

Episode 24

Designing Buildings That Are Radically Sustainable Yet Elegantly Simple

The show notes: www.houseplanninghelp.com/24

Ben: In today's interview I started by asking Jonathan [Hines] what makes Architype different?

Jonathan: Well I guess that our approach has always been to try and keep buildings simpler in order to make better spaces and better standards of insulation and energy efficiency, sustainability. So whereas I think many architects like to make, they like complexity, they like adding things, engineers like technology, we try and make the building simple, that doesn't mean boring it means that we always say elegantly simple, something that simplifies things down to what works best and uses the buildings to do all the hard work in terms of being at one with the environment.

Ben: So on a practical scale how did you get started on that, it seems like a big mission really because sometimes it is easier to complicate things.

Jonathan: Yeah I once heard a story from a civil servant who was sending a report to the minister and he said "I'm sorry it's so long but I haven't had time to finish it yet". Now to actually make something simple takes longer but it's something we have always been fascinated by from our earliest roots doing Segal self-build. Walter Segal had already designed a system of construction that's all about paring down construction to the basic elements and keeping it simple in order that people could self-build it themselves so our roots really have always been in understanding simple detailing, keeping the form of the building functional but also beautiful. So it's always been how we tick but I think in a world which seems to like complexity it's always been quite hard work to plough that furrow I guess and really focus on simplicity. It does take a constant reminder. We have it as one of our sort of core guiding principles along with being radically sustainable to actually be elegantly simple so when we are reviewing our work we're always saying is this simple enough, could we make this work better, what can we take out to make it work better?

Ben: What demands do we have for the buildings that we live in these days?

Jonathan: Um, well, demands I guess have always been, have been increasing gradually, people have a higher aspiration for comfort than they maybe did fifty years ago and there is higher regulatory requirements on efficiency and there is more awareness about the wider sustainability of materials so I think on many levels, year by year, there's more awareness about the importance of doing things to a high standard but achieving that I think is the big challenge, how do you do that?

Ben: And Passivhaus I notice that you are very much into that, are all your buildings Passivhaus now?

Jonathan: Not all of them but more than half of our current work is being designed to Passivhaus which is a lot when you think how much there is in the UK. We have been one of the pioneers of Passivhaus. There's a few other architects and now it's taking off in quite a big way. But we adopted Passivhaus because for us it seemed to offer a logical framework to actually do what we were tending to do anyway but a rigorous analysis, discipline, and a quality assurance process in terms of design and construction rather than just basing it on our intuitive assumptions which we, guided us in that direction actually to give us the rigor of a tool that actually helps us to achieve things.

Ben: And are certain buildings lending themselves more to that than others or can it be anything in your portfolio because I know that you have basis in schools for example?

Jonathan: Passivhaus can be applied to any type of building and people sometimes get confused by the word house, they think it's just domestic. In the English translation it is, in the German it actually means building and it applies to any type of building, so we're currently, we've done a number of schools as you say we've done three finished and certified Passivhaus schools but a fourth school currently Passivhaus school on site at the moment. We're also doing a major research building for the University of East Anglia, we've just got planning permission for a church to Passivhaus in Sheffield, we are currently designing an Archives and Records Office in Herefordshire to Passivhaus and we are doing quite a few individual houses and a major housing development of a hundred and fifty houses. In Germany people are doing fire-stations, hotels, hospitals, anything really.

Ben: Thinking about the project that you've got on creating a development where did you start on that at this, almost affordable housing cause that's the other thing about Passivhaus that people sometimes say oh it costs a bit more and you have a different view on that.

Jonathan: Yeah, I mean I guess our view on that has been framed by the history of all the buildings that we have done have always been, and this is long before doing Passivhaus, the high levels of sustainability we have achieved have all been within tight and standard budgets.

So for example we did the first BREEAM 'Excellent' primary school in the UK for Wolverhampton City Council with no extra budget again by keeping it simple and focusing on that. When we suggested to the same client that we should do Passivhaus they said we like that idea but you have got no more money so we had to do it for the same price. We did that by building in from first principles by keeping it, the form of the building simple, the section simple, the detailing simple, the window arrangement simple but again if you have seen them hopefully you would agree that they are not boring.

When it comes to the housing development you've just mentioned, I think housing is a much bigger challenge because the costs are much lower already. Housing developers build to a very very low price as you are aware but also to a low standard I think on the whole. When we've talked to developers, with the exception of one or two smaller scale developers who we've done some interesting work with, most bigger house developers aren't particularly interested in improving design quality nor sustainability because they can sell what they produce because there is little choice in the market. So we decided to go it alone and do our own development so we founded a new company in partnership with retired Swedish businessman who'd approached us because he had seen, when he moved to England, in his opinion how backward UK construction is. He just said well in Sweden we build houses in factories, why on earth do you build them brick by brick on site, and so the whole idea of Archihaus is from first principles to come up with a way of designing houses that are optimised from first principles to Passivhaus, to lay out the site so it is optimised from first principles to achieve Passivhaus and then to prefabricate those houses in a new house factory that plan to establish to do. Basically at every level we're trying, working very hard with a big focus on improving quality and achieving Passivhaus.

Ben: Again is that something that's perhaps in our minds a little bit that having it in a factory is not a good idea? Is it just something that perhaps we've got to get used to?

Jonathan: Yeah, I think most buildings are largely built on site in the UK but in Germany and Sweden it's a well established industry that houses are built, both developments and lot of one off houses, in factories and that leads to an amazing level of quality. I've visited a number of Swedish factories and was this week actually visiting factories in Germany. The attention to detail and the quality of construction is way, way in advance of anything I've seen in the UK so I think prefabrication in the UK psyche harks back to the sort of prefabs that were put up after the war as a quick solution. What we are talking about in terms of modern house factory production is something of a different order of quality than anything I've seen in the UK.

Ben: Maybe you could talk us through the housing development that you've got there. We're actually lucky enough that we are in a room that we've got these pictures on the wall which is detailing it. Has it all got the go-ahead now?

Jonathan: We submitted it for planning application. We don't expect it to get through the process of that for about three months. That's the time it takes. It went in last month and it will take about three months to go through.

We are based in rural Herefordshire where there is a big housing need but a big challenge in finding appropriate sites to build enough houses. People generally don't like new houses being built in their village and I totally understand why that might be. I think it is often the case that people are against it because what is on offer is high density suburban poor quality and not appropriate to a rural site and so what we set out to do was to see if we couldn't come up with a new approach that would not only be Passivhaus but also would be of higher quality in terms of its design of buildings and landscape, in particular to be appropriate to its rural setting.

So we started off by doing a study of typical Herefordshire vernacular architecture and the character of the Herefordshire landscape and set out to reinterpret that in a modern contemporary way. Instead of a suburban character site which most developers do with wide roads, kerbs, pavements, fences, parking spaces etcetera, etcetera which has a whole suburban feel to it, we have designed a layout which is of lower density with winding lanes

winding through a sort of landscape with hedgerows and swales and ditches and orchards so it's very much reflecting the character of the Herefordshire landscape. It will feel completely different to a normal housing development because of that and it's got generous areas of shared open space, allotments for areas of food growing etcetera.

Then the houses themselves, what we discovered which is quite interesting is the typical vernacular building in Herefordshire like the one we are sitting in here tends to be shallow in depth, wide in frontage with a roof running along the length. Most developer houses tend to be narrow in width deep in plan which means you get far less daylight and sunlight into the depth of the house whereas in the traditional vernacular houses they tend to be wider and got more light into them. When you do a Passivhaus analysis you are better off with a slightly wider house that gets more solar gain and better daylight so actually the traditional vernacular form and the Passivhaus optimised shape actually have a very strong synergy together which I also think in retrospect is not that surprising because old vernacular houses were built to maximise their relationship to the environment. They had small windows for cost and buildability but they wanted to get as much daylight in as possible so we were able to reflect that but reinterpret that in a modern way and come up with something which we think is of a scale and form and material character that is appropriate but modern, set in a rural landscape which is more appropriate.

Ben: I notice just towards the end there you said the word modern. Is that something again that we struggle with a bit in the UK, particularly when we have this vernacular which can seem very nice but I know having grown up in a village that you almost see the new modern thing and get scared by it a bit or it, it feels like it doesn't fit in. So this is very much something that's going to form part of this village and feel alive . . .

Jonathan: Yeah I think it'll fit in because it is of a form and scale that's appropriate but in terms of its internal character it has the ability to be quite open plan. If people want to they can obviously have separate rooms but it is designed because it is shallower and wider it can be more open plan more flexibly and in terms of the windows and the detailing it will have a crisp modern feel to it. I don't think people will be put off by that. I think there's quite a . . .

Whenever we have clients to actually work with as opposed to what your perception that comes through the house builders, when we work with self builders they like airy spaces, slightly higher ceilings,

more open plan feel, modern materials, modern detailing and I think programmes like Grand Designs people have actually, I think awareness has changed of design quality and I just don't think the housing developers have caught up with that yet.

Ben: Is there a situation where they are going to be caught out because you can't make these changes overnight? I do think you are right that people are coming to demand different things of their housing and with the internet and with shows like Grand Designs you can see what you could have now and it seems silly mimicking these styles from the past that aren't even really done that well anyway.

Jonathan: Yeah, I think so and I think there are some quite good examples of modern housing in urban situations which is much more contemporary and all the evidence is that they have sold and people like them. I think it's more the mass housing market in sub-suburban and rural areas where the quality issue has not really hit yet.

Interestingly earlier or last year the RIBA Future Homes Commission actually reported some very interesting findings that people liked the idea of a modern house but they tended not to buy them because what they saw in them was of poor architectural quality. So the things they like in a house are light airy spaces, high ceilings, you know, good sized windows. Now they see those in a Georgian or Victorian house and they don't see those in the new houses that they look at. So they'll buy an old house albeit it's cool and draughty and it's going to cost a fortune to heat because the architectural qualities there outweigh those sort of practical things.

My belief is that if we can combine the practical things of energy efficiency and lower running costs with good architectural quality then we are on to a winner. Now, although for us a hundred and fifty houses is quite an ambitious thing, it's a pinprick in terms of housing needs across the country. I would love to believe in the long term we could actually have an influence on changing the industry, but we'll see.

Ben: I think you are certainly taking a big step in that direction so I'm very excited to see how it goes on. Are you always with an eye on the future because to me this development is quite futuristic but are you always thinking what is the next step?

Jonathan: Yeah, I guess we are. I think throughout our nearly now thirty years of practice we have always been exploring new ways of doing things, not particularly for the sake of being innovative for the sake

of it, but because we are always striving to try and find more sustainable ways of building and constructing, ways to save energy, different materials that can be used to create more beautiful buildings. I think that we've just been driven by that and people have come to work for us because they like to, they are personally committed to sustainability and design quality and actually believe in the ability of design to do that so I guess it's been a restless quest and will continue.

I think in different ways we have always pushed the boundaries and in some ways led the industry. Twenty years ago we were slightly laughed at being on the hairy eco-fringe you know doing slightly strange things. Now I think you know we've gained a degree of respect for the way we've pioneered and led the industry. Yeah I hope we can continue doing that.

Ben: And some of these materials that you are talking about, what would you say are the most sustainable of them? Is it just going back to things like wood?

Jonathan: Yeah, I mean we've tried out lots of different materials over the years and obviously found some work really well and others have been more difficult and others are appropriate to certain situations. So we have used straw bale, we have used earth construction which in some places are beautiful things to do. In other places, for mass housing or schools, would be much harder and maybe less appropriate. I guess we've honed in on a fairly robust palette of what we're confident are renewable and sustainable materials. Yes we do use a lot of timber, we do use quite a bit of home grown timber. We use insulation made from recycled newspaper, we've got a range of mineral and organic paints and stains that we regularly use, floor finishes in lino and rubber, certain window specs for triple glazing and, have different performances so a whole set of materials and products that we've tried and tested and we know where they've come from and we are confident in their sustainability.

Ben: Do you try to avoid other technologies? I know this simplicity of form is great but I don't see any solar panels on the roofs here. Are you still under the impression that there will be infrastructure, it's about sorting out the houses to the best that they can be?

Jonathan: Yeah I think my belief is that buildings well designed are really good instruments of saving energy. I don't think they are particularly good generators of energy. They can be if you've got a large south facing roof, then maybe photovoltaics can be a good option, but many

buildings, and you see them all over the country now, with PVs perched in funny places sitting behind chimneys, facing east-west and sometimes even north, because people have managed to get a grant or have got a feed-in tariff and they'll get some return on it.

If the imperative is to save carbon across the whole world now then every panel we put up now should be in the most optimum position we can find to put it and I think in most cases perched on roofs is not that great for a start it generally won't get cleaned. So my belief is that we should be focusing on buildings designed to save energy and then looking at the most appropriate and efficient scales and places to generate renewable energy. I would much prefer to see solar arrays on the ground in fields, where you can clean them and maintain them and they are big enough to be properly looked after, so that you haven't got a separate inverter in five thousand houses that when it goes wrong the householder is probably not going to sort out as opposed to a properly run at a community scale or even at a regional scale and big wind turbines in the North Sea and not little ones perched in buildings which don't go round.

I always say it's, I compare energy to rubbish I always say it's good to recycle rubbish but it's much better not to create it in the first place. So with energy it's good to have renewable energy but let's first use less of it and then let's find the best scale and the right place to generate it renewably.

Ben: Well thank you very much for this interview. It's been very interesting and I certainly know that you guys are the ones to keep our eyes on. Jonathan, thank you.

Jonathan: Thank you very much, it's been very enjoyable.