nick Grant 06:56**

I think there's something about scale. With a small building it looks interesting anyway because just the texture of materials is enough. When buildings become very big that's not enough. So however characterful the render is or the brick, it still looks big and bland. So you then start articulating the building and adding bits on because you think it looks a bit plain, but with a modest building, that's less of an issue, I think.

**Mike Whitfield 07:16**

Yeah, I've noticed that bringing clients around here that they, they're all really impressed. And they always say, oh this is great, the size of it's really good. And then they can't stop themselves from wanting a bigger house. But they get the message but it's really hard for people to actually really come to terms with the fact you could live in a house this big, quite comfortably.

**Nick Grant 07:43**

But I think the modestness, that's the nice thing about this. We talk about form factor, we talk about materials, but the big thing with embodied energy is having not too big, not too complicated and not too expensive.

**Juraj Mikurcik 07:52**

Sufficiency.

**Nick Grant 07:53**

Sufficiency yeah. And there's a price in money. So there's an assumption that you've got to pay more for green, but that can't work. Maybe there's a bit more time, and you're paying for labour and quality local materials, but you've got to save money elsewhere, too. You can't let them, if it becomes twice the price, or 50% more than ordinary building, that's not green, either, because you will somehow earn that money. So yeah, keeping it simple, keeping not too big.

**Nick Grant 08:20**

And Bjørn Kierulf who we all know. When he was in the States, he was saying about people complaining about 10% extra for Passivhaus. He said, make your houses 10% smaller, you won't even notice, which is an interesting point. And not an issue of the UK because our buildings are generally too small and the first thing people do is stick a conservatory on the back. So having it big enough and especially with social housing, you know there's often not enough room for normal life. But this extreme of the mansions and the rabbit hutches.

**Ben Adam-Smith 08:48**

Scale is so tricky to get right. But it's such an important one, as well. Definitely, it's the balance. And I like Mike's comments as well about trying to get people to reevaluate how much space they need, even if sometimes it doesn't work out that way. And I can relate as being one of those people that our house, the floor area grew. Some of that I'm going to blame on the plot that we chose, because we spent quite a lot of money on ours, had quite a big site. And even though we halved the footprint of the house, at that stage, we were still 226 square metres, which makes a lovely house for us, which we love but there's no denying it, we could have lived in a house that was smaller. And perhaps with a different site with different constraints, we would have gone smaller.

**Ben Adam-Smith 09:36**

And then there's Nick's comment about the other extreme, the too small. You're on this balance. Social housing perhaps sometimes a bit too small. They're trying to just get as many people sorted as possible and maybe go to that stage where it's difficult to live your everyday life. Developer housing no doubt has the same problem at times.

**Ben Adam-Smith 09:55**

So a couple of tips for you as you look at sites. And I love these and I've probably mentioned it lots of times before. But firstly build a house where you use all the space every day. And I think that just gets you to really appreciate if I'm going to create this space, I need to use it, not just let it be the empty room forever. And the same sort of philosophy of having flexible space. I have an office, for example, that can double as a guest bedroom. And you never really use those two things at the same time. Or if I do need to do something, I've got a laptop, which I take somewhere else and it's nice for a change of scenery! But it's certainly worth thinking about. And it is one of those things, the scale as it increases you pay more. It's as simple as that. So make sure you're building something that you can afford. The next clip looks at how the house was built. And Mike highlights a common misconception.

**Mike Whitfield 10:55**

It's quite hard for people who are interested in Passivhaus, wanting to get into it or build one to sort out that thing in their head with natural materials or energy efficiency. Because you got that complication where you can construct an argument to say, the embodied energy in a Passivhaus isn't that important because you're going to save so much energy during the life of the house. So you end up with, you know, ICF blocks with another lump of insulation on the outside or something. But what's interesting about this system, the EcoCocon, it gives you a really instant prefabricated system that is genuinely low energy and is a sustainable system.

**Nick Grant 11:44**

As you know, we built our house out of actual straw bales from the field. So people get excited about that. I spend a lot of time talking people out of it, because it's very hard to get the performance. And you know, people think it's a cheap way to build.

**Juraj Mikurcik 11:55**

Yeah, this is quite different from your traditional bale building, because it is so consistent, and it's actually a Passivhaus certified component. So you get all the evidence and paperwork that goes with it.

**Nick Grant** 12:10

I've certainly seen straw bale houses that you can sort of see daylight through where the joists go through the wall and all sorts of stuff. So there's an assumption that if you've got thick walls... If the details are not done right, then it doesn't perform well at all.

**Juraj Mikurcik** 12:21

Yeah, yeah, exactly. So this is quite different. It's a highly engineered product in a way that just happens to use straw as an insulation.

**Nick Grant** 12:30

The airtightness, that's been the challenge for other people building with bales, hasn't it. So how did you get on with that?

**Juraj Mikurcik** 12:34

Yeah, so airtightness was achieved with a membrane. So on the outside of the panels, we basically wrapped the whole house in a membrane. So that gave it airtightness. Plus, we had additional wood fibre insulation to give us the U values and eliminate any remaining thermal bridges.

**Nick Grant** 12:52

A bit of a geeky thing, but airtightness on the outside is something we're normally nervous about. But that's sorted?

**Juraj Mikurcik** 12:57

It was sorted. The membrane had to be a special membrane with quite high vapour openness. It was all modeled in software to make sure we don't get the condensation issues.

**Nick Grant** 13:09

That means running the services and stuff, not a problem. You can just hack into the straw.

**Juraj Mikurcik** 13:12

You don't need to worry about services in the walls, yeah.

**Nick Grant** 13:14

No service voids. Because in our house we've got a service void.

**Juraj Mikurcik** 13:17

So it's really kind of solid. If you bang on the walls it feels almost like masonry.

**Nick Grant** 13:24

I love the fact that you can shape it around the window reveals and stuff. It gives that lovely softening, so it does have a feeling like a cob building or masonry.

**Juraj Mikurcik** 13:31

Like it's been hand-sculpted almost.

**Nick Grant** 13:34

Yeah, as you say it's precise and all the windows fit.

**Juraj Mikurcik** 13:39

So in a way, you know, for a self-builder, there's a huge risk that is just taken away from you from the project, because the project is done into a high level of detail first, and then the panels are made specifically for that project, and it's millimetre accurate. So that's the big advantage.

**Nick Grant** 13:59

The finish is nice. The clay plaster, that's part of the system isn't it?

**Juraj Mikurcik** 14:03

It is part of the system. So we tried to use as many natural and non processed materials as possible and clay goes really well together with straw. It's applied directly to the straw. So there were no paints used in the house. It's all kind of self-finished clay. So yeah, it was part of the appeal.

**Ben Adam-Smith** 14:25

You do get the feeling that George has gone out on a limb to try and do as much as possible with plant based materials, healthy materials, and I love that. And this build system, the EcoCocon is one that I would love to try on some project. If you're one of our Hub members, George did a live training a little while back and that goes into even more detail and exactly how it fits together. I think there were I-beams in the roof, which had recycled blown-in newspaper as well and just has some more, but the point I'm trying to make here is your choice of build system can make a huge difference on the embodied carbon of the house, the health of the house. So think carefully at this point. It also really doesn't matter because you face the building in something different, but what's underneath. And in this particular case, it creates that lovely internal, they mentioned it a couple of times, the feeling of the walls, it gets a finish that I think a lot of people want, but perhaps don't know how to get that.

**Ben Adam-Smith** 15:26

As with any Passivhaus, you need to insulate underneath. And that was done with the ISO Quick system, it's EPS, and it also acts as shuttering for the concrete pour. And ideally, I guess this is a part that you might dispense with, but there's no real good eco solution. And I remember in that live training that I mentioned, George saying that the base is really important. And they are using it in a clever way. For example, what we're going to talk about next, the structural slab is also the finished floor. So you're keeping things simple, you're using the materials efficiently. And with that under the building as well for the floor, you're not going to run into any issues. One of the things you do need to do is grind the top. And George spent 90 hours, yes, 90 hours, that's a few days, grinding it down. There's some determination. And it sounds like the concrete pour itself was eventful too. Here's Mike.

**Mike Whitfield** 16:29

We did have a funny thing with the slab where George changed, very late on, to a different mix for the concrete. And the manager from the concrete plant came down and said to us, because we were pumping it, he said: "I just want to have a proper look at the site because I'm a bit worried that the concrete is going to go off in the pump." Because it was basically neat cement and the local ballast that George had chosen. So it didn't have the modern plasticizers and retarders in and then it was a really hot day. And our groundworker arrived in the morning and limped out of his car and said, "I've hurt my knee, I'm not going to be able to help you." And so yeah, it was really hard to keep up with it. And George made a really sterling effort of, how long did you spend?

**Juraj Mikurcik** 17:29

90 hours of grinding. Yeah, that was a lot of fun in hot weather.

**Mike Whitfield** 17:34

To get it down to what you see here where you've cut right through, sort of halfway through, the stones which is a really striking effect.

**Nick Grant** 17:43

When Sheila heard about you grinding the floor, she asked if you'd plugged it in because we did ours in a weekend, less fancy gravel! The floor was an interesting one, isn't it because Mike did our floor originally and it was probably the first one we knew of that was the same sort of idea of the structural slab, polished finish. And it was a very cheap floor. And we love it and people love it. But if you want to guarantee a certain finish or a bespoke gravel or anything, that's when it gets tricky and can get expensive and things go wrong at the last minute, like suddenly finding the mix is different and so on.

**Mike Whitfield** 18:13

If you grind the slab after you poured it, you get a very cheap floor finish. You know, it costs a few hundred quid to do a final finish for the floor. But if you get a specialist concrete finishing company in you're back at it costing eight or 10,000 quid. And every one we do I always say to the people, we're not getting the same finish, you know there's going to be defects, there's going to be flaws, it's cheap and cheerful, it's not perfect. And actually a lot of people, it's hard for them to accept that. We did one in particular where I thought it was the best finish we've achieved but they didn't like it because of the way the concrete had come out in the mix. The ballast, the aggregate wasn't graded evenly. So you get a strip, there is one there behind the chair, but you can't see. You get a strip which hasn't got many stones in and then an area with stones in. And they didn't like that patchiness. But the finish was really good.

**Ben Adam-Smith** 19:26

It's a really interesting approach. If you're going to use concrete, make it really do some work and perform more than one role, not just the structure, but also that finished floor. And it does look fantastic. It's cost effective as well. So that's obviously one that Nick and Mike have done a few times before. But George, it's lovely to see the experimentation, that first application of the EcoCocon system in the UK, and also some other things.

**Juraj Mikurcik** 19:54

And then yeah, things like you know, the external timber cladding, again that was locally sourced cedar, a really kind of simple way of cladding the house. It was another experiment, trying with charring the cladding.

**Nick Grant 20:08**

So would you do that again if it was your budget?

**Juraj Mikurcik 20:13**

Well, cost-wise, it wasn't an expensive solution but it did take a long, long time. It's one of those things that you know the black barns in Herefordshire are quite traditional, but they're usually painted. So this was just another way of achieving that look. And I think it really helps to blend the house into the landscape.

**Nick Grant 20:38**

And it weather's nicely as well, doesn't it. It's not like paint fades.

**Juraj Mikurcik 20:42**

It gives it that kind of certain quality and character.

**Nick Grant 20:45**

And the tin roof is good and I like that you've just used it, cheap tin, simply, not gone for any fancy details or anything.

**Juraj Mikurcik 20:52**

Yeah, and things like leaving out the gutters, it was a bit of an experiment but it worked really well on this low single storey house.

**Nick Grant 21:01**

You were possibly going to add a gutter above the door but you haven't needed to, have you.

**Juraj Mikurcik 21:03**

No, no, no.

**Nick Grant 21:05**

Just run through the cascade of water!

**Ben Adam-Smith 21:09**

It's lovely to hear about the experimentation. And also that all important, did it work? Would you do it again? What are the pros and cons? I really like that. In a Passivhaus you only need a small amount of heat. The house has a hot water cylinder with an integrated air source heat pump, but there's no central heating as such. George explains.

**Juraj Mikurcik 21:32**

We have these towel rails which are running off the hot water cylinder. They're like the background heat. And if it gets really cold, we tend to put the wood-burner on.

**Nick Grant 21:43**

And the fire, it's worth mentioning the fire, isn't it, because that was something we disagreed about. It's tricky for me and Mike. We both live in houses with wood stoves but we're always telling people do as we say not as we do. We're like reformed smokers.

**Juraj Mikurcik 21:53**

I think you were right. I'm only finding out four years later.

**Nick Grant 21:58**

The idea, the image people have, we have clients who say, "I'd love to sit of an evening with the focal point to the fire." But when we've come around here for an evening, you've probably lit the fire in midwinter, it's got a bit warm and the fire has gone out. And by the time we get here, it's gone out, we're perfectly warm. We're sat around in t-shirts and there isn't that focal point, unless you have a fake fire. But yes, it's always comfy, isn't it.

**Juraj Mikurcik 22:18**

It's kind of what people expect to see in rural homes, but you don't really need it in a Passivhaus. That's the point.

**Mike Whitfield 22:25**

It took a few years for you to actually come round thinking I wish I'd spent the money on something else, because it is quite expensive. The one that George put in is done really well which is quite hard to do in a Passivhaus where, yeah, it's airtight and the air inlet is in the flu as well. So you know, it's quite an expensive item.

**Juraj Mikurcik 22:52**

Absolutely, especially if you're not using it that much!

**Nick Grant 22:55**

And the floor area it takes up. We talked about the size of buildings before. There's a big chunk of the room you can't actually use because you can't put furniture there, you can't sit there, you got to keep small kids away from it and so on.

**Mike Whitfield 23:04**

So one of the things that draws people to Passivhaus is the indoor air quality. I thought that was incredible, actually, because you'd hardly had the woodburner on and the amount of black soot in the MVHR filter. This shows you the amount of filth that comes out them. I mean in our non MVHR house, we've got a full height extension, you open the woodburner on a windy day, and smoke just billows out. We don't notice it because it disappears up into the roof.

**Nick Grant 23:37**

You make it sound like a medieval banqueting hall which is a fairly good description. But it used to be the thing we braced ourselves for with new clients is the woodburner and the MVHR, you know, we've got to explain that it, yeah. And now it's just become more of a non issue, apart from occasional cases like Mike said. Generally people are saying why would I want to cart wood, dirty things, and yes we definitely want MVHR...

**Juraj Mikurcik** 24:01

It's such a lot of effort. You have to source the wood, dry it off, bring it in and then clean afterwards. And you're sort of creating this, just a mess for not a lot in return.

**Mike Whitfield** 24:15

Yeah, I think those ethanol fires that look like fires are a really good idea if you're really obsessed with it.

**Nick Grant** 24:24

For a special evening or Christmas or something.

**Mike Whitfield** 24:26

Yeah.

**Juraj Mikurcik** 24:27

Once a year. Just have a barbie outside or an open fire outside.

**Ben Adam-Smith** 24:31

Great insights again. And respect to George for changing his mind. There are always going to be things on a project... I know reflecting back on my own, we put gas in because I thought when we come sell the house, people are going to say well there's gas in the village, why have you not connected to the gas main? And as years have gone on, that seems less and less of a good idea and I missed out on a great opportunity to go to the renewables straightaway, whereas it was my plan to move there further down the road. And there'd still be a connection for anyone that did want gas to the house. So I think that that's great, the ability to change your mind. But it serves as a really good example that you can have a log-burner in a Passivhaus. Yes, it's all something that you can do. It's costly, though. And it's really not a great fit for all those reasons.

**Ben Adam-Smith** 25:27

Mike mentioned about the bioethanol burner. So if you find yourself in this conversation that, you're in a couple and one of you wants the fire, just thinks that that's an essential for the house, go for the bioethanol burner, because you don't need to do anything to the house. It's a bit like lighting a candle. And it's something that you can remove, just take it out of the wall and sell it on eBay. We've got one in our house and it was a similar situation, my wife was, "Oh, we need this fire." It cost about, I think, maybe 500 pounds back then and we haven't lit it. We've been in the house over three years now. I'm not going to be the one who lights this. So that's your backup plan if you find yourself in that situation.

**Ben Adam-Smith** 26:09

Finally, let's talk about summer comfort. George's house is a masterclass in how it's done. You can design a Passivhaus that doesn't overheat - in the Passivhaus world that's saying over 25 Celsius - or you can design a Passivhaus that's comfortable in summer. So how do you do that? Well, effectively, it's just shading. You've got to shade. But you've got this strange thing going on that you want that light in the winter and that heat, those solar gains. But in the summer, you really don't want it so much but you still want to be able to see out of your windows. So sensible glazing ratios, your roof overhang, as well, you want that to be significant. And that's one of the things that I enjoyed filming this, was just watching it in the summer, filming it, and thinking that is clever, isn't it. The design is such that it completely misses the window, it just hits the bottom of the window. That's exactly what you want. And then what I also didn't know is that George has got, I think, either one or two external blinds that you can pull down from the outside and that cuts out a certain amount of solar gains as well. But effectively, if you want summer comfort, you need to be able to control those summer gains. You don't really want to build in lots of technical solutions. That's not the way to go. That's why I love this, that it's all set up for that really hot day when it's totally still and you just want to shield your windows, really.

**Ben Adam-Smith 27:34**

So you might want to have a look at the house designs once again, just to understand what we're talking about here and the form of the building, that shape. [Houseplanninghelp.com/310](http://Houseplanninghelp.com/310). You could hit pause for a moment. And then when you're ready, here's Nick.

**Nick Grant 27:49**

There's always a discussion in Passivhaus circles about form factor. And of course being single storey is a challenge. And then you've dipped it in. But actually here that really works. It's not just because, "Oh, it looks boring in plan, we need to articulate it." That creates that lovely area, does the overhang. And if you'd squared it out and had more floor area... but we wouldn't need it here. We're sat here with plenty of space, you'd have had to then stick the decking out. So I often use that as an example of where 'simple as possible but not too simple.' And that's how that's really earned its keep. Sometimes people think, yeah, Passivhaus it's got to be just a box, but you go from a box it's more expensive, but it's a question of so then you've got to say is it giving me some value for money and here I think it really does, isn't it.

**Juraj Mikurcik 28:30**

That veranda really worked like a treat. And it's quite commonplace in Europe as a way of just protecting the house in winter and summer. So I think it should be used more on British houses.

**Nick Grant 28:45**

It's interesting when we're designing places, if you're designing in winter you think about warmth. If you're designing in summer you think about overheating but it's really hard to hold all the seasons in your head when you're designing a place. You know, in your garden you're thinking about sun traps, but then you suddenly get a blistering hot summer and you want shade and so on. I think we tend to forget, trying to think of all those different weathers, conditions.

**Juraj Mikurcik 29:08**

When it gets super hot we can just put a sail up, additional sail. So that sort of creates nice shade for the decking. So far the house has been comfortable pretty much all year round. You know, over the last four years. We had some extremes, you know, the 'Beast from the East' and some heatwaves during summers, but it's held really well. It's just consistent and temperatures are even across the house. So I couldn't be happier really.

**Nick Grant 29:38**

It's really nice to hear you talk about it being comfortable rather than you often hear discussion in terms of acceptable levels of summer overheating, which is kind of weird. We don't talk about acceptable levels of cold and miserable in winter. That's the thing with Passivhaus. We assume it's going to be super lovely in winter. And there's a bit of a thing for trying to get people to accept that making it really comfortable and not just not overheating in summer is an important design decision. That's often in conflict with too much glass. So Passivhaus gives us the tools, and as you've done here, to make a fantastically comfortable building in summer, but there's often this perceived conflict, you know, just overcooking the glazing and things like that. And people think, oh, we can throw the windows open. But as you know, when we've got the heatwave, it's hotter outside than inside and you've got tropical nights, and so on.

**Ben Adam-Smith 30:24**

And that's where we leave things for today. Please check out the video we made. We've embedded it into the show notes as well. So you can find it nice and easily - [houseplanninghelp.com/310](https://houseplanninghelp.com/310). We've got links to George, to Mike, to Nick. Also those previous podcasts, images of Old Holloway, the blog that George did, it's all there - [houseplanninghelp.com/310](https://houseplanninghelp.com/310).

**Ben Adam-Smith 30:52**

Let's finish up on a Hub update. And this is our membership community that I run alongside House Planning Help, perfect for you if you're looking to build a high performance home and want to make sure that it's got really good materials in it, low embodied carbon. Well, we've got all sorts of resources in The Hub, a digital archive, videos, courses, and we've added a new course actually on how to find the right builder. This includes things like... What does a builder actually do? What are their skills that they're going to need if they're a good builder? How do you source a builder? How do you vet one and make your shortlist? And how do you make yourself an attractive client? No, we're not going to pay these bills! Builders love that, don't they?

**Ben Adam-Smith 31:18**

We've also got another chapter of the Kinver story. This is our in-depth video case study at the moment. It's a retrofit project masterminded by Eco Design Consultants, and this one is a retrofit of a Victorian property to Passivhaus standard. So when tackling a retrofit, there are always going to be a few unexpected issues. And in the latest video, we discover that the bay is condemned. That's right, it's going to have to be completely rebuilt, some extra costs in there. We also see progress in the loft, in the basement, and the XPS insulation is going down at the rear where the extension will soon rise up. Take the learning further in The Hub - [houseplanninghelp.com/join](https://houseplanninghelp.com/join).

**Ben Adam-Smith 31:18**

That's it for today. Thank you so much for listening. The House Planning Help podcast is produced by Regen Media - content that matters.