

# HPH346 – Interview with Andy Marlow

**Ben Adam-Smith 00:00**

This is House Planning Help episode 346. Hello, I'm Ben Adam-Smith and this is the podcast for you if you're interested in building a new home or retrofitting an existing property. I'm exploring what houses we should be building in the 21st century, and try to break down the major roadblocks that may get in our way. Coming up in this session, my guest is Andy Marlow from Envirotecture, and we're going to be chatting about the uptake of Passivhaus in Australia. And also, there's a big difference compared to the UK that it's more about cooling than heating, for obvious reasons. We'll talk generally though, about the architectural process and get tips as we always like to do, he's a lovely guy as well. I must thank architect Ruth Butler for helping set up this one because I noticed on social media, hold on, she's out in Sydney, and I knew I was heading that way, too. So I asked a recommendation, and she said, Oh, you've got to speak to Andy, he is your man! And what's funny is that, Ruth obviously just got whatever work she could when she arrived out there. But by the time I'd got there, she was of course working for Envirotecture, and I think she'll be perfectly at home there. I do love Australia from the variety that they've got, I suppose that comes with having such a big country, so many different climates, such delicious fruit and veg, I don't know whether that's just arriving in the summer or whether it's always like that, but that really hit me as the very first thing that I noticed. But my brother has lived out there for 30 years plus now, and I've got a strong reason to keep going back, of course I have. But I also have started to feel the responsibility of travelling to the other side of the world. So I think that that's going to be my last trip. And I'm wants to talk more about that after today's interview. So the last time I was in Sydney was a decade ago, I recorded a couple of interviews will link those Of course one with Claire Perry and one with Michael Mob's. However, I don't think I realised that there were no certified Passivhaus projects in Sydney at that time. In fact, Envirotecture delivered that first project in Sydney. And that's where we start our conversation. I asked Andy, what the uptake of Passivhaus was like today?

**Andy Marlow 02:21**

It has grown exponentially, which is a nice way to say there was stuff all and now there's a few. The first one in Sydney was in 2018 and that was one that we did. And since then there's been quite a few more and it's growing at a very rapid rate.

**Ben Adam-Smith 02:36**

And why?

**Andy Marlow 02:38**

Predominantly because people have realised that it's way to deliver on health, comfort and efficiency. And it's the health and comfort parts in our view that are the ones that are driving it.

**Ben Adam-Smith 02:48**

So when we say that, how would you describe most Australian buildings and how they're put together?

02:55

Tents, often wooden, sometimes made from masonry. But basically it's like living outdoors except less good. The people seeking Passivhaus have been mostly people who've lived overseas. They're not necessarily from overseas, they might be Australians who've lived in other countries, but they've experienced what good housing can be like, and they've come home and gone. I want one of those, I can't believe I lived in this stuff before.

**Ben Adam-Smith** 03:19

What about the classic line, I live in indoor/outdoor lifestyle, and I can't remember who I spoke to. But once upon a time, there was an argument that was put to me that actually taking out all the insulation in certain climates would be more sustainable.

03:36

There are a couple of places where that would make sense an island somewhere in the Whitsundays, Far North Queensland possibly, but in everywhere else, no. The indoor/outdoor a lifestyle is certainly seen as a thing and sold as a thing, and the real estate agents love it and people love it when it occurs. The issue is that when you look at climate data and people's lives and how they actually live, it's an incredibly small portion of the year and as soon as you take a building physics approach to things and say, Well, how will I stay warm? How will I stay cool?. More importantly. Then all of a sudden, you follow some rabbit holes and end up concluding that you need to build something that looks remarkably like the certified Passivhaus.

**Ben Adam-Smith** 04:15

So when you say that cooling is equivalent to what we would have for heating, how is it analysed?

**Andy Marlow** 04:22

So we do a lot of certified Passivhaus buildings, and we do all our analysis through the Passive House Planning Package (PHPP). And it's the same principles. It's all just in reverse, really. The tricky part is that it's easy, it's easier to keep a building warm, because you've obviously got an amount of internal loads and you can just put more insulation, wrap it up more and more insulation and hold on to the heat that you've got. Coolth is different because you're not well, you're not generating it naturally, and therefore wrapping your building up doesn't always help very much. And therefore keeping buildings cool is actually a much bigger design challenge than giving them warmth.

**Ben Adam-Smith** 05:00

So how do you keep them cool? Is there a logical approach? I know some of it is still important in climates where actually we have the extremes. We have it very cold in the winter and very hot in the summer.

**Andy Marlow** 05:12

The underpinning principles are fairly straightforward, and they are rooted in passive solar design. So really, it's around shading and window sizes, placement, etc, etc. Australian vernacular architecture to the extent that we have a vernacular, is often around big eaves shading windows, that is a very good

place to start. The biggest practical issue that we face as architects and designers in Australia is the expectation around the size of glass size of window size of doors. And a lot of it comes back to that indoor outdoor lifestyle and people's desires, expectations and beliefs around that. Basically, you hit a point where it doesn't matter how good the glass is, doesn't matter how good your eaves are, then you start needing to use external blinds like things that are directly adjacent to the window to keep the sun off them and you also just hit a point where regardless, there's just too much glass, and you just need to control the amount of glass in the buildings.

**Ben Adam-Smith** 06:05

Is that an easy sell, given that your main clients understand what they're trying to build?

**Andy Marlow** 06:12

Our clients are fairly unique. So our company is called Envirotecture, which obviously is a blend of two words, and anyone who looks at us on the internet will have a good sense of what we do. So we attract a certain type of client to begin with. So we're sort of, that makes things easier, it still can be a bit of a battle, people's desire to look at views through very large sheets of glass seems to be in baked in human nature. And yeah, it's not always as easy as we'd like it to be. But you know, we use the tools, we have to make the arguments and use the numbers and try to use that reality and the lived experience of others.

**Ben Adam-Smith** 06:50

And what about some of the examples, then is that useful for selling the concepts as well, maybe we can include a couple of images in the show notes. So yeah, can you outline a project that you've done that you think would be good to mention?

**Andy Marlow** 07:06

The very first one that we finished in, certified Passivhaus, we finished in Sydney, actually, which is a place called Thornleigh, so it's middle suburban Sydney, it's got a massive five metre wide north facing window in it. Interestingly, it's got no eaves on it, which was a deliberate choice and wasn't a mistake, but it's gotten one of the external blinds on it. And we did it for a whole host of reasons. And it was to get as much solar gain. And as we could in winter, due to the nature of the block of the land and that sort of stuff. So the blinds give us real control. They come at a price, obviously. But everything in building comes at a price. And how the thing which in this case, we had no qualms about at all, is it also they require the occupants to use them. So there's no point having a blind if someone doesn't press the button for it to come down. So these clients are incredibly sort of active in the management of the house. So it works like a charm.

**Ben Adam-Smith** 07:53

Yeah, I'm very active in my own Passivhaus and trying to keep it as cool as I can. But a lot of it is baked into the design, which I'm a big fan of. So your experience of blinds, are they reliable? Do they do the job, as you say, are the intuitive to the user?

**Andy Marlow 08:13**

Yes, the blinds definitely do their job. The "are they intuitive to the user" part depends on the user, every one of the certified Passivhaus that we've done, that's done in a country, I'm pretty sure, they all have mechanical cooling. It's very, very common here. 86% of new houses in Australia have mechanical cooling. It's just what happens. It's also used for heating, so in the whole heat-pumpification electrification debate, Australia, to some degree, while we're way behind in other parts, is quite ahead in that because it's just the cheapest way to heat and cool a house. So therefore, that part of carbon management is well under control. As to how people use the blinds, most of our clients get told, and we have enough discussions on the way through they understand how to operate the building. When they get there. We give them a manual that explains how to do these things and why it should work and how it should work. At mass scale, I guess the concern is always going to be that a new occupant of a house may not be aware that these things exist in work, and I think handover manuals and that sort of stuff is the best you can hope for.

**Ben Adam-Smith 09:16**

Yeah, I've seen one situation where a brise soleil was ripped out because they thought it was ugly, and there was a lot of glass under there. Let's outline this cooling process because I really haven't seen it that much. In the UK. We have a couple of reverse cycle heat pumps, but I'm not sure how effective it is. So can you just give us a good rundown where do we start with cooling and what does it mean in terms of infrastructure?

**Andy Marlow 09:43**

Okay, so in terms of where to start, it's with the passive solar design. So keep the heat out of the building as much as you can. So eaves, things that don't require human intervention., so eaves are good for that as the first port of call. Then you go to the blinds, so press a button, they come down, that sort of thing and then you're into the what systems do I use? The other part is obviously to have the ability to open windows and have cross ventilation as well. So that's like natural cooling, which is what we've always used the passive solar design, that works pretty well, most of the time, you need to be able to open the windows enough, you can have security concerns and privacy concerns. And obviously falling out of window concerns. If you're four storeys up, and you've got a small child. All of those things will help to get you to a place where you need no or less mechanical cooling, at which point, then you get into air conditioning, we tend to use what we refer to as split systems. So like, tend to be a wall mounted unit that sits on a there's an indoor unit that sits on the wall, there's an outdoor compressor, the heat pump part, which is obviously making coolth and kicking the heat out into the outside world. They're really effective, they're much easier to control than a full ducted system. ducted systems are quite common in a poorly performing homes. And it's because you can have an outlet into every single space, what we find in passive homes is that because of the overall performance of the building shell, the fluctuations in temperature are much slower. And therefore if you can dump coolth into a couple of strategic places in a home, generally one unit upstairs one unit downstairs, if it's a two story house, that it will do a good enough job of keeping the rest of the building cool enough. And therefore you can manage it that way. And you've got this much better level of control. As soon as you go into a full ducted system there's a cost from an installation point of view, but there's also a sort of a bluntness to the tool. And in the Australian context, at least, the installation quality of ducted air conditioning systems is fairly woeful. So they tend to operate very inefficiently, not because the gear is

inefficient, but because the installation is inefficient and has to do with the ducts and how the ducts are installed, because they're big and there's never enough space in the building to run them properly. So they tried to turn like 135 degree corners, which ducts don't like to do. Hence, split systems are reliable.

**Ben Adam-Smith 11:59**

And, what are you setting in temperature? Is it the same as a Passivhaus would be in other countries or slightly higher because of the outdoor temperature? In

**Andy Marlow 12:09**

In the modelling sense, we're still using the 20 to 25 degree range, because it's Passivhaus and that's the certification barriers, or hurdles, whatever you want to call them. We'll often stress test to see the difference it makes if we nudge that number up to say 26 degrees and see how much difference that makes on cooling, which mostly then is coming down to money and energy use. In reality, when we talk to clients and look at the data, because we often data log off the houses afterwards, some are warmer, and some are cooler. And therefore as with all houses, in particular, it comes down to the humans inside. And they're going to run it at the temperature that they want, almost regardless of all the other things. So part of the design process is to try to work out where they sit, to try to get the building to get them as close to that benchmark as we can without the need for that cooling device.

**Ben Adam-Smith 12:54**

And what is it outside the building? How is the temperature fluctuating? What are your extremes?

**Andy Marlow 13:00**

We are a broad, massive country, as you will know, it's huge. It is not uncommon to go over 40 degrees in most parts of the country, and some of them a lot more than others. So we're currently sitting within a couple of days of the coast and therefore it'll go down to maybe five degrees as a cold overnight temperature pretty occasionally, not much, but we'll still hit over 40 here. And then we got to places up in the mountains were quite easily get to minus five minus 10.

**Ben Adam-Smith 13:28**

What about the investment side, then? Do they look at the numbers and go no way we can afford this or you know, how are you making it affordable, you're achieving Passivhaus you're getting this great indoor environment?

**Andy Marlow 13:42**

It's the hardest part of everything we do without a shadow of a doubt, we joke that 5% of our job is design and the 95% is making stuff happen. It's mostly successfully sold when people comprehend the benefits. And the benefits have nothing to do with the money. It's mostly around the health and the comfort. And that's partly because of the quality of everything else that exists in terms of, if I don't do this, what will I end up with? And the answer to that is normally too hot, too cold, too mouldy, and therefore if you don't want that, you end up in this long discussion, which again, you follow building physics and logic and suddenly go oh, look, I need to build something that looks remarkably like a Passivhaus. So that's sort of how that circular conversation goes. The money parts incredibly difficult. Australia has the, so in terms of new houses, we build the largest houses in the world that an average

of 244 square metres, which is about three times the UK average, I believe. We also build per square metre, the cheapest houses in the world and that's the project times because they've refined how to build very big things very very cheaply. And therefore when you want to build something that performs you're delta between what could I build if I could get one of those big cheap project homes versus something that's high quality, the Delta can be quite large. And therefore, what we found and what everyone in the Passivhaus world in Australia has found is that they're not really the people that we're currently competing against. much as we'd like to. This is about if I'm going to do a custom built custom design, whether you build it yourself a builder, but not an off the shelf product, if you're going to do that, then the conversation about money and cost becomes much more interesting because the difference as soon as you pay a custom builder, which is what most of our work is, when you pay them to build something, the cost to get them to build it a little bit better. Isn't that great? And off the cuff, we'll say the differences the cost of a ventilation system, because we'll save on mechanical because you weren't put in ducted. But you'll pay for ventilation system a regular house doesn't have and you'll pay for a bit more attention to detail to get your building airtight. In Sydney and north of Sydney, the insulation values and in the Passivhaus are not wildly different to a code compliant house, because the climate is beneficial, colder places, that's not quite the case.

**Ben Adam-Smith 16:03**

So is cost the main challenge that you'd face if you wanted to commission a home in Australia? Or what other the key challenges? Can you expect, for example, in the UK, land is just such a big one as well.

**Andy Marlow 16:18**

I'd say that it's it's basically the same here in that the issue with land is mostly the cost of buying it or obtaining it, and therefore that the two things tend to go hand in hand. Cost is definitely the biggest one. Most of the technical issues have been resolved. For better or worse, because we're so far behind the rest of the world. Almost everything else has already been done somewhere. And therefore nearly every problem that we've come across we've found a solution for that mostly isn't entirely unique. It's all it's a bit of a borrow from A, borrow from B and here's C. So yeah, the cost is definitely the big one, when you drill into why, that's when it gets really interesting. So one of our two big challenges inside of it. The things so Australia, makes very little we dig a lot of things up and send them to other parts of the world where they make stuff, so nearly everything that goes into building is imported. I think on average, 80 something percent of the house is imported.

**Ben Adam-Smith 17:14**

Is it really? That is a surprise to me. I always think of Australia as producing everything themselves.

**Andy Marlow 17:20**

Glass is imported. Huge amount of insulation products are imported. All of the membranes that we use are imported. No one makes mechanical ventilation systems here at all, the ducting for that is also imported. A lot of timber isn't, we have we have a timber industry but we also import a lot of timber as well. And anything new is really, well basically expensive, wood fiberboard: great product, love it, seems to be what everyone uses in the UK because you just go to B&Q or whatever it is...



**Ben Adam-Smith 17:47**

Probably not, I don't know specifically, you do need some some specialist for some of this stuff. Is that the same? You know, we mentioned a lot on the podcast about using timber I-joists and cellulose blown in and wood fiberboard adding extra insulation, or does it not work quite so well?

**Andy Marlow 18:06**

In most of our climates, the depth of those timbers is more than you need. So it hasn't become a thing because um Victorian office does a lot of work in colder places where that sort of stuff really would be quite handy. But sort of 140 mil timber studs with insulation in between studs is good enough in a large chunk of the country. And therefore getting fatter doesn't really bring a huge amount of benefit. The wood fibre boards incredibly good because of the continuous insulation on the outside of a frame, kills all the thermal bridges, all of those things which you and your listeners would probably be aware of. So that's a good product for a whole bunch of those reasons. And we can get it, it's just expensive, because it's important to start with freight got expensive, and it's voluminous. It's not like an MVHR unit doesn't take up much room in a shipping container. Whereas you could fill a container full of insulation and do a house, maybe two.

**Ben Adam-Smith 19:01**

So Andy, what would it look like then, if we were coming to you as a client? Can you take us through the process at your practice here?

**Andy Marlow 19:10**

Sure thing. So the key part, the biggest and most important part of every project is getting a design brief sorted. Like why are we bothering like, why do you want to do this? Why do anything at all, especially if it's a retrofit? What's wrong with the house, you gotta suck it up? What's your problem? There's obviously a reason and we're not trying to talk people out of things, mostly. And therefore it's setting the parameters for what are we trying to achieve? And we use that to always come back to on the way through, to make sure are we still doing what we set out to do and if we're not is this new thing, a good step in the right direction. We don't want to go on tangents. Spend a lot of money on something that people don't ultimately want. From there, we roll into a relatively, an architectural term, standard design process, work out what the building's actually going to look like. And then we spend a lot of time quite early on, probably earlier than most, looking at how is it going to actually get built? Both in terms of the detailing the materiality of it, but also who, so whether it's an owner builder, as we call them here, self build in the UK, or whether it's a licenced builder, but we need to understand that from the get go, because there's differences as to how those things will happen. Professional builders have certain preferences sometimes, so if we know the actual company that's going to do it, that can be really beneficial. If it's someone whose owner building their own project, it's like, what are you actually going to build it yourself with your own hands? Or are you just going to project manage other people, and again, often requires different detailing systems and also documentation, we've had some owner builders who were awesome. And literally, like, they've got a floor plan and they're just working it out, because they're smart, and they know what they're doing. And we've got other owner builders, where we almost have to draw every single detail because they are inexperienced, and they just need that kind of hand holding. So neither is better or worse, as such, they're just very different. And understanding that from the start governs the process as to what happens

**Ben Adam-Smith** 21:04

Do they have different levels of skill coming into it, for example, they might have done either quite an in depth renovation before, so they're prepared for it, versus not so much. Is that what the big difference is? Or is it more the detail, attention to detail?

**Andy Marlow** 21:20

It can be all of those things, some of our best owner builders, we've tried to talk into becoming professionals after the fact, we've just watched them to it and go, geez, you're better than some of the guys who are already doing this as a job. Some of them have some sort of related background, we've got one at the moment, who's an engineer, like not a structural engineer, but he's

**Ben Adam-Smith** 21:39

Very common

**Andy Marlow** 21:40

Yeah, he's got an engineering brain. And therefore he pulls everything apart, builds it 17 times in his head, draws it 16 times, then thinks about it again, changes his mind and does something else. So there's a level of thought in that. And it will also take him four to five years to build this house. It's also a complicated house. He's happy with that, it's what he wants to do. Others are going to try to save money and sometimes it's successful, sometimes it's not. And it really for me, I think the key difference is, do you want to do this? And anyone who's in it purely to save the money, not because they really want the experience? And all of the positives that can come from it. If you're just in it for the money, I'd say it's probably not going to go very well.

**Ben Adam-Smith** 22:24

Yeah, I think that's actually a very good tip. What about your builders, then, what is the skill level like there?

**Andy Marlow** 22:31

The builders that we work with, especially the ones that we work with a second time are awesome! There's a reason we go back. We haven't had that many that we've worked with that we won't go back with, to be fair. We mostly work again and again with the builders that we also like as humans, just because there's enough challenges in our world as it is and we just we like to gather a team of people that we enjoy the company of. So that isn't a problem for us finding new builders in different places, because we work all across the country. So that can be a challenge. As a nation, we have a massive skill shortage across almost everything, we have failed to educate people in trades for many years, everyone's focused on going to university to get degrees, which is nothing wrong with that, of course, I've got a couple of myself. But we've neglected vocational training, and therefore we've got a massive dearth there. And that's led to problems at a whole bunch of levels, which includes a large number of people who have fairly well paying jobs doing work, not particularly well, but due to a lack of competition, they still have jobs, and therefore, the skills and trades at the board level is very, very challenging, because people have not been building in a way that's actually legally compliant even half the time.



**Ben Adam-Smith 23:45**

Well, that's not good. What about, you mentioned going to places that you don't really know trying to find a builder? How do you do it?

**Andy Marlow 23:54**

We've become fairly adept at it. We make a fair few phone calls, and we ask some dumb questions. So we've kind of learned to put on the silly hat. And you sort of lead people down a path and see what answers they throw back at you.

**Ben Adam-Smith 24:07**

Go on, give me a dumb question.

**Andy Marlow 24:08**

Oh, you just sort of sit there and go, oh you know, the climb was to build this Passivhaus thing is meant to be airtight, I don't know. What do you know about this? It sounds a bit crazy to ask. And if they, you can sort of, you can tell.

**Ben Adam-Smith 24:19**

I understand. I think I could get past the first question.

**Andy Marlow 24:22**

So we do stuff like that. That's the random people, obviously, our default. First is obviously ring, architect friends, designer friends that we know and talk to them and talk to the

**Ben Adam-Smith 24:33**

Recommendation

**Andy Marlow 24:34**

Yeah, and talk to the, you know, the Australian Passivhaus Association has a list of all the trades, certified trades people, you know, you start with us, but when you run out of those options, that's where we go.

**Ben Adam-Smith 24:44**

And it must be tricky as well because you want to check out work as well and you've got a big country. How do you get there? How do you deploy people your team?

**Andy Marlow 24:55**

Look, that part's not too bad. I mean, we have a big country but also it's not unusual to get in a car, drive for three hours, have a meeting and then drive home again, whether that's truly sustainable is a very different question. So that part's not too bad. There's always site visits involved in all of our projects anyway, the further away they get to be honest, the less site visits we end up with technology has obviously made a whole bunch of that stuff much better, or at least more economical. So there's always a site visits the physical ones. And that's when we deal with a lot of those things. And because

you've travelled distance, you'll often it'll be a whole day. Whereas if it was a guy around the corner, you'd rock up for 40 minutes, you're done, you go again, these things just become bigger when they occur.

**Ben Adam-Smith 25:35**

In the UK, there's a lot of talk about embodied carbon, and we're trying to piece together all the things that make a difference. So that like you mentioned earlier, having houses that are too big, we're trying to get as much right as we can. So is that easier here is your default timber frame and, yeah what examples do you have?

**Andy Marlow 25:56**

At a national scale, our conversations around embodied carbon are not as advanced as they are in the UK from the things I see and hear. But within the Passivhaus world, it's a big thing, because of mostly the nature of the people and everyone cares about this stuff. The default construction for most housing, full stop, is timber frame, nearly every Passivhaus is also timber frame. So the wall and the roof part is fairly straightforward. Our mass construction industry built a lot of brick veneer houses, so they build the timber frame and then stick bricks on the outside just because it's cheap, the way they do it. So there's a bit of a transition there. And floors obviously are very tricky, because they tend to be a lot of concrete slabs, because concrete has got a lot of good qualities apart from the carbon part. So the standard is not terrible and we certainly don't have the issues that UK having get away from brick and block construction In terms of really good pushing the envelope, embodied carbon stuff, we've just finished a house in Victoria, which is a straw bale house, but it's a prefab called a setup panel. So it is basically a timber frame, which has got the straw bales in situ and therefore it's speedy on site, etc, etc. Now, there's a company in Bristol that do these actually I met the guy years ago. And those kinds of buildings are sort of pushing the envelope on that embodied carbon front, it's not a huge house, it's was on a big block of land in a field in the middle of nowhere. And we still have quite a lot of those houses getting built. And that's not necessarily a bad thing. But you know how to do those things in a fairly compact way. And in a low carbon way is really, really important. So there is some really good stuff happening around there. It's a certified Passivhaus. It's off grid. So it's got a fairly decent solar system. So it's premium, because you can't go off grid without getting to premium. So you know, it ticks basically all the boxes that we need to tick. Yeah, we haven't talked about generation, is that just a default as well, for most houses to have PV? Ah yes, the majority of new houses full stop in with PV on the roof. The finance, the economics of it makes sense now and have done for some considerable time. And therefore it's just happening, the key questions really are around the size of the array. So like, the average size of new stuff is creeping up and getting closer to sort of 10 ish. I guess the more interesting part, especially when you start looking at Passivhaus, and performance and all of those issues, ends up being around the balance between capacity and generation on an annual basis and then starting to look at things like peak load, and the transition of the grid and all of the issues that fold into that, in that a lot of big inefficient houses with big air conditioners, while they might make a lot of electricity at various points, if the roof is suited, in the middle of big electricity spikes, they're going to struggle, but also when the system crashes, then they're completely stuffed. So yes, PV is sort of well sorted. But a lot of cases it's sitting on top of what we call very fancy looking sheds, even though people think they live in a house.

**Ben Adam-Smith 28:53**

Yes. And battery storage, is that a route that people go down or is going into the grid easier?

**Andy Marlow 29:01**

Going into the grids, definitely easier. Batteries are still not the default, but they're becoming more common. Some people are doing batteries as a stuff you do to the energy companies. Our feed in tariff, that what you get back to feeding in as, at various points was very high and very generous to encourage. And now it's at the point where it's almost insulting. So a lot of people are like stuff you some people are in it for a personal resilience point of view. And some people are in it for the environmental. So there's a few different reasons which drive people to batteries. But at the moment, the economics of it aren't particularly compelling.

**Ben Adam-Smith 29:33**

Now, a little while back, I was asking you about your process of how you work through with clients. Did we get to the end of that? Can you remember where we got to?

**Andy Marlow 29:42**

So we're talking about builders and the fact that we spend a fair bit of time, reasonably early on working out, how to, who's going to build the project. So that occurs sort of during the design development phase, which is normally before we've gone to planning because we want to know enough about the building, once (assuming the UK is fairly similar), once you go to planning, your ability to change stuff later becomes fairly limited and therefore you want to make sure that you got it right. It upfronts a lot of the work, which can sometimes feel a bit ahead of its time, but it generally ends up being an absolute godsend. So we're getting as much locked in as early as we possibly can, including the human. And part of the strategy with professional builders, that licence builders is that because of the nature at the moment, there's a lot of work around for them, and they're all very, very busy. It also is partly about getting them locked into the project. So they know that they're going to build your house, albeit in nine months time. So they've got security of work, they might not have a signed piece of paper, but everyone's mostly doing the right thing. So it's in their interests, it's in the client's interest and it's certainly in our interests from a just sanity point of view. So we're doing that we go into planning, and then post planning, we're dealing with all the detailing and construction documentation and refining interiors, as well. So we've spent a lot of time now getting our interiors to absolutely sing because that's the stuff you end up looking at every day.

**Ben Adam-Smith 31:02**

Yeah, it does sell. What challenges crop up during construction, anything out the ordinary or memorable.

**Andy Marlow 31:10**

Most of our new build construction goes very smoothly. Occasionally, you'll have issues with stuff related to groundworks, things that you literally couldn't see before someone dug a hole. So the new build stuff we find is fairly straightforward, because it's all built new and as long as everything's done in the right sequence all this good and well. The retrofit projects are obviously quite different and mostly at the moment where someone takes something a part, and everyone stares at a wall and goes, Oh, we

haven't seen it done that way before. So one of the things that we've learned, we've finished, I think maybe two EnerPHits properly at the moment that are actually across the line, and we've got a whole bunch of others that are underway. We're now very much avoiding detailing almost anything. Before we start, we've got a strategy in terms of installation values that we need to achieve and products. But we're mostly waiting until demo stage to then walk around, stare at everything and then resolve most of the detailing. We know enough about what we think we'll do and we've had conversations, but we're not documenting as much earlier now, because we just find that we've thrown away so much work and time.

**Ben Adam-Smith 32:16**

You've mentioned already about how some of the houses are more like sheds. So do you come across this a lot, that you are facing are EnerPHit versus demolish and rebuild? Is that you know, do you find yourself drawn both ways?

**Andy Marlow 32:32**

Yes, it can be really challenging the what actually the one job that that's in my mind at the moment, the clients came to us convinced that they needed to knock down the house and have a new house. It's a big house, on a big block of land in a fairly affluent part of Sydney. And they come to this conclusion because that spent money and time and energy over the years trying to make it better. And they hadn't succeeded. And they've done some good things. But there's some other things have been done that weren't awesome. And we spent a very long time going in circles because we designed a new house, which geometrically looked remarkably like the existing one because a lot of the bones were pretty good. Anyway, over almost a year, we sort of talked design negotiated and we eventually ended up at a we're going to pull off an old edition that was added on that looked fine, but just wasn't working. And now it's an EnerPHit project. And this is one where they brought some things apart. And we've found some interesting things. So we're going next week to work out what to do about that. So it's a real dilemma quite frequently. And it's partly embodied carbon, it's partly money. And one of the challenges on this one was the client at one point did turn around and say, as long as it doesn't cost me any more to do the retrofit, I'm okay with that. Which was not an unfair thing to say. The challenge is obviously, for the builder to price, a retrofit is much, much harder than to price a new build, which is in their world fairly straightforward.

**Ben Adam-Smith 33:59**

Yeah and like you mentioned before about a second go at things. A second retrofit is often priced very differently to the first retrofit.

**Andy Marlow 34:06**

Yes I mean, to be fair, these builders, we do know very, very well. And they have done a couple so that we're confident that they're not too far off the mark.

**Ben Adam-Smith 34:16**

Do you find that it gets under the skin of the builders? Do they not want to go back to some of the other houses that they're building? Or are they flexible?

**Andy Marlow 34:24**

Yeah, one of the guys that we do a lot of work with, they've got a few Passivhauses for us now. They've talked quite explicitly about some of the sustainable work that they did before we all knew each other, and just how they now realise it wasn't. And I think that that's a really good thing. I mean, one of the one of the most interesting conversations is, you know, your elevator pitch. What do you do so well, we run a company called Envirotecure. What does that do? It's like, well it's kind of hard to simply put what we used to say it was sustainable architecture. We're like, well, what the hell does that mean? And this is the evolution, like what we thought was sustainable 10 years ago, probably wasn't, what we think is now won't be. It's all it's a journey.

**Ben Adam-Smith 35:06**

Let's bring ourselves back round to where we began with cooling. So, was there anything else to add to that conversation?

**Andy Marlow 35:15**

Beyond the reiterating the size of the glass areas to begin with massive factor obviously, the other one is, so we design all the buildings so you can naturally ventilate them. So you know, the ability to open the window, so unsurprisingly has a lot of tilt-turn windows, you know, when they're turned, that's a big hole in the wall. That's incredibly useful. The key thing, and this is, I guess, a challenge, possibly more here than it is in the UK right now, but it's going to change is the default assumption with natural ventilation is that the outdoor air is desirable or more desirable than the indoor air. So aside from bushfires and pollution from vehicles outside, there's also that is it actually cool? The answer here is not always and every now and again, we will have a heatwave run. So heat waves of 40 plus degrees in the day aren't great, like nobody particularly loves that. But the key defining factor is becoming what is the overnight temperature. And it is not uncommon in Sydney, at least for those temperatures to not go below 28. overnight. And therefore, while 28 is better than 40, it's still outside of almost every human's comfort zone. And therefore, the ability to naturally ventilate a building is really important, we're never going to go away from the ability to do it. But you rapidly realised that you do need some form of mechanical cooling, because there are moments in the year. And increasingly so where it just isn't going to be particularly helpful.

**Ben Adam-Smith 36:42**

And finally, are there any tips that you have for anyone starting house projects? Anything additional that we haven't already mentioned that might be helpful on their journey?

**Andy Marlow 36:55**

Ah so many things!

**Ben Adam-Smith 36:57**

Keep going Keep going?

**Andy Marlow 36:59**

Ask lots of questions of people who should know decent answers and if you don't understand the answer, ask the same person again. And if it still doesn't make sense, ask someone else. Knowing as

much as you can before you start is the key that any one of these projects, obviously, the more professionals you surround yourself by, competent professionals, the easier that's going to be, they will have seen and done stuff before. But it is significantly cheaper, and easier and less stressful to learn from other people's mistakes, I would recommend leveraging them as much as possible. You will make some of your own, everyone does, realise them as quickly as you can, learn, move on, try not to do it twice. making the same mistake multiple times isn't a good sign.

**Ben Adam-Smith 37:41**

Well, Andy, thank you so much for chatting to me today. Really appreciate it. Thank you.

**Andy Marlow 37:46**

Pleasure. Thank you very much indeed.

**Ben Adam-Smith 37:49**

Head online to take a look at the show notes that accompany this session [houseplanninghelp.com/346](http://houseplanninghelp.com/346). You can review the main points on our summary, we always give you one of those, there are photos to take a look at as well. We talked about a couple of projects. And if you've got a comment, or you'd like to ask a question, you can either do that within the show notes, but you've got to head down, head down to the bottom or on social media. We'll give you links. And of course we'll link you to Envirotecture, [houseplanninghelp.com/346](http://houseplanninghelp.com/346). What can you do in a world that is reaching all the planetary boundaries? What can you do in the face of the climate emergency? What can you do to be more in sync with the planet? They're all big questions. They've been addressed by other people many times. Yeah, I get that, and we actually have answers. They're not often answers we want to hear perhaps, maybe they try and boil it down to some key actions that we can take, which are stop eating meat, stop flying. Yeah, of course, my favourite food growing up was steak. Even today, maybe my favourite food is still bacon. Not that I eat it that much. And then there's travel. That has been a passion of my life as well, meeting people in different cultures and I'm lucky to have had several adventures. So two things which, on the face of it really, really difficult to address. However, I've I've tried, certainly I'm eating a lot more vegetarian meals than I ever used to. And what's interesting is you develop a taste for it and perhaps want it more. I've also grumbled every time we've booked a flight thinking that I know I shouldn't be doing this, but where's the balance? You also have some really good times when you head abroad and yeah, so what do we do in this predicament? So I've just spent six weeks in Australia, fantastic trip, great way to start the year. My parents were out there, my brother lives there, my other brother was out with his wife. And I thought, I can't miss this but also the could be the perfect opportunity to just draw a line under long distance travel. Hopefully it's not the end of my adventures, I'll just have to get a bit more creative. So I'm saying no to long haul flights and seeing where that leads me. The other thing is you don't realise all the impacts. I might, if it weren't for having a family give up flying all together, but I know that that's one of my wife's favourite things is going on a summer holiday. So I'll continue to do the odd short haul flights for the family for those memories. And we'll see what happens giving up long haul flying. And in that conversation that we just had with Andy, I thought, lovely that comment about how we're on this journey, aren't we with sustainability and hopefully it's when you look back that you realise how far you've come. Next time we continue my interviews from Australia, met some lovely people, Amelia Lee from undercover architect, you may know her already. If not kept



subscribing to her podcast too. So much good stuff, so many tips next time. Thanks for listening. The House Planning Help podcast is produced by Regen Media: content that matters.