

HPH332

Ben Adam-Smith 00:00

This is House Planning Help episode 332. Hello, I'm Ben Adam-Smith, and this is the podcast for you if you're interested in self-build or retrofit. I'm exploring what houses we should be building in the 21st century and trying to break down the major roadblocks that may get in our way.

Ben Adam-Smith 00:17

One award ceremony that never lets us down is the UK Passivhaus Awards. Yes, it's back for another year. And the reason I say that is because even to enter you need performance monitoring data. So that is the difference. Whereas a lot of other awards ceremonies pretty much are going by looks, aren't they. This is saying Well, are we delivering what we really set out to deliver in the first place. So it's a competition that we're following. And also, we'll put a link in the show notes just so you can find it, digging into the archive. And we've tried to on this podcast, whenever there's been a house build project that's on our turf as well, include it in the podcast too, just so you can find out all the data. But that's a great thing on the Passivhaus Trust website, they've got all the fact files that are well worth just going and, if you have a lazy Sunday morning, that sort of thing, check out the videos, have a look at the fact files, and I'm sure you'll find them very useful.

Ben Adam-Smith 00:17

Coming up in this session, my guest is Tom Gwilliam, from Etude, and we're going to be looking at how accurate our Energy Performance Certificate is (EPCs). And this was inspired a little while ago, we did an episode called Should we celebrate architecture that performs poorly? But in that we were relying on EPCs. And even at the time, we noted, yeah, this is not great. So today, we're going to dig into why.

Ben Adam-Smith 01:37

So let's get to our featured interview with Tom Gwilliam, sustainability consultant at Etude. And he is my guest today helping us delve into this world of Energy Performance Certificates. So we've known that there were problems for some time. And it's really my hope today that we can look under the hood, flag up a few resources, people who've gone in depth in the research on this. So there'll be further reading if you so choose and are technically minded, but I'm hoping this will be a redundant episode at some point. So you can skip this one when we confine it to history. But knowing how slowly things move we'll make it for now. It'll probably be relevant for decades to come, who knows. So I started by asking Tom to tell me a little bit about his background.

Tom Gwilliam 02:23

I'm a structural engineer, trained at Edinburgh University. And then when I left university, there wasn't many jobs around in structural engineering, so I eventually fell into the world of SAP assessments, which we'll come on to talk a little bit about. And in the SAP world, I started to learn about other parts of energy assessment, so about PHPP and about Passivhaus, and eventually became a Passivhaus designer. And then, as with many things in the sustainability world, well, there's lots of other areas of

focus. So I started to look at whole life carbon analysis and other wider areas of carbon analysis. And then essentially, that's where I am today. So we, we look at building performance, but we also look at carbon emissions across buildings as a whole and how we push them down and deal with them.

Ben Adam-Smith 03:06

We're going to talk about Energy Performance Certificates today. So let's start with a simple one: what are they, right this minute?

Tom Gwilliam 03:15

So an Energy Performance Certificate or an EPC is something that you get when you need to sell or rent a home. They're a legal requirement at that stage. They're essentially trying to give you a rating of how energy efficient your home is, or how much it might cost you to run your home. Everyone's probably seen one at some point; they look very similar to what you get on your fridge. They give you a rating between A and G, as well as a number between one and 100. Alongside that, they give you a bunch of wordy advice. So if you look down the certificate, there's a bit more information about what you might do with your home, or how your home is performing at the moment. But the main output is the number, or the grade, or the rating.

Ben Adam-Smith 03:54

Who is it who creates these? So if I want one for my house, where do I go?

Tom Gwilliam 03:59

So you'd probably go on Google and you say, Well, can I have an EPC, please, and you'll get an energy assessor. So someone who's trained as a domestic energy assessor or an on construction domestic energy assessor. And they will do a SAP assessment or an RdSAP assessment, which is Reduced SAP assessment, to work out the value of your home. And that's a computer model. So they'll look on their computer, put in some information about your home, and then the model will spit out a certificate at the end of the day.

Ben Adam-Smith 04:27

Since we're talking about accuracy today, will they all come up with the same results? If I went to five different people for my house, would they all come up with the same number and the same letter grading?

Tom Gwilliam 04:39

Almost certainly not! The main problem we have with EPCs in this country is there is no consistency at all. And that is down to several reasons that we will probably come on to talk a little more about, but one of the main reasons is the fact that you're relying on a person to interpret a physical characteristic of a building. They may measure things in different ways and that's probably a little bit more consistent in terms of, there's only one dimension between two walls in theory. But people can measure things wrong.

Ben Adam-Smith 05:06

Wow, lots of questions I could come up off the back of that with. I think I'll stick to just digging into some of the methodology then. Should we start with SAP? Is that the logical place?

Tom Gwilliam 05:06

But there's other things that are left down to the interpretation of the assessor, that's quite important. So they have to make a judgment on how old a building is. If they're doing an assessment on an existing building, they often have to make a guess on what the building is made of, because they can't see inside the walls, and they don't have the time or money to do that. So a lot of their work is guessing, being as quick as they can, and then trying to come up with a rough answer. And because they're not necessarily moderated heavily as an industry, and they're paid quite poorly as an industry as well, and there's pressure from house builders at government level not to increase the cost of EPCs, then we do get this disparity between EPCs produced. And there's proven evidence that if you get an assessor to go, I mean, one of the clearest ways of doing it is in fact to get a SAP or a new EPC produced for a new build, then send out a RdSAP assessor to do an assessment the next day. They're likely to come up with a completely different result, and often put the building a lot lower in the rating system rather than when it's a new build.

Tom Gwilliam 06:18

Yeah, so SAP is the first part. The Standard Assessment Procedure, as it stands for, SAP comes out of energy models from the 80s created in Milton Keynes, where they started to model the new homes that were being produced there. Back then it was called BREDEM, and then it evolved into SAP.

Tom Gwilliam 06:35

So SAP is a way of measuring within a building the kind of heat loss, the domestic hot water usage, energy associated with pumps and fans, and the energy associated with lighting. It also has a little bit of a guess at what people might use for appliances, and the unregulated energy, as we call it. Regulated energy is the stuff that is controlled by the building itself in some ways, and unregulated is what is dependent on the occupants. It's a bit of a weird categorisation, but it's there.

Tom Gwilliam 07:06

So Standard Assessment Procedure, or SAP, tries to put some standardised assumptions around how a building might operate. So it says, if you heat this home between these hours every day, and it sits in this climate, then we would expect the heating demand for that building to be X. And then if you put this many people in that building, then we expect the domestic hot water usage to be Y, and it gives you all these kinds of outputs. And then at the end of the day, you'd get an energy use associated with that building. So it all boils down to one number, which will be a kilowatt hours of energy use, total energy use. And then on top of that, then it superimposes carbon emissions, primary energy, these other kind of metrics that we see in building regulations. But the number there is then used to create the EPC as well.

Tom Gwilliam 07:54

So an EPC, the change between SAP and EPC, is that EPC is a measure of the cost of operating that building. So essentially, it takes that energy number, it says, These are the costs associated with buying energy at that level, and then it puts a cost on it for the resident. But as you can imagine, that

cost number is all associated with all the assumptions you made further up the calculation. So carrying out those calculations in a logical way that produces a decent result is important to get the final number to the right kind of level.

Ben Adam-Smith 08:25

We're obviously in an era where we should be able to do away with a lot of these assumptions now. So how would we tackle this if we wanted to make them better? Because I quite liked that idea of bands A to G and the number out of 100. But I know plenty of people who looked like they'd game the system and they always get an A for various reasons, putting solar panels on or what have you.

Tom Gwilliam 08:49

Yeah. So it kind of differs depending on what we're talking about. So we do, we need to talk about things in separate ways. So RdSAP, or when you do it on an existing building, is a very different way of carrying out the energy assessment compared to a new SAP. If we're talking about new buildings, it's easier to game the system in some ways, because we don't have, in the same way that Passivhaus does, we don't have that 'as built' check. People working as SAP assessors don't get paid a huge amount of money again. And they have to take what the developer says, or what the people on site say as kind of verbatim. And when you have that disconnect between what's happening in real life again, and someone sitting behind a desk trying to work out how a building is going to perform, there's a big incentive for developers to bend the truth and be slightly unrealistic with what they're saying.

Tom Gwilliam 09:36

So there is a problem with the industry in terms of the SAP assessors don't have enough on site presence. They don't have the level of understanding of how a building is actually going to perform in reality because they don't see all the detail, and they have to simplify things. So they make assumptions around wall U-values for example, or wall thermal performance. That might change throughout a building where you have pinch points as different parts of the structure passing through it. Within a SAP, it's all simplified into one number generally, you know, they just take a general assumption for that.

Ben Adam-Smith 10:05

Can we zoom in on some of these assumptions then? So one of them you've just mentioned, what would be the others, and can you give us some examples?

Tom Gwilliam 10:12

Yeah, so like, there's general things. So thermal bridging is a big one. We know in like new build properties, thermal bridging is a big source of heat loss. And within SAP, there's categories for what thermal bridges there are on a building, but they don't cover everything. And when you're working off plans, it's very hard to have a 3D understanding of the building. So again, if you're not going to site and seeing, oh okay, well, they installed a steel beam through this part of the building, then you just don't pick up on those things. So a lot of them get lost or just missed out. And there's no way of quality checking that process because again, there's no one overseeing the SAP assessor. You know in Passivhaus, we have two people carrying out the Passivhaus system, we have the designer, and we

have a certifier. So we have this peer review process going on all the time, which makes it a better quality process. Whereas in SAP, there isn't that level of oversight.

Tom Gwilliam 11:01

So thermal bridging is one kind of big issue. I mean, there are lots of assumptions that go into heating system performance. So if we talk about heat pumps and boilers, especially heat pumps, where there's a lot of nuances in the technology. So there's things that make heat pumps work really well and really efficiently, and there's reasons why they don't perform well in other situations. And SAP doesn't require that level of detail when you create the assessment. It doesn't need to know a huge amount about the system. It doesn't ask you to provide a lot of information about the system. And therefore, they can only make a very simplified judgment on how that system is going to perform. And part of the change if we are shifting to low carbon buildings is that we need to understand how this is informed. Because we need to get higher COPs (Coefficient of Performance) in heat pumps and that requires us designing them better. And if developers can see that reflected in their SAP assessment, they need to have that incentive at building regulations level, because SAP assessments are used for building regulations as well as EPCs. So whenever you complete a new build, you will need to issue your EPC certificate, but you also need to issue Part L certificates, and they all come from the same place, from SAP. So for that incentive to work, then you need to be able to have enough detail within the SAP assessment to reflect the good things that you're doing.

Ben Adam-Smith 12:16

Yeah, it's interesting. I know, for example, the rental market are coming to demand a certain level EPC by a certain date. And you just think that's not fair. That's not realistic, I'll maybe I'll keep on shopping for my SAP assessor until I get what I want.

Tom Gwilliam 12:35

Yeah, I mean, one of the issues with SAP at the moment is that it is used to drive policy decisions at the very top. So as you said, EPC ratings are required for rental properties. There's an aspiration for every property in the UK to be at least EPC C by 2035. And part of the problem here is that there's some, plenty of studies that show that the EPC rating you get does not correlate well with the energy use of a building. So if we look at a chart, for example, on the y axis, we look at energy use, and on the x axis, we have the EPC category. We would expect as we move from A to G, that the energy use would increase alongside that. But in general, there isn't much change.

Tom Gwilliam 13:18

And that's a problem at a stock level. Because if we're incentivising retrofit through the EPC categories, so if we're trying to say that everything needs to be a C by 2035, and that materially means that energy use isn't going to change much in buildings, then we have an issue, because we're going to have still high energy homes and buildings in general being operated, and we'll be at 2035 and it's going to be too late by that point. So we've got an incentivisation issue because we don't understand or we don't have a strong hold on really how to improve buildings through the EPC process at the moment - because they don't reflect reality.

Tom Gwilliam 13:18

So EPC A and B are not too bad. You know, they're kind of roughly in line with the energy use that are metered in those buildings. But when we started to get to C and beyond, C to G, then the energy use that the EPC expects to see increases quite rapidly. But the energy use actually that we meter from buildings doesn't change very much. And that means that we've got a lot of categories that cover not much change in average performance of buildings. And so when we're trying to make policy decisions like MEES (domestic Minimum Energy Efficiency Standard), like you're referring to where the rental market is asked to shift from one category to another in a certain period of time. And we can see that there's very little difference between, as an example, an EPC E and an EPC C. If you shift that property from an E to a C, potentially there might be zero change, or very little change in its actual energy use at the end of the day in its metered energy use.

Ben Adam-Smith 14:54

What could we therefore do just speaking of the SAP system at this stage? How could it be improved?

Tom Gwilliam 15:02

When we talk about Passivhaus and PHPP again, and I'll keep coming back to it because there is a clear link between in-use performance and designed on-paper performance. Essentially, it comes down to being quite detailed in how you assess the building. And again, like having this understanding of what is built on site and making sure that's reflected in the calculation.

Tom Gwilliam 15:23

So, ways to improve that would be, like I said, like heat pumps are a really good example. You break that system down into more component parts, you try and understand it better, you reflect that in the calculation, and you make sure that when that building is constructed, that you have evidence to tick off those boxes. So it's quite a boring way, you know, like, it's a tick box exercise in some ways. And the government needs to give SAP assessors a bit more... Well, they need to not bow to house builders in some respects and say that the SAP assessment needs to be delivered for this cost, which is like under 100 quid, you know, it's not much. So that's one issue. And then they need to give the industry the impetus to try and increase as-built checks. So, at the moment, there is no requirement for the SAP assessor to go to site at the end of construction. Like, just adding that as a requirement would make a big difference, because they'd be able to see what's going in, they'd have a better understanding of construction. It's a training in its own, getting that SAP assessor out on site and seeing buildings. So, just trying to improve that overall knowledge within the industry would help a lot.

Ben Adam-Smith 16:29

So, a couple of things here. First thought is just on, is this a little bit like reinventing the wheel, that Passivhaus exists as this quality assurance process - could we just be adopting that? Is that one? Isn't that one simple solution? I know that won't happen because it never, logical things don't happen. But is that the sort of thing?

Tom Gwilliam 16:47

Yeah, I mean, that's what we would advocate for as a group of people, and what we've advocated for years. It seems pretty obvious to us that there's a system in place that works really well. It's proven over many years, is open source, fundamentally.

Ben Adam-Smith 17:02

Yeah.

Tom Gwilliam 17:02

You can see everything that goes into it and see how it comes out. And yet, yeah, there's still this need to over complexify it or create...

Ben Adam-Smith 17:13

Own it, I think. They want to own the system or the way or have come up with... Yeah, okay. So we'll put that to one side, because we can't change that. The other thing I was thinking is that you mentioned about testing. Now, this is something that has changed a lot over the years. And we were just looking at a few different tests that you can run on buildings before we started recording this. So is that feasible, or does it still take up too much time, cost too much money? But if you could do an as-built test, building performance evaluation, there's no getting away from that. That, to me is the ultimate.

Tom Gwilliam 17:51

Yeah. So I mean, there needs to be some kind of shift here. Because as you said, like there's, there's testing, like right up there, that's quite intense. It is a costly thing to do, but it's the kind of thing that the market needs to do more of, to make it cheaper. And then at the moment, if we think of what an RdSAP is, it is very basic level, someone walking around the house taking their best guess.

Tom Gwilliam 18:13

So a good example of this, and why it's important to retrofit, is that if you were to have installed loft insulation in your home, and it was a 19, pre 1960s property, that RdSAP assessor does not need to look into your loft and see there's loft insulation in there. It's not part of their requirements. They could just say, this is a pre 1960s building. And that's enough for the SAP assessment to be completed. Then we've got an issue in this country, because that means that the assessments that we're doing to understand how our building stock are performing now, and what retrofit needs are required, does not necessarily reflect what's been installed in the building subsequently. We need to create an RdSAP process, or a retrofit assessment process and, you know, retrofit assessments are coming on with PAS2035, and a better understanding of the retrofit process. But we need to be able to do the stock surveys at a certain level that give us a better understanding of the energy performance of the building, and not accept RdSAP as a minimum requirement. Because that's what they are at the moment.

Ben Adam-Smith 19:19

Another part of this for me is finished houses and their value. And, as someone who built a Passivhaus and made sure I got certification, I've done that, because I believe that that's got to be one way at least of telling the quality of a building. I still think the post-occupancy evaluation is the best way of if you're going to buy something. But it certainly made me think if I'm ever going to invest money in a building again, I want to know exactly what I'm getting, but I don't think many people go down this route. So is there something to say on this, on marrying up energy performance, the health of the building, all of these things with cost and value and what it's really worth?

Tom Gwilliam 20:06

Yeah, so, I mean, an EPC is a pretty dry certificate to get, at the end of the day. It doesn't tell you a huge amount about the property. I think people look at them and they think people will often think that this is reality. And that's part of the despair that people have with the certificate process is that it tells them that their building is going to cost X amount of pounds a year to run. And it's quite often obviously nothing near that. And then it tries to tell them how they might improve it. And often those improvements are pretty out of date, or not necessarily in line with what we see as good quality, sustainable buildings. But you're right, I mean, there's nothing in there about the indoor air quality of your building or other kinds of sustainability metrics that are important to people.

Tom Gwilliam 20:47

And, again, you know, Passivhaus is good because it creates a good quality building at the end of the day, which is pleasant to be in. People want to live in Passivhauses because of how they feel. We don't have that kind of way of telling the difference from an EPC of how good a building is going to be.

Tom Gwilliam 21:02

And most modern buildings, there's a slight issue, I suppose, in terms of the way that the rating system works at the moment, is that if we get a lot of new builds coming out at A and B, and that's a reasonable reflection of their rough energy cost, it doesn't give you much to pick and choose between the new builds. So if you were to look at an EPC of a rated A building and another EPC, A rated building, would you really be able to tell how good quality that building is? Probably not. Because it doesn't give you enough information about what's gone into the building. It doesn't tell you things like the ventilation system, like all the things that we think are important about low energy buildings, it doesn't necessarily describe those in detail. And you would have to request that stuff if you really wanted to, from the developer to try and learn that. And most people will not do that. They will take the EPC rating at face value. So yeah, I completely agree that there's like a need for more information about how our buildings are going to be and how we would live in them. But it's just, there's no impetus on anyone to provide that at the moment.

Ben Adam-Smith 22:00

Now, maybe you could tell me a little bit about some of the research that you did. And you also mentioned to me, UCL. So can you describe some of the things that have been going on?

Tom Gwilliam 22:10

Yeah, so I mean, in Etude, we did a little research project a while ago, where we looked at EPCs versus metered energy use. So there's studies across the country where people are metering energy use in buildings at quite a scale. So, essentially what's in the meter. And then if you compare that against EPC ratings, as I kind of described earlier on, you don't really get the trends that you expect to see. So you don't see energy use dropping off, particularly as you get towards the higher rated EPC. So amongst the Bs and the Cs.

Tom Gwilliam 22:42

But if you're interested at all in the difference between EPCs and measured energy use, just look at what UCL Energy Institute are doing. There's a great team there. And they've actually just published a

paper, where they looked at pretty much all of their buildings that they'd been monitoring over a large period of time. They compared it against the EPC data, and they tried to find reasons. You know, they isolated certain things to make sure that they weren't skewing the data in certain ways. You know, they eliminated particular heating systems to try and get a real stock analysis, what's at the heart of the disconnect between EPC ratings and energy use in actual buildings. And they came to several conclusions. But it comes back to what we said before, you know, it's, again, it's having problems with the assumptions in the SAP assessment, that are kind of generic and outdated in some ways.

Tom Gwilliam 23:30

It's quite important to note that the SAP assessment relies on a couple of really important figures that are just one formula. So one of them is occupancy. Another kind of really important one is domestic hot water usage, which is connected to occupancy in some ways. So these formulas that drive the SAP assessment, are trying to create a one size fits all for how homeowners might use their buildings. Which is fine, because fundamentally an EPC is mostly there as a stock analysis tool. But if you actually look at where those formulas are derived from, they don't get changed. You know, they've been locked into the SAP assessment for years and years. People have noted that there's an issue with them. But there's no, there's no process within SAP for it to be regularly updated with knowledge or information. It's quite a like, slow process and revisions of SAP happened, historically have only happened every kind of five or six years. And then whenever it happens, it needs to be consulted upon so everything's quite slow. And it doesn't reflect how buildings perform today as a result of it, because currently we're using SAP10, which is still based on information from 20 or 30 years ago.

Ben Adam-Smith 24:16

Are they getting better and better though? If it is a big gap in between, can we see this going to improve a lot?

Tom Gwilliam 24:48

Yeah, so I think we're expecting to see quite a lot of change in the near future. There's rumours in the industry about consultation on a new version of SAP coming within the next year, and we know that people understand there's an issue with SAP. The government are aware of issues with SAP. They want to try and I think make that change. We don't know what that's going to look like yet. But I think we can expect an overhaul of the process within the next few years. And this comes into line with the Future Homes Standard, which is obviously a big change that's expected in 2025. And it's expected that that will probably coincide with a change in how SAP assessments are done. And once we change SAP obviously, then we change EPCs and how they're generated. How the government will reconcile the difference between existing EPCs that are in place, and then the future EPC system that might be completely different, is unknown. But there is going to be a need, you would expect, for people to probably revisit their EPCs. You'd hope, but who knows.

Ben Adam-Smith 25:48

What happened last time round? So when it was five years or so ago, was the same problem there?

Tom Gwilliam 25:55

There was meant to be the Zero Homes 2016 standard. Everyone was kind of moving towards that then that got stripped out. As a result then I think SAP ground to a halt, and no one really knew what to do. And so in between 2012 and 2018/19, there wasn't much going on, because no one really knew where it was heading in terms of policy development. And then SAP10 has come out and there is changes within it. But we're talking about tweaks to the system, we're not talking about much change in general.

Tom Gwilliam 26:25

I mean, all this comes from government pressure. So if they want to change, then they'll pay for a change, and they'll get the SAP system revisited. And that wasn't needed as part of SAP10. SAP10 was a, a plaster over the cracks as such, to try and fix small errors here and there, and also make it a bit more modern in the way that SAP assessments are carried out. But yeah, I mean, the development of SAP over the last 20 years is slow, doesn't reflect modern buildings. And as a result, we would hope some change pretty soon.

Ben Adam-Smith 26:59

Is there any advice for particularly people buying buildings? What would you suggest to them if they can't look at the EPC with confidence?

Tom Gwilliam 27:10

That's a good point. I mean, it's difficult to know what to say exactly. I would say if you can, I would try and get hold of the SAP assessment, the energy assessment that sits behind that EPC. If you speak to your developer, or whoever you're buying the house from, try and get that information, then you can at least try and sense check what's going into it.

Ben Adam-Smith 27:29

So what are the useful bits of it then? What could help you?

Tom Gwilliam 27:32

Well, you could look at some of the assumptions that go in, so you could look at thermal. I mean, you'd have to have a bit of knowledge to do this. Obviously, this is the problem. So it's about trying to inform yourself with what is required in the SAP assessment. But if we talk about thermal bridging, for example, one big issue with thermal bridges, which is starting to work its way out of the system, is that a default value used to be used. So in a default value, they just used to put in one number. And that's essentially because they didn't have enough money or time to actually assess the thermal bridges properly. So you could pick up on issues like that, where someone has assumed something as a backstop, I suppose. And you could try and work out if that's a fair assumption for your kind of building. You could ask on forums, if you think that is a suitable way of, of measuring thermal bridging as an example.

Tom Gwilliam 28:17

Another thing you can dig into is looking at the heating system. As I said before, the heating system's really important, and the control strategy that's around it. So SAP has quite a simple way of reflecting controls within it. But quite often it gets, if you look at a SAP assessment it's just a drop down box. So

you say this type of control is there. And quite often SAP assessors get it wrong. Like they'll pick the wrong drop down, or they won't really understand how the system works. They might not know what a weather compensator is, or they might not know it's installed on the building. So having, knowing like those tick boxes, where they've ticked for the heating system, and just working through and making sure is that actually what's in my building, is quite an important thing.

Tom Gwilliam 28:56

Ventilation as well. You know, ventilation systems are often not seen on the plans, or the SAP assessor doesn't get enough information about them. So just making sure that they've entered that correctly. And once you've picked up on all these little things, and then also looking at what the SAP assessment assumes for the occupancy of the building, because that's the real important factor that drives a lot of energy use in the latest SAP assessments, you can see if it's related to actually how many people are going to live in the building. If it's not related, then it's likely that your energy use is going to be way off what it actually is.

Tom Gwilliam 29:25

But once you start to pick up on all those things, then you could try and work out whether, essentially, the EPC rating, or the numbers coming out of the SAP assessment, are actually going to be in any way close to what you're expecting to see in the building. If they're not, then it's up to you whether you appoint someone else to look at it. Do your own simplified energy model. I mean, if you're this way inclined then using PHPP or using an open source version of SAP is available to you, you could try and do it yourself. I'm not saying you should do that, but that is an option open to you.

Ben Adam-Smith 29:57

Well my general impression in the Passivhaus community is that they just get this box ticked. It's not even looked at for information much. And, of course, you've got all the quality assurance of Passivhaus. But it's interesting how it's seen, how that crosses the low energy world, and what is really going on.

Tom Gwilliam 30:16

Yeah, exactly. I mean, when you have a PHPP, up against a SAP, and we do this quite a lot, just because it's, well, a) you will always need a SAP assessment because of building regulations. The projects we work on have PHPPs and SAP, and we can compare the two. But also, it's quite informative for when we work for local authorities, for example, because they want to understand if they're looking at the stock analysis from SAP, how different is it from reality.

Tom Gwilliam 30:41

So we've actually worked with local authorities recently, to help them implement policies around low energy buildings. So what they've tried to say is they've said in policy, we want to deliver buildings that have typically 35 kilowatt hours per square metre of total energy use. But they don't have the policy power to say that someone has to do a PHPP to do that. So what we've done for them is try and work out a way of fudging the SAP number, converting it to a more realistic number that then allows them to calculate an energy use intensity for that building, and then measure it against their policy target.

Tom Gwilliam 31:20

Now, we're always limited by what information goes into the SAP assessment. But we know how to correct for certain things within the SAP assessment, because it gets things like appliance use wrong, it gets things like domestic hot water use wrong. It gets MVHR and MEV completely the wrong way around. So we know there's errors within the SAP assessment that we can correct. We're still limited by the inputs, but there's changes we can make. So I mean, that kind of conversion tool would be an option, I suppose for someone who wanted to see if they could change the SAP assessment in the future.

Ben Adam-Smith 31:52

Is there anything else in this conversation that you think is worth mentioning? Or that I haven't asked you a question about?

Tom Gwilliam 32:00

So from a retrofit policy perspective, I think that is the key thing to remember here for SAP. We're using EPC ratings daily to drive improvement to our existing building stock. And if that is the main policy driver, then if we're getting our EPC ratings wrong, then we're in a real problem. So fundamentally, we need to do something about RdSAP especially, to make sure that the ratings we're getting are more in line with what is expected for buildings. But also, importantly, we need to make sure that retrofit assessors, well, RdSAP assessors are going into buildings, and fairly understanding both the age of the building, the build up of the building, and also where retrofit measures have already been put in place, so that we know that the improvements being made are actually going to make a material difference.

Ben Adam-Smith 32:50

Let's just rewind to the very beginning then. And I wanted this podcast to be about EPCs and why we've just got to be careful that they're not reflective of the energy performance of a building. So if someone has heard our conversation for the last half an hour, I mean, I think it's quite convincing. But is there any other element of convincing we need to do, or resources we need to mention?

Tom Gwilliam 33:22

Well, I think one important fact that kind of underlies the whole issue, is that if you were to carry out an EPC in Cornwall on a building, and then you use exactly the same building and carried out that EPC in Durham, you'd get the same EPC rating. And that completely undermines the entire EPC process fundamentally, because we know that the space heating demand between those two buildings is going to be very, very different. You have to just take everything on the EPC with a pinch of salt, bear in mind that it is there as a stock level averaging assessment. And it's unfortunately presented in a way that makes you think that it's about your home. And it isn't that.

Ben Adam-Smith 34:04

Tom, thank you very much.

Tom Gwilliam 34:05

Cool. Thank you very much.

Ben Adam-Smith 34:07

Head online to take a look at the show notes that accompany this session. You'll find them at houseplanninghelp.com/332. You can review the main information. We always have a summary for you. You can also check out the comments at the bottom of the show notes or we'll link you through to social media. There'll be links to all of the information that we've mentioned, if you want to dig deeper into this topic. And of course to Etude, thank you so much to Tom. Appreciate all of that information today. Once again, houseplanninghelp.com/332.

Ben Adam-Smith 34:44

My call to action is to check out The Hub. And this is where we take things further. It's our membership community and we've just had another live training session. This one was self-builder Graeme Deas. And it was an interesting session actually because whenever cost comes into play, and costs have gone crazy at the moment, how can you make your budget work hard? And one of those ways is keeping things simple, and also doing a lot of the work yourself. So his house not too big, quite an efficient form, still got some lofty goals to get to Passivhaus standard, but doing the fit out himself with his partner, Stuart. And it did take them a while. I think in total about three years, and probably they would change things if they did it again. But, at the end of it all, a project that has not cost that much if you put it side by side with one that the contractor had taken it the whole way through, you've definitely saved a lot of money. So some really useful tips in there. And again, always fascinating when people do go down the true self build route. They often find themselves on YouTube a lot, trying to find out how they do that little job that they don't know how to do. Always upskilling.

Ben Adam-Smith 35:57

So that in The Hub, we've got our courses, we've got our in depth video case studies. We've got our members-only forum, we've got the office hours where you can chat things through with me. All of that in The Hub. Go take a look: houseplanninghelp.com/join.

Ben Adam-Smith 36:14

That's it for today. Thank you so much. The House Planning Help podcast is produced by Regen Media: content that matters.