

Episode 203

Putting craftsmanship at the centre of your eco build - with Will Anderson

The show notes: www.houseplanninghelp.com/203

Intro: Self-building on a rare London plot is a big achievement so anyone who has managed it twice must have some good tips! Will Anderson not only did that but also did it with the greatest attention to environmental and aesthetic standards. A devotee of Arts and Crafts principles, he talked to us about his builds and his journey from craft fan to artisan. I started by asking him how he started his first house, Tree House.

Will: The whole story began a very long time ago, around 2000, when I first came across the site next door which had a very big tree on it, and I took the opportunity to realise my dream which was to self-build.

I was completely amazed that we were able to do it in London, but we snapped up the plot and we decided to do the very best we could for that plot. Which meant for me, at that time, building a house that was not only wonderful to live in, but had the very best ecological performance. And we were inspired by the tree. We wanted to build a house that worked like a tree, hence Tree House.

We set a very, very high set of goals for it, ecologically, environmentally.

Ben: Why?

Will: That's what I wanted to achieve. It seemed like the right thing to do, that we had this extraordinary opportunity and I wanted to make the very best of it. I was also very committed to those kinds of goals personally.

But also, it seemed to me, that it was a win-win situation, that if you built a house that had the very best environmental performance, it would also, hopefully, be the very best for you. It would have incredibly low bills, be very comfortable, be warm, all those kinds of things.

There are, of course, potentially costs involved, and there were some costs, but in the scheme of things, when you're building the entire house from scratch, there are a lot of costs to think about and it seemed to me to make sense to factor in some of those additional costs in the knowledge that in the longer term, you would make some significant savings.

So, it was a big vision. It was ridiculously ambitious, frankly, looking back.

Ben: Was it a terraced house really, that you were designing? Did you go into it like that?

Will: Tree House was a detached house, but we knew, always, that there was going to be a plot next door and somebody would build next door. So, we knew that in the long term, there would be a house next door and Tree House would become semi-detached, and indeed, in the longer term, as part of a terrace, which is what has slowly been built around it.

So, we always knew that somebody was going to build next door and I always had it in the back of my mind that that somebody might well be me.

Ben: If you'd put windows on this elevation here, would that have actually blocked someone, or just meant that something awkward would pop up next door?

Will: If we'd put windows on the northern elevation, which is where the new house has been built, we would've made life extremely difficult for anybody who bought the land. So, it was strategically sensible to ensure that the entire north elevation was not going to compromise anyone's ability to build next door. Our neighbours, obviously, who owned the land were very glad of that. But also it meant, in the long term, that I was able to have the opportunity to do it all over again.

Ben: And this was at the back of your mind as you go through it. So, take us through some of the design challenges on this Tree House and how it went forwards.

Will: Tree House was the first house, the second house was called The Orchard. Tree House started on site in 2004 and at that time, that was before the whole Passivhaus movement had really happened in the UK.

Bizarrely actually, I had taken an interest in it during my research, while we were designing Tree House. I worked with a great architect – Peter Smithdale of Constructive Individuals – he was

very up for the kind of crazy ambitions that we had for Tree House. And I showed him some of the Passivhaus stuff and he was kind of interested, but again, nobody really knew about it here. It was all a bit challenging, nobody had built anything like that here. I even had an email conversation with Wolfgang Feist, who's the guy who runs the institute in Germany.

But we didn't end up going down that route, just because nobody had done it here; it was all a bit too challenging. And even delivering what we wanted to deliver, we had to look far and wide to work out what to do. We ended up using a timber frame approach with detailing using Canadian standards of airtightness.

So, we had to really make it up as went along, to some extent, in building Tree House.

But we set this incredibly ambitious goal of being energy self-sufficient, zero carbon, which we did achieve by combining a very strong fabric first approach with quite a lot of technology, which we were able to do. So, a big solar array on the roof, PV cell array, plus a ground source heat pump, plus a hot water panel too. So, it was quite a high-tech, high-performance house in every way.

But we got there.

Ben: How did the technology perform? So, say for example, the ground source heat pump. I can look out and see, you haven't got much space.

Will: So, the ground source heat pump, which was supplied by Ice Energy, has always worked very well. Our neighbours who now own the house have no problems with it. I suppose one of the nice things about heat pumps is they do just tend to chug along. They're quite simple bits of technology compared to boilers.

Because we didn't have an enormous amount of land, we had to go down, rather than across. So, we sank some boreholes. All of that went in at the very beginning of the process in building Tree House.

But it worked well. It was a warm house, it still is, and we never had any significant problems with it at all. So, it's a good technology, a tried and tested technology.

But when we came to build the new house, The Orchard next door, I wanted to cross out some of that technology. I wanted to design it in such a way that we didn't need it.

Ben: Maybe the question should then be, what did you learn from building the first time?

Will: Well – lots.

Ben: Maybe that's a tall order question.

Will: No, it's okay. One thing I learned is that the second time around, I really wanted to do it myself. That was partly because I had a difficult relationship with our contractor and that was tough. Hopefully in most cases, that wouldn't happen. But I had a real desire to get my hands dirty the second time around. I did next door, when we were building, towards the end, but the second time around, it was very much more self-build.

It's more challenging to do that. I did an awful lot of courses, I learnt an awful lot of trades to do that. But that was enormously rewarding in terms of what we achieved. But in design terms, I suppose what I wanted to achieve the second time around was something simpler, something which was less high tech, which worked without so much technology but still achieved a really comfortable indoor environment.

That basically meant going down the passive house route much more intently, and that was possible the second time around. The whole design had arrived in this country, the supply chain was there, the company who put up the house knew all about it. So, we could build a house which was much, much warmer in fabric terms, and then we could cut out the heating system, basically.

Ben: You mentioned timber frame on the Tree House, but you had a timber frame on this too. So, how did it differ and what changed in the specification?

Will: That's a good question. The timber frames are actually very similar. They're both I-beam timber frames. So, the studs and the walls are all I-beam, so you have this very thin cold bridge across the studs, because of the sheet of OSB in the I-beam. So, in a way, they looked quite similar. But actually, the design was different.

The house next door, Tree House, detailing the airtightness was a real problem. That's what people didn't really know about. We had to have a whole, kind of, interior plastic wrap, if you like, which provided the airtightness. In this house, it's much simpler. We used a design which Touchwood Homes have specialised in this country, where the airtight layer is actually on the outside and they use this system where the sheathing boards actually interlock and you glue

them together, so that the entire outside sheathing of the house is airtight. And they're extremely good at doing that well.

So, we were able to lose all of the complexity of the plastic wrap on the inside, and achieve something which I think is much more robust in terms of airtightness than the house next door. Although the house next door I think works pretty well, this one was easier to build and it's a simpler design and it means that you don't have to worry so much about what you do on the inside of the house in terms of drilling holes and putting services in. You can do all that and not compromise the airtightness.

Ben: What I like is, there is so much character here, and I think it's worth pointing out some elements that are outside the thermal envelope.

Will: Yes. So, the floor area of the heated part of the house is a hundred square metres, but we also have two very important spaces outside that, which are right at the front of the house.

On the ground floor, there's a porch, which, of course, has always been a key feature of eco house design, the idea of having a kind of barbican to protect you from bringing lots of cold air in whenever you open the front door. So, it's an intermediary space between the outside and the inside where you can take all your clothes off and your boots off and close the front door before opening the interior front door. But it's also a great larder, it's a great place for storing food. It stays very cool. It's built with a traditional solid brick wall.

The space above it is a conservatory which is built again using very traditional materials. It's a solid oak frame with lots of leaded windows, all of which I made myself. So, an incredibly old-fashioned design, but because it's not a heated space, that doesn't matter. It doesn't matter how well ventilated and how much heat comes in and out of it. In fact, it's a wonderful space in the spring and summer months. It gets very warm indeed.

So, it's great having these spaces outside of the envelope, where you can do things where the heating doesn't matter because you're not heating it.

Ben: Let's talk through some of those skills that you picked up. I'm interested to see a workbench right in front of us so, obviously ongoing. What did you learn and why?

Will: The workbench I actually made myself. I did a course in Yorkshire, Make Your Own Bench. I suppose I originally anticipated that the bench would get sold, but in fact it's become part of the household,

part of the main room, and stained glass is currently being made on it.

The house is inspired by the arts and crafts movement. I was very interested in the arts and crafts movement. I love the houses of the arts and crafts architects, and I've been to many of them. I'm inspired by their approach, the handcrafted approach, the delight in materials and in a kind of clean but very rich design.

We tried to pursue that approach here and that, for me, meant developing many of those craft skills myself. So, I became a cabinet maker first of all, trained to be a cabinet maker in Kent, built the kitchen long before we started building the house. But also, developed skills in joinery, plastering, stained glass making, even in making ceramics. We've even made tiles from the clay which we took out of the ground when we were digging the foundations, to complete some of the details in the house.

So, it's been a real labour of love in that respect. So much of the house is really hand made by us. It's been a long project as a result. We've taken a long time over it. But we're going to be here forever, so that's okay.

Ben: How did you find those courses? What were your criteria?

Will: It sometimes is hard to find the right course and I've had a few hits and misses. But I did do quite a few courses at a place called the Building and Training Centre in Croydon. That just was reasonably nearby, and they did a wide range of courses. So, I did things like joinery, bricklaying and plastering there.

But for the more detailed stuff, particularly the cabinet making, that was a more sustained bit of training and I had to go to a special workshop. I actually couldn't find a place in London for that. I ended up working in Kent to do that, but with a guy who was very supportive and very helpful in letting me basically go off-piste to do the stuff I wanted to do very early on.

Also, the stained glass was at the Working Men's College in North London. You just have to explore what's local to you and try them out. It's always a bit hit-and-miss.

Ben: How much of it did you know upfront and how much did you craft as you went along?

Will: Pretty much all the latter. I didn't really have any craft skills to speak of at the beginning.

Ben: Was it a case of you get the shell in and then you start adding in a little bit, or was there a bit more tactics to windows and ...?

Will: No, it was a bit more planned than that. For example, we have this very tall staircase window, which stretches over two floors. It's a triple-glazed window but it's finished on the inside with an extra layer which is all stained glass. So, it's a very big stained glass design. That was always part of the original design. So, at the design stage, I was already thinking about how we could incorporate these kinds of crafts aspects.

So, all sorts of details like that. And the kitchen, obviously the kitchen is an open-plan kitchen in the main living space and that had to be designed as part of the design for the building, to work out exactly how it would fit in. So, I was thinking about the design of all these things early on.

Yes, strange moving between design and doing some courses and then actually starting on site and trying to keep all of that going at the same time. It's tricky to do that, I have to say.

Ben: What happened when you got stuck? I'm sure it was inevitable that happened a few times.

Will: Well, yes. I didn't build the entire house by myself and I got help from various places at various times. The very, very first thing I built was a wall at the end of our garden, which separates the land from the adjoining house. It's a very gorgeous brick wall made with two different kinds of reclaimed bricks. It's quite a high wall at two metres high.

I did a bricklaying course and started building that, and I got to about course ten and thought, 'hmm, I'm not sure if I'm going to get to two metres and this is going to be okay.' Just because it was my very first bit of bricklaying. I was being a bit ambitious. So, I did get some help in at that point with a builder who'd helped build Tree House next door, who is an experienced brickie. So, I became his muck maker while he carried on going.

So, there are times when you have to get help. You need to know your limits, obviously.

Ben: You've done that a couple of times too, with Touchwood, when they were here, you joined in. So, how easy is that to do?

Will: Not easy. If you have a sub-contractor who comes in to do a piece of work, usually they want to do it all on their own terms. But Touchwood are a great company and they were very happy, given

that I did have a bit of experience, for me to muck in. Obviously, they ran the show, told me what to do, but it was great. The timber frame went up in the middle of the summer, gorgeous long sunny days, and it was great to work with them putting it up.

But I had the same discussion with the brickies and they said, 'oh no, we'll do it ourselves thank you very much.'

Ben: An attitude difference between carpenters and ...

Will: Well, it was reasonable. I could've helped the brickies mixing the muck and shifting things around, but they had someone they wanted to do that. So, alright, fair enough.

Ben: Were there any issues in actually continuing this semi-detached property, this wall here? Did it all just come out okay? I'm trying to think structurally how that works.

Will: It was challenging. It was a bit tricky because basically what we have here is, the neighbouring house which we built first had an I-beam timber frame wall finished with render board and a ventilation cavity and all that business. And then we're building another timber frame wall up against it. And what we had to do is we had to take the render board off, we had to build another timber frame wall in front of the other wall, which we then had to fill with insulation.

But also, we had to make sure that although we were building this new wall next to the existing one, they're both two timber frame walls. It's very important that they weren't attached in any way. There are in fact some metal ties at the very top of the building, but we didn't want any ties between the walls anywhere else in order to ensure there was acoustic isolation.

So, it was a tricky thing to do well but it does mean that we've got two very well insulated walls there, without any acoustic breaks. So, it worked out fine.

Ben: And were you able to live next door while you were building, or did you have to move out?

Will: No, we had to sell next door in order to buy the land and raise the money to build. So, we lived in a rat-infested hovel in Forest Hill for about three years.

Ben: Maybe while we've touched on the land you could tell me about both sites. So, the first plot that you got for Tree House, were you approaching the owner of the house opposite? How did that work? And also, how did you get through the negotiation on the next one?

Will: When we bought the land for Tree House, that was just on the market. It was in a local estate agent. A bit remarkable really. That doesn't happen very often, especially in Clapham. So, we were very lucky to find that.

The second time around, we knew our neighbours. We knew the people who owned the land which was one day going to become a building plot.

Ben: How? Because they're on the opposite street, aren't they?

Will: Yes. So, the plots on which we've built are all effectively the ends of very long gardens from one road which comes down to another road. Just typical gardens with road frontages which are almost always being built on these days. But these ones, for whatever reason, hadn't been built on. So, we knew that one day it would come up.

So, we just asked our neighbours to ensure that we had first option when they decided to sell the land, which is what effectively happened.

It was always there in the back of my mind that one day we'd do it again. Happily, we had about eight years in Tree House which was an absolutely lovely house to live in, before they decided to sell. So, at the time, when the time came that they wanted to sell the land, I was kind of in a position where I was enthusiastic to do it all over again. And so enthusiastic that I wanted to do it very much with my own fair hands, which is what happened.

Ben: How did you set a price for the piece of land?

Will: Through a tricky negotiation.

Ben: Any tips?

Will: Well, the price I agreed with our neighbours was based on the price which I had paid for the land next door which was on the open market, albeit ten years earlier so, we paid a bit more obviously. We were fortunate in some ways that we bought before London went a little crazy. But even so, I guess we sold before that happened too so, it's all swings and roundabouts, isn't it?

Ben: Am I right in saying that on the first building, you negotiated with the contractor? How did that turn out versus what you did with getting a timber frame shell in here?

Will: The first house was built through a contractor. I have to say, that wasn't a great experience.

Ben: But that wasn't part of the negotiation, it was just how things played out? Or was the negotiation the contributing factor?

Will: No, the negotiation was okay. It was just the reality of working with somebody who wasn't a great communicator for quite a long period of time. It took a long time to build. He didn't have many men on site and it was a difficult relationship.

So, the second time around I was very keen to do it myself. That's part of the reason I wanted to do it myself, as well as just feeling more confident about doing that and, as I say, wanting to be very involved in the details of how it was built.

In fact, that worked out very well. Lots of people will say you mustn't try and do that if you have no experience, but actually, it isn't so hard to build a house on your own if you get the right support, the right people to do the right jobs.

Ben: And you have to be patient and determined.

Will: Patience is everything, yes. Patience.

Ben: I'm sensing that about you. So, things just tick along, do they?

Will: Well, patience is a very, very important quality to have if you're self-building. And also, you need to understand how the building industry works.

The classic story is about people trying to get builders to do stuff and they don't turn up on the right day or whatever and people get very frustrated by that. But actually, you need to understand that in the building industry, that's absolutely standard. Not because builders are unreliable, but because people's timetables and schedules are always shifting. People never know when something's going to start or finish – well, people never know when something's going to finish, so they never know when something's going to start.

So, you have to be very flexible. You can't assume that if people have said they're going to start on X day, they're going to start on X day. And you mustn't jump up and down and tear your hair if they don't. Because the last job they were on overran and they can't just walk away. You'd be pretty annoyed if they walk away from you before the job is finished, which of course, is another thing people get irate about.

So, there's an ethos of being flexible, working around other people's needs as well as your own and not getting too upset if things don't go exactly to plan. You need to expect them not to go to plan and you need to have a flexibility built in to the project. Try and understand things from other people's perspectives and the kind of issues they're dealing with too.

Which isn't to say that there aren't cowboys out there who will mess you around. Happily, none of those people arrived on this site. All the people we worked with were great. Really great.

Ben: What was the biggest challenge?

Will: Oh, well it took us a long time to get planning permissions, the design took a long time to get right, because of the complications of where we are. But actually, once we were building, there's always an issue about getting out of the ground. Actually, we had some very good ground workers. So, that was all let as one contract. A lot of concrete got poured and we had to pile the foundations and building where we are, up against another house and having to take part of their wall off and doing all that was tricky.

Also, unfortunately, the neighbours on the other side were less than supportive and we had a very difficult party wall agreement. That was really, really hard work actually, because they picked up on us over absolutely every little detail. Every foot we put wrong, they were down on us like a tonne of bricks. And that was a bit exhausting.

So again, you need a certain resilience and patience and determination when you're up against those kinds of problems because they're not going to go away. You just have to see them through, which indeed I did.

Ben: That party wall agreement is because you're within three meters of the neighbouring property and it's easier, obviously, on that side because that used to be your property. So, how does that negotiation work?

Will: It's all about party wall surveyors. If you have to have a party wall agreement, you need a really good person on your side drawing up the party wall agreement. We did have a good guy but nonetheless, there were problems with the party wall award which led to conflict.

Just pay attention to the detail at that stage. When the party wall award is being drawn up, pay attention to the detail. Don't just assume it'll all be fine. Don't assume that your happy neighbours will stay happy neighbours. They may not once the scaffolding goes

up and their garden gets crushed or whatever else happens. So, you need to just make sure you're properly protected.

Ben: A couple more things then. This obviously has a high performance thermal envelope. You've chosen not to include MVHR. Why?

Will: We wanted to have a passive house rather than a Passivhaus. We wanted this house to be as passive as possible. So, not only having minimal active heating, but also we didn't really want to have mechanical ventilation, which is always the issue with the Passivhaus spec. You have to have mechanical ventilation because the airtight frame is so tight, you need to have controlled ventilation.

Well, we do have heat recovery ventilation but it's a passive system called Ventive, which has been quite widely tried and tested now and we find works very well. Basically, it means we've got the three main living spaces, a natural ventilation system driven both by wind on the cowls on the roof and by the buoyancy of the exiting air. And there's a heat exchanger in the cowls at the top. So, you do get some heat recovery.

Although you don't get as stable a background ventilation as you would with a mechanical system, actually it works perfectly well most of the time. And if there is any time when you feel the air quality is a bit stuffy, you can just open a window for a bit. You're not losing massive amounts of heat.

So, I'm very pleased with that. It's worked really well. It means that we've got a completely draft free, stable interior temperature, but we still have good air quality without having all the business of mechanical ventilation. So, I'm very pleased with the Ventive system.

Ben: I don't think you mentioned this, but you had mechanical ventilation in the last house.

Will: Yes, we did. I was never convinced it worked terribly well. These things often aren't installed very well, and I don't suppose ours was installed brilliantly. They've got to be setup well, and even when they're setup well, I'm not sure how well they really work in terms of moving the air around.

And also, it's just a big whirring box in the cupboard. And if you can get rid of that big whirring box with a passive system, then it seems like a good idea to me.

Ben: You've also reclaimed quite a few items in and around – I'm trying to dig into more of those eco credentials. Anything you want to tell me about?

Will: Yes, we've used quite a bit of reclaimed materials. All of the floors, they were a real labour of love. Every floor in this house is reclaimed parquet. And we've used a different wood and a different pattern in each room. And I can't tell you how long that took and how much effort that was, but it was extraordinary.

Ben: How do you do it? You get the reclaimed material, then what?

Will: You have to clean it up a bit. You get all these blocks, huge heaps of dirty old reclaimed parquet blocks. Then you have to set it out properly, which usually means setting out a long spine down the middle of a room and then you build out from the spine.

You can use these great glues now, which kind of recharge the bitumen. So, you don't have to take the bitumen off, the glues kind of recharge it. So, the glues are good. Nonetheless, you have to be really careful because if you go out a bit, the whole thing starts to go slightly wonky and then you're really in trouble. So, especially in a big room, you have to be really careful or else you end up with all sorts of problems and having to cut blocks in order to fit them in.

So, yes, a huge job. And then, of course, once they're all laid, you have to sand everything down to take all the old gunk and stuff off the old blocks. You sand it down to a new surface and then you oil it. So, a massive, massive amount of work that was. But I absolutely love it. We've got these beautiful old African, Australian and other Asian woods, which you would never get today. Certainly not sustainably. And they're just such a pleasure to live with. So, I would recommend it, although it is a lot of work.

We did actually put down some parquet floors in Tree House, again, reclaimed parquet floors, and I said never again. And then here we are with an entire house finished in parquet.

Ben: Tell me a little bit about the garden, your vision for it and how long it's taken to get to this stage.

Will: The house is called The Orchard and that's because I wanted to build a house which sustained as much fruit as possible, ideally enough to keep us going with some kind of fruit all the year round.

We have a small front garden which is quite densely planted with little apple and pear trees, vertical cordons principally, so, you get quite a lot of different varieties in a small space. The back garden,

although it's only ten metres long by six metres wide, is very densely planted with stone fruits and soft fruit in particular. So, lots of blackberries, blackcurrants, plumbs, greengages, apricots, cherries, gooseberries – you name it, it's all out there.

That was very much part of the vision for the house, to have all this space. We also had this first floor conservatory where we can grow more tender fruit.

What I did actually, at the very beginning of the project, before we started building, because the nature of the plot on this tight urban site, we knew that once the house was up, we would never be able to get any significant machinery to the back of the house, unless it came through the house. So, because the soil was so poor, when we were clearing the site, I had a digger and dumper on site and I actually just got rid of a lot of it and replaced the area which I knew we would be planting with some really good quality muck. And that's really paid off.

Ben: Finally, you've done this once, you've built next door. How do you think you've done ecologically and are you fulfilled, or do you think this will eventually lead to something else?

Will: I am fulfilled, sir. It's not going to happen again. No, this house in particular has been such a labour of love. And the design is so much what we wanted. It's so honed to our needs and to what works for us. I cannot imagine building a house which we would be happier in than this house. Although it's a small house, it's an absolute delight for us to live in.

Given how much of us is in it, all the stained glass, the cabinets, the details, the floors, the ceramics, all these things which have gone into the building, walking away from that would be very hard indeed.

So, there is still another plot next to us. One day, that'll get built on. If we build on it, it won't be for ourselves. So, it is possible I might do it again, but it wouldn't be for us. It would be for somebody else. I'd hope somebody else who is as crazy and as ambitious as I, who buys the land in due time.

Ben: Well, never say never.

Will: Yes, quite.

Ben: It's been fascinating to have a look around and get to meet you. Thank you very much.