

Episode 194

What are the hidden costs of building a house? with Paul Testa

The show notes: www.houseplanninghelp.com/194

Intro: Accurate budgeting is vital for a self-builder but there are unknowns in any house build project. Getting good advice from an expert is one way to mitigate the risks. Architect Paul Testa has a particular interest in low energy houses; he talked to us about how to predict the costs of a house build and shares his tips on limiting a self-build budget. I began by asking him how he starts thinking about costs with his clients.

Paul: We're not cost experts and we're not cost consultants, so we have to use quite broad brush techniques to look at costs and advise on cost. We start very broadly with a sort of £1500 a square metre rate for a new build bespoke architecture, so this is not your bog standard developer, specification and it's not really, really high end but it allows us scope to use materials as appropriate for the project. It allows us to design bespoke spaces and bespoke structures without worrying too much about the cost.

We have developed recently a cost calculator for that early stage build cost to allow us to be a little bit more precise than just that £1500, so it starts to allow us to feed in things like slope, which is something we deal with a lot in Sheffield and the implications of an increased specification and also the thing that's quite easy to forget is like external works. You say to a client "Well, £1500 a square metre. It's a 100 sq.m build, so £150,000." "Great". And then when the prices come back in you've resurfaced the driveway and you've put a patio in and various other things. The client goes "Oh, well, that's actually more than you said it was going to be." So it's trying to flag that up. You have to include for everything, so it's asking those questions early doors really about what level of specification and what level of works they want to do other than just the new build or the retrofit works as well. We have a retrofit rate in there as well.

Ben: For me, one of the surprises, when I didn't know anything about this, was that I thought you had this cost per square metre. Happy days! You were talking about your finished house. I think you've

alluded to that, but it's worth pointing this out that that is not really everything, is it? You've got fees as a major thing on top of that. Why is that not in the cost per square metre because surely that is part of it?

Paul: Because the amount of service that you might require from an architect or from an engineer or from any other consultants isn't normally quite so tied to the size of the project. It's more tied to the complexity of the project. You could have a project that is only valued to £30,000 construction cost and actually the amount of work that's involved in that might be no different to a project that's £100,000. So to tie fees to that square metre rate is very difficult to do.

Normally what we advise is there's another 30% on top of your construction cost for your fees, your planning fee, your building regulations fee and any other costs. Obviously that percentage will be greater, the smaller the cost of the build because not all of these things scale. A planning application for a small extension is exactly the same cost as a planning application for a big extension.

Ben: And we haven't mentioned land, which is again step one – you're not going to build your new house if you haven't got land. So again, that doesn't really get factored in and you've got to do this balancing act before you don't know whether you're going to need any unusual surveys. You're looking at as much information of your site as possible, but all these sorts of things. There are certain things that you'll have a rough idea of, but even architect's fees they vary a lot, don't they? As we got our quotes in, I was quite surprised they did vary.

Paul: Yes. You can't give clients a blanket 'you need this much money for survey' because it's dependent on the size of the site, the complexity of the site. It might be that we can do all of that measuring work and it doesn't add a huge amount to our fee or you might need to get a separate surveying firm to come in and the fees amongst them could vary quite hugely as well, depending on whether they see it as a one-day or a two-day or a three-day job.

So yes, trying to nail all those extras down is very difficult, but I think it's really important for us that we just raise the fact that they will exist, these costs, at an early stage and that you need to factor something in so that when the costs do arrive, you're not surprised and you've got some money set aside that will hopefully cover that.

Ben: And this is obviously something that you're trying to factor in at that buying land stage because if you overspend on your land, then it's

going to come out at the later project and things could go wrong. So utility cost is another one. How much do they tend to vary site to site?

Paul: We found gas to actually be quite consistent and not hugely expensive, but the electricity supply can vary hugely depending on how much work they deem is involved in making your connection. We've had quite big projects where the connection has been a few hundred pounds and then quite small projects where the connection's been thousands. Until you make that application to the utility company you just don't know because they're completely in control of that. You can't say, "Oh, I don't like your price" and go somewhere else. It's a captive market unfortunately and they can charge relatively what they want. It's a tricky one.

Ben: I've got a couple of other things on my list here, one being insurance. We obviously haven't started our build yet. I know you can get sometimes insurance upfront just for the land before any construction has happened, but what insurances might we have for our project or could that fall under the contractor who's taking control of the situation?

Paul: Most contractors won't have sufficient insurance for the whole project. They will have insurance to cover their liabilities, so public liability insurance, employers liability insurance. They'll have potentially insurance to cover all of their equipment on site, but it's unlikely that the building and potentially the materials that are yet to be put into the building are insured by their insurance. So you will definitely need insurance.

For a new build you will need to procure new insurance for the construction. For an existing building you will already have insurance, but it's very unlikely that will cover the demands of a renovation project and quite often they actually specifically exclude renovation within standard home owner insurance household policies. Some of them you can ring up and they'll say "Yeah, we can amend it and we're happy to cover you," and others will say, "No, you've got to go elsewhere." You might have to go to a self-build insurance or something similar.

Ben: Are there any other types of insurance that we might consider?

Paul: Your contractor is covering public liability and their employers liability. Your architect should definitely have professional indemnity insurance and also public liability insurance so that the implications of any design decisions in terms of their safety etc, are dealt with. It's the site and the buildings, they often call them an 'all risks'

insurance, but there's no other insurance that we'd normally recommend.

Ben: How does VAT fit into the equation? We're obviously talking about new build here, so we know we want to claim that back. We can't claim it back till the end. So how is that going to fit into the money we want to spend on our project?

Paul: It depends on your contractor actually. It's quite common that certainly the larger contractors will reclaim. They won't pass on the cost of the VAT to the client, so the client never sees that cost and the contractor just claims it as part of their quarterly VAT payments.

If you're buying elements direct either from a manufacturer or a supplier, so quite commonly clients will want to procure windows and doors, big bits of servicing kit, potentially a timber frame if they're building a timber frame building, those kind of large single ticket items to try and remove the contractor's overheads and profit from the equation. They might procure those direct and then they're going to have to maintain a certain chunk of money aside to cover that VAT cost until the end of the project.

So if your construction cost minus VAT is your absolute budget that you can borrow, you're going to have to think very carefully about how you go about procuring the project. Yes, it might be that you have to put all of that through the contractor, who hopefully is then willing to not pass on the VAT costs to you so that you don't have to in the short term find that money.

Ben: You were talking about that situation where we're almost at our limit. That naturally brings in contingency. What's your experience of clients? Are they good at having that proper contingency?

Paul: Yes and no. I think at the beginning of a project everybody has the best intentions to have contingency. Our advice is always to have contingency, but quite often you get to a point when your prices have come back and you think, "Oh, if we just had that little bit more we can do absolutely everything we want and we don't have to compromise on anything, or our value engineering can be really kept to a minimum." People really stretch themselves and go right up to that limit of both the construction budget and their contingency, and that can be quite dangerous.

It does depend. We try and minimise additional costs by ensuring that the correct investigations are done as early as possible so that you understand the ground that you're going to be digging into. You understand whether there are any existing buildings, is there any

asbestos? All those kind of things. But you're never going to be able to completely mitigate risk.

No two building projects are the same. Every construction project is kind of a prototype. It's not like product design where you refine and refine and refine the product until there are just no risks at all left. You're always dealing with the ground. You're dealing with weather. There are always going to be unknowns, so you've got to have something there to cover you, a minimum of 5% but more generously 10%.

If you've not spent your contingency you can have a nice party at the end or pay for those really nice finishes at the end that you otherwise might not have been able to afford. So you might say "Actually we're going to go for that beautiful oak floor. We were going to go for something cheaper, but we've got that little bit money left so we can do that now because our risks are dealt with." So yes, there's definitely something to be said for having a substantial contingency.

Ben: Managing those expectations, do you do that the whole way through the process, at the beginning try and keep them from going crazy or is it really when those tender documents and prices come back?

Paul: We try and do it throughout. We have limits as to what we can perceive in terms of cost. Obviously the bigger something is, the more expensive it will be and there are some materials that cost more than others. Complexity tends to cost more, so if you've got more fiddly junctions. But because we are interested in delivering energy efficient buildings as well we try and minimise that complexity from that standpoint anyway.

We have that early conversation about cost and about cost expectations, and we try, as we go through to – it might be just that we agree there's a square meterage that we're sticking with, and if the client starts pushing you to make the building bigger, you need to flag that up, that another five sq.m might not cost you £1500 a square metre, but it will cost you something.

So yes, we do try and manage that in the process but we're not always successful. Sometimes prices come back completely unexpected. We do try and do - certainly on the bigger jobs where there is more scope for value engineering – we will try and bring a quantity surveyor or an estimator in at roughly the planning stage. Some clients want to go straight to planning and don't want to worry too much about cost. So we might do it just after planning, but

ideally it's before planning so we can submit a set of drawings and an outline specification to a quantity surveyor. They can give a budget cost for the build. We can ensure that fits within our budget. If it doesn't, what do we need to do to change that? If that affects how the building sits on its site or the exact size or the materials, then we're able to deal with that before we submit for planning so that we don't have the impact of having to review our planning application either to make a non-material amendment or potentially to have to resubmit at a later date. Then hopefully that price is accurate enough that when we get our tender prices back, they're roughly commensurate with that price.

We don't always tender. It's not what we think is the best way of procuring a building. We like to collaborate with builders or contractors. We would ideally, if we've got an independent budget quotation, we would ideally work with a contractor, get a contractor we want to work with, that the client's happy to work with, to buy into achieving the building at that price. Then we work with them to ensure that the design and the specification, as it goes through detailed design, matches that budget and they give us that expertise then of being able to hopefully deliver certain elements of the build more cheaply without any loss in quality, appearance, performance and they will flag up to us where there are things that perhaps we might need to amend them to bring things in on budget. We find that a more preferable way of working.

We actually incentivise that in our fees and we charge less for a negotiated price with a contractor than we would do for dealing with a full tender process.

Ben: Does that mean you tend to use a smaller pool of builders?

Paul: Yes. We have a handful of builders that we work with more regularly. We still occasionally do tender processes and they can be very useful in the sense that they can expose us to builders that we've not worked with before, who we might actually end up having very positive experiences with. So that can be positive. Often a client will say "Well, I know this builder. We've worked with them before on another extension," or "they've done something for our friends and they were really impressed, so we'd like to use this builder." So our pool of builders will change.

Occasionally a builder that we've had confidence in before, they've changed the way they work and perhaps we might have less confidence in them. We might take people off our list, but then we tend to be in a position where we try and grow it so that we have a larger pool. The really good contractors are really difficult to get

hold of. We're booking some two years in advance at the moment, which can be disappointing for clients as well. That expectation of time can be equally as important as cost. They have a vision of when they might be in their new building or when their extension might be complete and to be told "Well, the contractor we really want to work with or that will do the very best job here, is not available for another year," can be quite hard. I think most clients come round to the fact that if they want the very best product, they want the very best people to do that.

Yes, that is a challenge. One of our biggest challenges actually, especially as we're delivering very high performance buildings quite often. Contractors who are already skilled or used to doing that or those that are willing to engage with that and that we are confident will take our advice on doing a good job, because it's very easy for a contractor to say "Yeah, yeah, we can do air tightness," and then when they don't do it very well, to not take that criticism very well and not rectify it to a degree that we'd be happy with. So yes, it's a constant struggle that unfortunately.

Ben: Is this a downside of going down the design and build process because we're going to tender and that's obviously one of the first things that you're going to ask them – "Are you available in the next couple of months?" Whereas with this, you've got to engage with that builder a bit and the process might take a while?

Paul: Yes. As I say, most builders that we work with, by their very nature they're busy because they're good. So yes, their availability might be quite some way down the line, but because we're engaging them much earlier in our process...

I'll give you an example. We've got a large extension retrofit in Sheffield that we are doing the detailed construction drawings and specification for now. We've already had a price back from a quantity surveyor that fits with our budget and we've already agreed an approximate start date with a contractor for next year. So we're able to take our time on those drawings, feed those back through to the contractor and we have that sort of buy in on budget, buy in on timescales. So by the time we're ready and the contractor's ready, everything's drawing together.

It doesn't always work that perfectly and tender processes can also have similar drawbacks. A tender process takes four to six weeks. You then have a process of reviewing the prices, potentially calling tenderers in for a conversation, maybe an interview. You might have some value engineering to do, and once you've gone through all of that process, the contractor's picked up another job that

pushes his availability another year down the line. So it is constant struggle and there are benefits and drawbacks to both routes.

Our biggest difficulty with tendering is that there's normally a wild card in there. By the nature of the number of contractors that we know are really good, we're always trying to find one or two others to make sufficient numbers to put together a tender package of people that are available at a particular time. As I say, that sometimes exposes us to really good contractors, but it quite often exposes to someone who's willing to be a lot cheaper than everyone else and it's very, very difficult for a client to ignore. Quite naturally if someone's 10, 20% cheaper than everyone else, it's really difficult to say "Oh well, I can just ignore that and go to someone that I know will do a really good job." You might find that the really cheap guy does an excellent job, but normally if it's too good to be true, it probably is, and it might mean that by the time you finish the job you've spent the same amount as everyone else would have charged you, but you've had to deal with a process of extras and you've had to be more aggressively cost controlling to deal with the way that they manage their project on site.

So yeah, that's the biggest drawback for us. If we could definitely be comparing apples with apples every time and we know that every single one of the tenderers is an excellent contractor and is likely to produce a similar result on site, that would be great. What we tend to find, if that's the case, is that they're only a matter of a few hundred quid in between them and then it comes down to which do you prefer? If that's the question, "which do you prefer?" then we could have avoided two or three contractors having to put a price together in the first place and just gone with the one and negotiated that cost.

So yes, it's a difficult process and we have to discuss the pros and cons with every client and give them as much information as we can to allow them to make that decision.

Ben: This is where I'm at the moment. We're out to tender at the moment, so I will watch with interest as they come back and we open up all of those projected figures. It's slightly nerve wracking. We'll see how it ends.

A couple more things and then we'll wrap up. Just going back to that land equation where it's land cost plus build cost plus 20 to 30% profit is less than or equal to the value of the finished house. When we say 'build cost,' do we really mean build cost there? We've talked about all these other things. Is 'build cost,' saying

everything – the landscaping, the contingency, the utility cost – all of these things that have come into our conversation today?

Paul: I would say so, yes. When we're talking with clients about build cost, we are often separating out the build cost of the building plus then landscaping and utilities and things. But if you're talking about the whole project, then yes I think build cost is all of that.

Ben: Normally you find that people say "Oh, how big is it going to be? 200 sq.m, let's do this at £1500 per square metre, or £2000 a square metre," and that's your figure. That's how I did it. Is that wrong then?

Paul: It depends on what your figure is. At £1500 a square metre I would say that it is just the building. If you've got extensive ground works, that's why we've added in our factoring of slope, so if you've got extensive work below the ground that could actually rise. It doesn't include landscaping. You potentially could have 1000m² of landscaping very easily, and that can't be included in a square metre rate for a 200 m² house. It would be impossible.

But if you were looking at £2000 a square metre, it's likely that it would encapsulate all of that. So it depends on the rate that you're dealing with. I'd be wary of thinking that it covers absolutely everything because there's just too many variables outside that.

The cost calculator we've put together takes the building cost as one element with a couple of other factors that you kind of tweak. We then look at bathrooms and kitchens as separate elements with levels of specification and then landscaping on top of that, or external works on top of that.

Ben: Let's finish up today with an example, because I know, is it a couple of years ago that you entered the 'Self-build on a Shoestring Project?'

Paul: Yes. This is NaCSBA – so it's National Self-Build and Custom Build Association. Since 2013 they've run an annual competition called 'Self-build on a Shoestring' with slightly different briefs each time. We have entered a number of them but the one we have discussed in the past and the one that you're looking at, is our entry from the first year, so 2013. They asked for a family home, a detached family home, on a very simple flat plot, for £50,000 or less. That £50,000 didn't include things like utility connections. It was assumed that they were already in place, but it did include all materials and all specialist labour.

The way that we approached it was that we said, “Well, we’re going to make a simple construction that can be built by the average self-builder, but we will allow where necessary – so we have a MVHR system in the project – so you’ll need that commissioned. We have electricians in the project. You’ll need to get those certified. Likewise with your gas installation.” So we allowed some specialist bits of input but ultimately it’s a materials only cost. There’s a bit of money in there for a digger for a couple of weeks and some scaffolding, but other than that it’s the cost of materials.

We designed a 70 m² family home for £45,000 ish, from what I remember, and that was designed to passive house. So we put that through the passive house planning package and it was a very easy site in that regard. We delivered a building that achieved passive house for less than 50,000 and would be a compact but very comfortable single family home.

Ben: Finally then, just looking at this example - we’ll include some details in the show notes – what tips do you have for someone that’s thinking, “Well, I want to keep my build costs to £50,000?” What was in that mentality that meant you knew by and large that you were going to fall in under that?

Paul: Well, I think the first thing to say, as you’ve said, because it’s a materials only cost, I think if you’ve got a low budget you have to be willing to input something yourself whether that’s physical graft or whether that’s project management. But yes, you can make significant savings by removing a main contractor from the project. It does increase your risk to a degree, but if you’ve got a manageable construction method then that risk doesn’t need to be too great.

In terms of the main design, as you say we made something that was legible in terms of its construction technology. It was a very simple softwood timber frame and then we tried to minimise the number of materials or conversely maximise the function of each of the bits of the construction. We used oriented strand board – OSB or sterling board as our airtight layer. That’s the layer that’s the barrier that’s stopping air leakage from the building, but we also left that exposed as our internal wall linings and it was also a structural element, so it was stopping the building twisting. So it was a racking board as well. We had three functions from one material, whereas quite often you’ll have a racking board in there. You’ll have an airtightness membrane or a vapour control layer and then you’ll have plasterboard with skim and paint.

So we tried to think “Right, what is this material doing? How can we maximise what it’s doing?” And we found that the building, as proposed, is clad in fibre cement slates and timber cladding. The timber cladding was hugely more expensive than the slates, so there would have been a greater or a reduced cost had we gone all slates, or you could choose even simpler and cheaper materials. Generally the larger the format of the materials, so the bigger the sheet of it, generally the cheaper it is because the production costs for that one item are lower. But also your installation costs, especially if you’re paying someone else to do it, they’re covering a much larger area in one hit than if they’re putting lots of small tiles and also the more systemised something is...

So at the moment we’ve got a project on site which has got cedar shingles on the roof, which are a beautiful product. They’re not hugely expensive on their own, but because every cedar shingle is different there’s an element of craftsmanship that is required to arrange those on the roof so you get the very best protection from the weather. Whereas if you’ve got an interlocking concrete tile, it’s a slightly cheaper product but also you know exactly where you’re putting one after the other and there’s less thought, so it’s quicker and therefore cheaper to install.

Ben: Paul, you’ve brought a lot of value to the podcast. Thank you, sir.

Paul. No problem.