

Episode 3

The Passivhaus Standard #3 A Passivhaus Builder's Story

The show notes: www.houseplanninghelp.com/3

Ben: So today we are having a chat with Pat Wilkinson from Touchwood Homes. Hello.

Pat: Hello.

Ben: And my first question is all about how you got going. What has led you to where you are today?

Pat: I have been in construction ever since I started work virtually. Building boats initially when I was 16, I think. And then I went to work with my father and my uncle in construction. They were partners who had taken over from my grandfather who had started a company in 1920 ish. After a while my father, my uncle and father both retired. So my brothers and myself took over as Wilkinson brothers. We carried on doing extensions and all sorts of things; various maintenance. And then they went their own way, because they were doing more plant hire and things like that, which I wasn't interested in particularly. I carried on in the building line and it seemed an obvious way forward. Because of our interest in the climate and the planet, nature and ecology, it seemed obvious that we had to produce houses which were more energy efficient, because that was obviously the cause of all our climatic problems.

Ben: How have you developed to the current levels of passive house? What has got you there? Why did you start thinking along those lines? You mentioned ecology and environment. But why doesn't everyone think along those lines?

Pat: Well, I don't know. It defies comprehension in my view. I mean in 1994, I had an architect who I did lot's of work for. He approached me with a client who wanted to build a pretty energy efficient house. He wanted a traditional brick and block with lots of insulations in the wall and I found the way of making it too expensive for him so that I could use my techniques, if I you like, using the new to us I-beams imported from Sweden, which were only just coming into the country. So we could build a thicker wall without using lots of timber. This is where it started. I got the client to accept this build method. And... so we built the house to very unheard of energy efficiency levels. There was no heating in the house except for small bit of electric under floor heating in his bathroom, where he seemed to think he wanted it slightly warmer, but the rest of the house had no heating. Except for some small amount of heating in the ventilation system, which was again an unheard of technology then.

Ben: So you were a pioneer, one of the early guys. What year are we talking about?

Pat: It was 1996 when the house was finished. And since then the house has been performing exceedingly well. I have seen the clients, the occupiers now and they are very happy with it. Their children have done projects in school on this house; they have used hardly any energy in the last 15 years. It is just an amazing thing why everybody doesn't build this way and why they didn't then. I am only an ordinary builder and I can see the sense and necessity of building this way.

In fact, Mark Prisk, our local MP, he is now chair of the green building...green construction board. He's just started that up. I emailed him this last week. I was talking to his cohort who was also working on the project and they don't seem to understand that we can build in this energy efficient way now. It's just that the lobbyists, Barratt Homes, Persimmons and the other large companies just want to build as they always have done and still make a vast profit.

Ben: Ahh, is that what it is, that they will have to pay more money for this construction?

Pat: Yes and they make less profit. And they don't understand it either. I mean, that's the problem. They have got no interest in the technology, if you like. They have always built brick and block with a minute amount of insulation and that's all they are interested in. They don't want to change because change costs them money. They have got to teach their contractors to build in this new way and they are not prepared to do it. I don't think they are, anyway. They have to put a solar panel on a roof somewhere, which probably doesn't work because nobody set it up right. And they don't understand it but it gives a visual impression of a green house. They have got no interest in it at all.

Ben: What about the key components then, if we are building one of these houses? I know we can go into great detail but just an overview at this stage.

Pat: Insulation and air tightness are the most important features of any energy efficient house. If you can make it airtight so you are not losing heat through draughts and gaps around windows and things like that. That is so important. But then as a result of that you have got to have a ventilation system, which is not too onerous. It's just built into the house as you build it. So you've got a good fresh air supply keeping the air fresh and clean and dry, so you don't get condensation and pollen build-ups and allergy problems.

Ben: So we've got a ventilation system and also we got the insulation...

Pat: Yes, you've got insulation and you've got the air tightness. With the amount of insulation that we put in and have been for 15 years; we've got a foot thick in the walls, 300mm of insulation in the walls and 400mm in the roof, and that completely holds in nearly all the heat you have in the house. It just can't escape and it works conversely in the summer, of course, it keeps you cool in the summer and

stops it overheating. I mean, you get a lot of sun shining through the windows and it won't overheat because you've designed your house correctly, so you don't have too much solar gain through the windows with shading over the outside and proper design. It's all part of the design package which you have to work out. With Passivhaus (or passive house) you've got a whole spreadsheet, a whole lot of parameters to build within to make sure the house does perform correctly and doesn't overheat as much as the problem with under heating, being cold.

Ben: I have always been a fan of some of the traditional eras and historical designs. Does that pose any problem if I wanted to create something that was in a Georgian style?

Pat: You can build an energy efficient house to look like whatever you want it to look like. It could look like an old barn. It could look like a stone cottage. It could look like thatched Tudor hovel, if you want. It doesn't make any difference. You can build an energy efficient house to any design.

Ben: It comes back to this point again. I don't understand why more isn't happening. What about existing houses that are out there? Is it very costly to convert them?

Pat: That is the bigger problem because you've got 20 to 30 million houses out there which are all energy inefficient and to improve them or to make them as good as a Passivhaus is very, very difficult. There are levels of performance you could get to without spending too much money but to make it a hundred percent, well to get a Passivhaus would cost about £40,000 - £50,000 I would have thought on an ordinary terraced Victorian house which is what I worked out for my son who lives in a Victorian terraced house; and I said to get that to an energy efficient state would cost you about £45,000 which is a lot of money for somebody to invest in their property. If they're going to be likely to move on in 10 years time, they haven't got their money back.

Ben: When you come to sell these properties, do they gain any value because they have been built in such a way that it will save you money?

Pat: Well, this is the point of conjecture. I think we are on the cusp of where it is going to have an effect because energy is becoming so expensive. I was talking to an estate agent a few weeks ago and he said it doesn't make any difference, there's no uplift in the price at all for an energy efficient house. But I have a feeling that it's going to start having an effect fairly soon. Because it's got to because it saves you money; and it's obvious if you're going to save you money in the future, you're going to pay a little bit more for it perhaps and people want to buy those sorts of houses. It just makes sense.

Ben: How is business for you? Are you finding increasing demand or is it quite static?

Pat: It's burgeoning actually at the present minute, we're getting people ringing up all the time. Everybody is becoming interested. It's just that there's a shortage of money out there and people with sufficient money to buy any house. The whole housing situation is so static and nothing happening because everybody is frightened of the financial situation we are in. But yes our business is burgeoning.

Ben: Let's change the subject slightly and move to British buildings on the whole. One of the key reasons that I got involved is because I look around some of our historic towns and I moved to historic town for a reason because I liked it; and a lot of the new builds don't seem to complement it or have no integration and I'm slightly suspicious how they've been built, whether they've been built well, would I be right in thinking of this?

Pat: Well, I'm a modernist, if you like, as far as architecture goes. I mean, you look at old towns and people love the old towns but then to put in a pastiche Tudor house that we built today in the middle of a Tudor street would look stupid in my view.

We should have modern architecture in that street or whatever we are building because we live in the 21st century. We don't want pastiche of Georgian and Victorian, Tudor houses. Why would we? We live in the 21st century. Modern architecture is good and we made that mistake, I think, in previous eras where we've built houses and tried to make them fit. When the arts and crafts movement was brought in, you will see these arts and crafts houses, they are built with interest in the craftsmanship but it's still copies very often of Tudor and it looks wrong and out of place because they are not Tudor. They were built in the 20s so we should be proud of our modern architecture I think and build modern contemporary houses.

Ben: For me though, I don't get the same feeling. I mean this is probably a wider debate. I was away in Oxfordshire and went in to some of those lovely Cotswold villages and I just got a good feeling inside. This maybe the difference between me and... I can't embrace the... I don't mind the modern architecture but it has to have a good feeling about it and a lot of it doesn't, maybe that's more my point.

Pat: A lot of it is proportion, I think. They do fit certain proportional geometric ideas in your head, I think, because I look at Cotswold villages and I think that's beautiful. I wouldn't want to live in one though because they are cold, they are miserable, they are cramped, they have rooms that are so small and who want to live in those? I wouldn't.

Ben: I would.

Pat: Would you?

Ben: Yeah, I would.

Pat: Well.

Ben: It's the difference between two people, of course, I understand that.

Pat: Yes. I lived in an old house. I lived in a farmhouse when we first got married and it was nice. After a caravan it was vast! But after a while you'd realise that the beams are a bit low and the rooms are a bit small, and I was glad to move out of it in the end and we moved to a larger place. I mean, there's a thatched house next door and its rooms are so small. It's cramped. It's not modern. It's not fit for modern life really. I mean, it's built out of second hand timber for a different need when people had difficulty finding any house or building a house at all because they've got no materials and no money. So they are built for different needs. Today we have sufficient affluence to be able to build a house the way we want it.

Ben: Maybe at this point, I should tell you that I'm hoping to build my own house and I don't know how much I should do myself, this is very early days but I would like to come up with a better home. I was mentioning about just across Britain and the new houses that come up and I often feel that they are not built to standard but I don't know why I feel that. Is that the case of some of the...?

Pat: No, they are not built to standard. The houses built today... I was looking at some last week, brand new houses they are building with about 50mm of insulation in the walls. How that makes building regulations, I do not know. But for living in, they're going to have to heat that house forever. Every winter they are going to have put the heating on in October and turn it off in March, using loads of energy when it's unnecessary.

Ben: Then how do you tell? Because I'm someone who is hoping to educate myself into a better position but as a punter I don't know what I'm looking at. I just get a gut feeling sometimes that this area is just cheap.

Pat: You can't tell. I quite agree, you can't tell from looking at a house. You've got to investigate what the walls are made of. You've got to somehow test how airtight it is and you can't do that by looking at it. I can't do that by looking at it.

Ben: Well, then you just end up looking at is the hob in the kitchen shiny or?

Pat: Well, that's correct. That's all you're looking at; it's the silly aesthetic details which have nothing to do with energy efficiency of the house. This is the problem. Our standards have got to be improved so you cannot build down to those levels. The building regulations are so slow to keep up and everybody, all the standard builders, don't like change. They want to make their profits. This is the problem, they're lobbyists and they don't want to change.

Ben: But presumably you could do all this, still make a profit, and produce something better, and more lasting...

Pat: It will cost more. An energy efficient house does cost a bit more but only 5-10% top whack, I would say. I worked it out that the one we built was about 4.5% more expensive than a standard house would have been. So I think it is worth paying that price extra, personally, and cut their profits by 4%. They are not going to notice that.

Ben: As I mentioned, I would like to build my own house but I am very much a beginner and learning as I go along, what would be the first steps that you would say to me, "You need to do this, Ben. You need to blah, blah, blah."

Pat: That's a difficult one.

Ben: Or maybe if I was a client of yours?

Pat: If you're a client of ours, normally they are pretty genned up when they come to us actually, but you've got to keep reading books. There are lots of books out there about building houses, energy efficiently, generally coming from abroad, German books or Scandinavian books. I've got a couple here, there's one there in fact and you've just got to keep reading and there aren't that many items that you need to learn, just about insulation really; and it's very difficult to

answer that question because I've spent the last 40 years learning about these things and it's difficult to know what you don't know.

Ben: But what proportion should I know myself, I would like to build it myself, but I...

Pat: The more you know the better, because if you've got builders working for you they won't understand. There are very few builders in this country that'll understand what you are talking about. So you have to know it to enforce these, the rules if you like, of building energy efficient houses.

Ben: How many tradesmen are qualified and doing a good job on this type of...?

Pat: None, there is no such thing except we are the only ones as I see that are really getting the grips with it, with the whole situation of energy efficiency.

Ben: So what are you basing that on?

Pat: Just by looking around. My son goes to the local squash club. There's a plumber there, he fits solar panels on roofs and he says they don't work and they don't know how to set them up so they are never set up properly the work. So what's the point? I mean, a plumber is spending his time putting solar panels on, taking the effort to do it and he can't be bothered to make sure that they work properly. I mean this is what attitude that we've got in this country. But then we are getting back to education which is one of my points of irritation. You go to Germany, you aspire to be in the construction industry. In this country, there is no such aspiration. You end up in the building industry because you can't do anything else. Because you've done no good at school and you just, "Oh, what shall I do? I'll be bricklayer or something. I'll go to college for a couple of days, learn a bit about bricklaying and I'll be a bricklayer for the rest of my life," and that's what happens in Britain. Instead of having

engineering backgrounds and technical backgrounds, they're coming from the wrong end of educational spectrum.

Ben: Do you do any training yourself?

Pat: Well, no, we don't. We can't afford to, there are only four of us in the company and we haven't got the sufficient funds to be able to do that but I'd love to if I could. We should have people on site learning how to put these houses together. So we take off the stress Adam actually who is doing the main erections on site and it'll be nice for other people to be learning that, they should be, but we need some funding to do that. If we could fund people to be on site, it would be fine.

Ben: And finally, I just wonder is there anyone else I should speak to in, it can either be in planning, in landscaping, in whatever else other area I should be considering when trying to build my own home?

Pat: Talking to planning is quite an interesting issue because planners are the weirdest people on earth. I'm sorry! All our clients come to us. At Eco Build this last year when we were there, the clients come to us and said, we've had this long battle with planning for the last 3 years. We want to build an energy efficient house and they won't let us do such and such, or this and that; and everybody says the same about planners. They've got no consistency, no interest in energy efficiency. I don't know what their interests are to be honest, they seem to have a secret agenda all of their own and nobody seems to agree with it and we don't understand the way their mindset works.

Ben: Well, I'll put that on the list of all sorts of different areas trying to build a better house is my focus of the next few years... 4 years is that a realistic target?

Pat: Yes, four years is fine if you got 4 years you are doing quite well. Most people come and say, "I want to be in by Christmas," which is the favourite phrase and then we say

which one? Four years time. Planning can take 2-3 years. Sometimes people come to us, “I’ve been planning for 3 years and I’ve gradually whittled down my plans to see what the planners will allow me to do,” and often it’s a compromise which is a pity because people have good ideas quite often, especially if they’re from outside the construction industry, they are the best ones.

Ben: Pat, thank you very much for chatting to me today.

Pat: No, not at all. I’m glad to spread a bit of ecological interest.