# Podcast Transcript - Overcoming challenges on the school set to be the UK’s largest Passivhaus education building

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Stuart Bryson

Hello and welcome to the AHR podcast where we engage in captivating conversations about the built environment and its influence on shaping a more positive future. In today's episode we're going to be talking about Passivhaus and currently the largest education project in UK, our Woodmill and St Columba's High School project in Fife.

Our aim today is to share our knowledge and experience of delivering this Passivhaus school and share that amongst the wider property sector. I'm Stuart Bryson, Regional Director in our Glasgow office and the Lead Director for this project. I am delighted to be joined by my colleague Jamie Gregory, Passivhaus Designer for the project, also based in our Glasgow office. John Peden from Fife Council and David Muir from BAM who are the contractors. There are several discussion points that we'd like to go through today and discuss four different key topics. The brief, the design challenges, the build process, and then what are our key takeaways from this project. So to start off, I'd like to ask each of our guests to introduce themselves.

And could I start off with Jamie, please?

Jamie Gregory

Thanks Stuart. My name is Jamie Gregory. I'm associate director based out of the Glasgow office. I'm also an architect and I am a certified Passivhaus designer and act as the Passivhaus designer on the Woodmill and St. Columba's High School project.

Stuart Bryson

Thank you, Jamie. Could I pass over to yourself, John?

John Peden

Thanks Stuart. Hi folks, I'm John Peden, I'm the lead architect for Fife Council and the quality champion for the Woodmill and St Columba's project.

Stuart Bryson

Thank you, John. And David, yourself.

David Muir

Thank you Stuart. My name is David Muir. I'm regional design manager for BAM Construction and we’re the main contractors on the project.

Stuart Bryson

Thank you very much everybody. So just before we go into our first discussion point, I'd just like to do a quick introduction to this project. The replacement Woodmill and St. Columba's High School project is a key milestone project for Fife Council. It's being delivered, designed and delivered and built as

part of the wider Dunfermline Learning Campus all part of a wider masterplan, which also includes Fife College.

So both Fife Council and Fife College working collaboratively to build this super campus. Our new building being designed to Passivhaus standards is as I've already mentioned the largest UK Passivhaus project on site at the moment and it is over 26,000 square meters in size.

It's going to be an exceptional learning environment, nurturing talent, and it's going to be stimulating, safe and a secure environment to learn and teach within. I'm going to start off perhaps asking some questions to yourself, John. One for you. In combining the both of these two schools together into the one building, what were Fife council seeking to achieve?

John Peden

Thanks, Stuart. That's a good question. I suppose, I think first of all, it's probably worth saying that from the outset that this is a fantastic project which we hope will provide a lasting educational legacy for future generations in Fife. And specifically in terms of the question, by combining the two schools into one building, we've been able to create what we think is a state of the art facility with truly amazing teaching and social spaces that will assist learning.

Obviously a lot of care has been taken to design the two schools to retain their independence and identities and that was one of the key elements of the brief. But there are also some really strong shared spaces which provide facilities for progressive teaching and cross fertilisation of ideas. I think it's fair to say that facilities, we hope, pushes the boundaries for collaborative working compared to any of the other new schools in Fife that have been delivered in the last 10 years.

Also important to say in a wider educational context, the location of the building directly adjacent to new Fife College development, which is also currently being constructed, creates a learning campus with educational pathways and opportunities for the young people of Fife. And that again, that was one of the key defining ideas of the overall master plan. And another kind of strong element to the design has been our work on sustainability and the co-location of the schools is also a positive step forward as it has allowed us to focus on reducing embodied carbon and the overall form factor of the building compared to creating two separate facilities which will obviously help our energy performance as well.

Stuart Bryson

Excellent insight John, thank you very much. And how did picking up and bringing both the schools together, how did both schools feel when you can have your interpretation of the brief? How did they view this opportunity?

John Peden

I think they really saw the benefits of bringing the two schools together and the opportunities that gives. We had a really good working relationship with both the head teachers and it's definitely that we've got a strong provision with all the educational areas together. There's some really fantastic spaces that we've been able to create because of the two schools coming together. It's, you know, things like the learning lab that we have, which is a really collaborative type space that we've not delivered anywhere else in Fife. Such interesting kind of spaces as part of that.

So it's definitely allowed us to develop the brief from other schools and the external provision that we've got at the school is, you know, fantastic. So I think there's a lot of merit in terms of the kind of two schools coming together and the working relationships that's been developed during the process of developing the brief and designing the building. So it's created strong relationships. So yeah, it's been a really positive process I would say.

Stuart Bryson

I think we would fully endorse that, John, as part of the process that we've gone through with you. Approaching stakeholder engagement has been a very thorough process, bringing both schools on the journey. How did you, the client, take that forward with Fife College?

John Peden

Well, we developed again a kind of strong working relationship with the Fife College team at an early stage. Obviously, it was a strong idea and concept for this learner journey and that was key to the development. We've worked very closely with the Fife College team and we have a relationship with them from before. Obviously, educationally, the staff have developed strong working relationships with the team at Fife College. And it goes a long way back, but also when, unfortunately, we had the large fire at Woodmill High School. They actually took a whole year group at the Fife College building. So that was, you know, relatively recently that there was this kind of strong bond between the college and Woodmill High School, but obviously St. Columba's as well. And really within that kind of area within Fife and Dunfermline, there's been that strong relationship built up. There's been a lot of work done to look at, as we say, the learner pathway and how that can start to really develop, you know, as a new building and progresses. I think there's lots of opportunities and that's something that's going to continue to develop as we move forward into the next phase. So really looking forward to it.

Stuart Bryson

Excellent, John. Well, we're certainly encouraged to hear that you're looking forward to this. You mentioned there the wide range of facilities that are included within this, especially community type facilities. What role do you think that this new building is going to play in the wider community to offer facilities?

John Peden

Yeah, so I suppose in terms of community facilities, I think it's, you know, well, as you know, it was a really important part of our design and development as part of the client team. We had a wide engagement process with stakeholders to ensure that we maximise the use of the facility. We're really strong believers that our buildings should be well used in evenings and weekends, as well as during the school day.

Both existing schools have really strong sporting community facilities with hockey and basketball being played at schools and evenings and weekends to really quite a high performance level. This has been replicated at the new building with excellent internal and external sports provision to ensure the high standards are maintained for the existing clubs.

The building also offers other exciting community type spaces as I just mentioned the learning lab space which is going to be a fantastic opportunity for collaborative working with the college both schools but also we see that being used in evenings for community use. It's got again as you well know it's got performance analysis space, the teaching kitchen, the media lab and a large project space with collaborative working. And presentation and kind of relaxation area in there as well. So I think that's going to be a really impressive area for community groups. And I think it's also it's important to say not that we don't forget about the external provision. We've got a community growing area as part of the development. And this is adjacent to the school growing space. So, again, there's real opportunities for joined up working here. I think it's worth mentioning here that the external teaching for the school will be a very important part of the curriculum going forward. And that's obviously we've worked with AHR and BAM closely to look at that design. And we've got obviously the internal courtyards. And we've also got the well-designed seating and landscaped areas around the external social spaces. So I think that will really maximise our opportunities to kind of develop our external teaching.

Again, going back to energy performance, I think in terms of community, it's also worth bearing in mind that the building has been designed in zones so that out of hours, we only need to open up

sections of the building that are actually going to be used. So again, that was a kind of key idea in terms of the functionality of the building. So yeah, community is really important, Stuart.

Stuart Bryson

Excellent, John. That was a very thorough answer. Thank you for that. You covered an awful lot of topics there. I was going to ask you the question, was there any challenges in the brief to delivering all of that? But you've answered it. We've managed to achieve all of these fantastic design deliverables that you sought. Just going back to perhaps just bring us back to the key message here and the key purpose of our podcast.

Why did Fife Council go down the Passivhaus route?

John Peden

Yeah, again, good question. I suppose the funding for the project is through the Learning Estate Investment Program also referred to as LEIP. This set the energy performance targets that we need to meet. And although not requiring us to use the Passivhaus solution, it has very much moved us in that direction.

And when we started the brief development for the project, we're very aware of the work being done on Passivhaus school projects throughout the UK. And that really interested us as it offered us the opportunity to better our energy targets, improve our comfort standards for all the building users, and also have a real focus on air tightness and build quality. So it seemed to really make sense to us to consider the Passivhaus solution.

I'm not going to lie, it certainly had its challenges and you know, budgetary challenges in particular, we had to have a serious think about whether that was the right solution. But the team within Fife Council felt strongly that was the correct thing to do. And obviously we're now over halfway through the build and we can definitely see that the move to Passivhaus with its focus on quality has been a really positive one, we feel.

And obviously going forward we're sure that improvement and comfort standards will also be realised once the building is up and running. I think to reinforce this as well we've also embarked of course on the design of our next new high school with AHR and BAM and this is also a certified Passivhaus classic standard approach that we're going for in this one so I think it's fair to say we're fully invested in this process and we think it's a really strong positive and solution for our buildings going forward.

Stuart Bryson

Excellent John, thank you very much. Very good, very good. I'm going to move on to discussion point number two and take on board all of those challenges that you mentioned there John, and I'm going to pass this to the designer, the design aspects of this. So coming to you Jamie, design challenges, how did we design this school? So being quite specific and looking at the design in more detail and that designing for Passivhaus, you know, and the immediate impacts that had in design, what did we have to do? How did we design this Passivhaus school?

Jamie Gregory

Thanks, Stuart. I think it's important when considering Passivhaus in building design is that you're guided by Passivhaus principles at the outset. You have to incorporate the fundamental principles of Passivhaus in building design to effectively deliver a Passivhaus project. Now, in the case of Woodmill and St. Columbus, there was two specific points which must be considered, this being the building form and the building orientation.

It's important within Passivhaus that what we call the form factor, the percentage of the external thermal envelope against the floor area is minimised. You want to create a compact form, minimise heat loss area. This drives a greatly efficient compact form. This can then affect the shape, the size of the building, the number of floors of the building. So the building had to be made compact, but we also had to consider the educational brief that building a building over four or five stories was not

appropriate, so it had to be maintained to what would be considered a standard Fife Council high school size. But also the building orientation, the principle of placing your main elevations on a north-south principal axis and minimising the east and west. I mean the site we were given for this project greatly assisted this by having the opportunity to spread the main principal elevations direct due north and due south.

But if you consider these direct aspects, these principal aspects from the outset, you actually enable you to incorporate Passivhaus and make the Passivhaus journey much more easy to incorporate within a building.

Stuart Bryson

Thank you. Thank you. That was a good answer as well. Now, thinking about the size of this building, now the replacement Woodmill and St Columbus. This is a big building and we've already mentioned this is the largest UK Passivhaus project.

were there challenges for you as the Passivhaus designer and scaling up that Passivhaus standard and taking that forward to a school building of this size.

Jamie Gregory

It's an interesting question because the sort of going back to the first point, the principles are the same, whether you're building a house or a school of the size we're building, but you're supersizing the principles effectively. But if you get the principles incorporated early in the design process, as I mentioned before, you can enable an easier transition to deliver a Passivhaus project. There are aspects that come with the delivery of a building of this type.

John mentioned about the zonal shutdown of a building to allow community use, to use out of hours use because Passivhaus does drive a very specific in use carbon target and part of that is the primary energy. So the principle of how we zone and shutdown and zonally approach the use of the building can drive a very specific energy target. So that has to be considered very early in the design of the building too.

And that can then drive the kind of principle of the zonal breakup of the building to understand how the building is used for community use. Principally for this project also was the package we use for Passivhaus is called the PHPP. Now, the building of this type was so big and it had such complexity that it was delivered with two PHPPs. This was agreed early with the Passivhaus certifier. This allowed us to develop two different design temperatures for the building, one for the main building, one for the sports block. And that allowed us then to drive a greater efficiency within the sports block targets because we're designing for a lower temperature because we generally would run the main building at a 20 degree target. We had an agreement with the Passivhaus Institute to run the building at an 18.4 degree target for the sports block. And that allowed us to drive down our energy use.

These principles are evolving the Passivhaus journey and how we understand and how we apply it to commercial buildings. But also outweigh that is the consideration of the build process of a building of this scale and simplification of detailing and understanding how that's applied on site. So it's developing up a standardisation of detailing, which can help deliver a building of this scale was important also.

Stuart Bryson

Have you learned a lot going through that process then?

Jamie Gregory

Absolutely, yeah. I think when we consider commercial buildings, certainly of this scale, in comparison to, well, let's actually go back to a bit of a Passivhaus principle. Keep it warm. Wrap your foundations. No thermal bridges. Completely thermally isolated from any cold. When you apply that to a building of this scale and the foundation solutions, the complexities of delivering a building of this weight scale size, you have unavoidable thermal bridges. So we then move on to mitigate the thermal bridges.

How do we deal with these thermal bridges? The building scale helps. The building is so big, it can take a certain amount of thermal bridge. We still have to consider it. We still have to mitigate it. But what we've learned is that the commercial delivery of a building like this with these thermal bridge considerations, and actually the simplification of the detail that comes with that has been very important. It's been a bit of a learning journey for us too, moving from what would be a residential Passivhaus, if you like.

Stuart Bryson

Okay, very good. Thank you. Thank you, Jamie. Well, actually, I might pass a bit pass this question across to John as well. You know, John, you know, as a client, what have you learned from this design processes we've gone through this?

John Peden

I think it's a good one Stuart. In terms of Passivhaus, I think, well obviously it's our first Passivhaus school so we jumped in with both feet. I think it's, you know, it's been great to be on this kind of learning journey with Jamie and obviously and with David and we've worked closely together to try and move this forward. It's certainly, I think, I think we've also as a team, you know, we've got people like our clerk of works, I think is bringing into that as well in terms of, you know, we've all been on learning courses to try and, you know, improve our knowledge of the kind of Passivhaus process. So I think it's getting everybody up to speed.

In the first instance, and having a basic understanding of what we're trying to do, and then move into the next phase of actually trying to build on that. And I think, as we'll talk about later, some of the work we've done as part of the quality, walk-rounds and meetings have been really important to how we've looked at Passivhaus and developed it on this project. So I think, yeah, I suppose to sum it up, it's definitely been a learning journey for us, really exciting kind of process to be in. I think one of the key things that sometimes gets forgotten about is actually the quality aspect in the construction and the build and we find that that's a tremendous addition as well as obviously the kind of comfort standards that we're trying to achieve. So I think there's lots of benefits of going down the Passivhaus route so hopefully that's some ideas or some indication of the kind of stuff that we are finding Stuart that's useful.

Stuart Bryson

That's very interesting, John. And I would like to just very quickly just pass back to Jamie on this. You've talked about how the Passivhaus design has evolved and the learning of that design process. How do you think that's affected the architecture?

Jamie Gregory

I think specifically for the Passivhaus design and certainly for this project, specifically for this, the frame option analysis was a key element of the design process here. There was early frame option analysis carried out in the project, which defined a concrete frame. Probably going back to some of the Passivhaus principles again, at the start is the air tightness requirements of kind of a 0.6 air changes per air tightness target for a Passivhaus buildings or sub that. And the principle of the early decisions on the frame consider this and we workshop to a precast concrete frame. And that was then joined up with a CLT frame for the sports block. And actually we have a hybrid frame with a steel frame within the core of the building as well.

So I think if we're considering how the designs have developed or Passivhaus developed on this type of project and commercial delivery, the frames and the consideration of that has been quite a learning journey for everybody, but the key consideration this project was delivering a airtight frame for the building.

Stuart Bryson

Excellent, Jamie. And I want to move on, it brings us very nicely, and I'll move on to discussion point three. And David, you've been sitting, listening very intently there. Now, we've heard from the client,

and they've given us a brief, and you've heard from the designers. That's great. You're the contractor. Your input. How do you actually then translate this Passivhaus design into the build. Can you elaborate on that for us?

David Muir

Give me the easy bits, did you? Yeah, I think as we say, if you actually look at the buildings, I'm looking at our buildings that we've done previously for Fife, if you look at the buildings internally and looked at this new building, you probably wouldn't see much difference. So the Passivhaus is predominantly about an increased insulation value and a more airtight building. But I think if you look at kind of the kind of figures in there, it's not a little bit more airtight, it's probably 20 times more airtight than what we built for instance at Madras, you know, for something that was 10 square meter or 10 meters squared per second. So it's 20 times more airtight than that. So it's a significant improvement that we're looking at. And that's where the difference is and that's where I think is, as John said, that's where the quality issues come in and that's where the main differences between the builds are from what we've done previously to what we're trying to do here. And I think, as Jamie said as well, the frame option was key. I mean, this is our first Passivhaus building that we're building in Scotland. So we've obviously gone to the biggest building in the UK and said, right, okay, we can build this. So we have got a bit of experience of it elsewhere in the UK. We built Montgomery Primary School in 2010, I think it was, in the southwest.

And we've got a fair bit of experience in Germany and we did take a bit of advice from our German colleagues. Their simple advice was build it in concrete. It's pretty simple. If you build it in concrete, you'll be fine. So that kind of, that was our kind of starting point, if you like, let's look at something that would give us an inherently airtight frame, which didn't then rely on the membranes and all the other bits and pieces to give us that airtightness, something that you could actually build that would be airtight. And I think as Jamie referred to the frame option analysis, I think that was important. And it was important to get to that decision. But if you look at what we did, we picked a precast concrete frame from the options. And then by the time we got to stage two and were going to go ahead and build the job, we had three different frames. We had precast concrete, we had CLT, and we had a steel frame. So we've kind of, I don't think anything's really fixed until it's fixed.

We've gone through a process, we've worked up the options, but it's not always one solution fits all sort of thing, so you've got to be flexible as well.

Stuart Bryson

And that brings in those different frame types there. David brings in different supply chain and different subcontractors. How do you then manage them to ensure the build quality? And John has already mentioned as client and he represents the kind of client body on this project. How do you get the supply chain and bring them along on the journey with you?

David Muir

That was a major concern for BAM if you like, because again, we hadn't done many precast jobs in Scotland. You know, and all of a sudden we're proposing the biggest Passivhaus job with a precast frame. So we did a fair bit of due diligence. We brought three or four different subcontractors in, assessed the relative merits of each, and then picked our preferred contractor who took a lot of management, we have to be honest, and took a lot of direct input from a fair amount of the team. But we got there in the end, and I think the product that they provided was excellent, you know, in both cases with FP McCann and with Glulam Solutions. So the steel frame, we knew we had a ready-made supply chain for that, but we did have to go and do a bit of diligence on the new guys, if you like, to bring in the precast. I think they've I think they responded well to it and I think the rest of the supply chain, if you like, I think have responded well to the challenge as well.

Stuart Bryson

Very good and John as the quality officer as it were the quality manager what's your involvement been through this design process and picking up and everything as David's just said there about the subcontractors and managing that process?

John Peden

Yeah, Stuart, there's definitely been a different view taken on this project in terms of Fife Council's involvement. And obviously, we always we always do have a strong team involved in the projects. But in this particular one, we've definitely enhanced that because partly because of the scale of it, I suppose. And and also because, you know, as we're talking about the kind of Passivhaus approach. And as you're saying, so my role.

We've been working with the Scottish Futures Trust on this and they've also got their construction quality improvement collaborative program and work, which we're all part of. So we had bought into that fairly early on. And one of the ideas was that I would then act as a kind of quality champion for this project. So we've done a lot of work. It's all about things like continuous improvement. And to help with that, we did a, you know, at the early stage, we did a big lessons learned exercise on Madras College, which obviously both yourself and Bam were involved with. And that was really, again, good collaborative kind of process to help us move forward with the design for Woodmill and St. Columba's.

So there was lessons learned, kind of practical stuff that happened on site was we decided fairly early on that we would have dedicated quality meetings. So a space that actually we could just talk about quality because quite often what happens is quality gets talked about at the end of a progress meeting. And everybody by the end of that kind of three hours of progress, you know, don't have a lot to say on quality because, you know, they're exhausted from the three hours.

So, so you know, that's something that we've created this dedicated quality meeting with her dedicated quality walk rounds, which have included the kind of Passivhaus elements. So that's been our focus for that. We've also created a mock up and sample schedule document which has allowed us as part of the walk rounds to review particular elements of the work just as they're starting to make sure the qualities there before they then get it gets rolled out across the site.

And again, I think that's been a really good example of collaborative working across the team. And I suppose just to emphasise, there's Fife Council and myself been working closely with Jamie right throughout the process. It's really rigorous, the Passivhaus quality. And that's, I suppose, the kind of thing that's really stood out to us, the kind of quality standards that we need to meet to achieve this and achieve the certification. So...

Yeah, it's been really, it's been an excellent process, you know, in terms of the kind of a real focus on quality throughout the project. And obviously we're looking to continue that with things like our soft landings process that will kick in at the end of the job, Stuart.

Stuart Bryson

Thank you, John. It, as you say, that quality aspect, AHR are signed up and members of the SFT charter in this, but there's such a drive between David and Jamie both working together to drive this quality through. Jamie, do you want to touch on that a second on your input? You attend site regularly with John and David. What are the outcomes from that?

Jamie Gregory

Yeah, absolutely Stuart. I think John's touched on it. You know, we do liaise with the site team and undertake kind of Passivhaus specific site visits and we feed back the reports to the contractor and then any issues are rectified immediately on site. The Passivhaus certifiers comes up on a regular basis to check on progressive works too, so the rigorous element of the build quality is something that Passivhaus does just drive as a kind of a key requirement of the build process. It has to be designed to Passivhaus standards, but has to be built to Passivhaus standards. And I think that journey and the process that's been evolved between Fife Council, the design team and BAM has been very successful to date.

Stuart Bryson

David, would you like to step in there?

David Muir

Yeah, I think that's probably been the biggest issue for us is just understanding that increase in quality. I think that's been maybe the biggest learning process that we've went through. I think we did well with mock-ups and samples and using early parts of the building to do tests, etc. I would probably say we could probably have done even more. I think dog boxes and things like that, we could maybe have sampled some, done some further stuff.

Looking forward, I would suggest we do even more of that. We almost need to be able to show people what does a Passivhaus good look like? What does Passivhaus standard look like? And this is what it is, and this is what you need to make sure that you can do. And I think certainly the feedback from the subcontractor, there's a big surge in Passivhaus in Scotland, as we all know at the moment. There's lots of contractors and lots of projects trying to do Passivhaus far more than there is anywhere else in the UK. So we're all using similar supply chains and similar contractors. So the guys are, I think they're very keen to learn and they're very keen to get it right. And there's a little bit of competition going on even between our two projects, where we've learned something on one and we pass it on to the next one and yeah, that works better. So I think it's a continual knowledge. And we went and looked at one of our competitors sites the other week there and the guys were brilliant. They were really open shared the good things and the bad things. So I think it's good for all of us to share that knowledge and just improve over time.

The big lesson that we've had on this site is obviously related to the roof, where we've had some issues from a quality point of view. And probably we found an issue where we had issue with the kind of standard of the substrate, what would be a normal perfectly good roof when you try and utilise it in a Passivhaus context isn't quite as good as it needs to be because the substrate is not quite as perfect as it could be. And that's a lesson to learn, that's something we can learn but if you take it to the quality point we were actually receiving insulation into site that was not the right size and not manufactured correctly.

And we are trying to make that fit into a very tight tolerance, which was almost impossible. And we've ended up having a major, a kind of major issue in having to relay lots of areas of insulation and lots of areas of roof. So that's had a big impact on us, but we probably, if you look at it, it was a quality issue. It was a quality of substrate issue, which I think was the smaller part and actually a quality of material delivered to site, which was probably the biggest part. And again, if you were doing that again the next time, there would be a higher level of scrutiny on that in the first instance. You know, so big learning curve for all of us, I think, but that's the big ones for us.

Stuart Bryson

Well, that's very good points you're making there, David. And I was going to roll on nicely onto our final discussion point, and that was key takeaways. So I'll stick with you there, David. That was good feedback. What's your takeaway from this project? What key experience have you gained from this that you'll apply to the next project?

David Muir

I think the key thing for us is we've probably been a little bit cautious on this one. We probably took quite a safe approach with our frame choice, etc. I'm hoping, Jamie will tell us the final answer at some point, but I'm hoping that we get a really good result from this project because we've actually built it with the right frame. We've insulated it to a very high level. We've got very, very few cold bridges. So I think we should get a tremendous result from this project. It would be interesting to see what the final result is. I think there's also the kind of reverse side of that is, could we have done it a little bit cheaper and a little bit less insulated and a little bit more cold bridges and a little bit simpler that might have saved us some money in some cases but still deliver the Passivhaus scheme. So it's that kind of level of how far away are we above Passivhaus standard or are we above the

requirements that we need to be? Or are we just giving ourselves a nice level of comfort that we're hitting it at the sweet spot? So I think there's kind of two sides to that. And obviously you can see as we're moving on to SWF, South West Fife.

We did a frame option analysis two years ago and came up with precast concrete, ended up with precast CLT and steel, and now we've done a new one and we're going with a steel frame. So you can see how things are moving quickly. And that's, again, it's part of this Scottish surge in Passivhaus that has caused that. So people are now saying, yes, you can build Passivhaus from a steel frame, and yes, you can do it at this level. And you know, and that's where our challenge is going forward is being able to prove that we can do that and we can deliver that for South West Fife.

Stuart Bryson

Well, that's, you must be reading my questions, David, because that was my next point, because my question was for John, for Fife Council. You've appointed the same project team, and BAM, for your next project at South and West Fife. What do you think this team have got from Woodmill and St. Columbus, and what we're gonna be taking onto the next project? What's your view of that?

John Peden

Yes, sure. I suppose we're really excited to all be working as a team again. I think it's really helpful. And also next Passivhaus High School, I think there's a number of kind of key benefits that that'll bring to the project. Number one, I suppose, is a common understanding that we've all developed over the kind of past projects and the collaborative working, you know, with the AHR and BAM, built up with the Fife Council team, you know, the whole team. And I think that's both from an educational side and a technical design perspective. It certainly makes the whole design and delivery of the project much more efficient and, you know, enjoyable process, I would say. So thinking about it on the educational side, obviously we continue to strive to create inspiring spaces for, you know, for our young people and the team are you know, definitely taking the lessons learned from Woodmill and St. Columba's project and applying them to the new school. In particular, I think the interior design work by AHR developed on the Woodmill and St. Columba's project, which was a kind of another avenue that we've gone down and developed on specifically for Woodmill and St. Columba's and we felt that was important. And that's going to act as a great starting point for South and West Fife High School as well. And we're already starting to see the benefits of that.

From a technical perspective, I think, as Jamie's talked about and David, we've got a really experienced team now to deliver the kind of Passivhaus requirements along with the rigorous quality standards. And we know what we're trying to achieve. So that's, again, really positive. Of course, probably it's worth saying we never rest on our laurels. We've got an even more ambitious target for embodied carbon on the South and West Fife High School. So we're definitely going to have to learn and we've gained from Woodmill and St. Columba's and move it on to South and West Fife and actually enhance that. And I know, you know, Rob from your team's working away on that with the One Quick Software, Stuart. And again, that's another area of collaboration that we're kind of working well with the team. But I suppose sum it up, I think, you know, the kind of partnering ethos and culture over a number of these projects can only benefit the people of Fife and delivering excellent facilities which obviously we hope will truly inspire the generations to come.

Stuart Bryson

Thank you, John. That's really nice words. It's very encouraging to hear that we've got a happy client. So I think that will bring us to the end of today's episode. I'd like to say my thanks to John, David, and Jamie for joining me today.

Passivhaus design is one solution for an energy efficient and low carbon future. And as a practice, we have designs across all of our nine UK offices and we're working on a number of Passivhaus projects across the UK. So sharing this knowledge across the property sector is going to help our industry build better for the future. So

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