

“Sustainable design meets student wellbeing: A conversation with tp bennett and COBE” Podcast Transcript – LFA Building Sounds

Eliza: Hello and welcome to Building Sounds, the podcast exploring the stories, people and projects that shape London's built environment. I'm your host, Eliza Grosvenor, Head of Programme at the London Festival of Architecture.

This month we're joined by Vicky and Chiara from TP Bennett, alongside Tom from COBE in Denmark, to explore their recent project combining Passivhaus design, student housing and wellbeing. To start with, could you each introduce yourself and your connection to the project?

Chiara: I'm Chiara Cozzolino. I'm an architect and I've been working at TP Bennett for the last 11 years and I'm a Passivhaus designer. I've been working for many years in the architecture, design and construction sector of our studio and more recently joined the sustainability team.

Vicki: I'm Vicky Odili, Director of Sustainability at TP Bennett. I work closely with Chiara. My background is in architecture, but I guess a reassessment over COVID has led me to move more into sustainability and lead our large in-house sustainability team supporting our architects and designers, elevating the needs of the people and the occupants in the space alongside the demands that we're placing on the planet.

Thomas: My name is Thomas Krarup. I'm an architect at COBE Architects in Copenhagen, Denmark, and I've been an architect here since 2008. COBE is an office that is specialised in both architecture, building design, public space and urban planning.

Eliza: Amazing. Well, welcome all to this conversation, which I'm really excited about. Before we actually dive into the topic of the conversation, we always like to start with a couple of quickfire questions, so I'm going to put you on the spot for two moments. So what is one word that comes to mind when you think of London's built environment?

Thomas: A few words that come to mind, this being the first time that I worked in London – with Vicky and Chiara, is historic and eclectic. I think just walking the streets of London you really get the sense of layers and layers upon rich history. But then, at the same time, it's also this super progressive, highly modern city where there's just so many new buildings that have been built in and around London. So it's really this fantastic mix.

Vicki: So the first word that sprung to my mind was collaboration. Actually, because our most successful projects that we've delivered at tp bennett have been as the result of an amazing collaboration with the design team and the client team, and I think you'll hear more about our collaboration with the design team and the client team and I think you'll hear more about our collaboration with COBE today and how successful that was. But I think that is really at the heart of all the brilliant projects that were delivered.

Chiara: The first word that came to my mind I think is un-homogeneous, and perhaps you can find a good or a bad connotation to that, but I think it's the panorama of the urban-scape in London. It's a reflection of the multiculturalism of the city and therefore it's rich and abundant of various forms of styles and architectures and masses and shapes.

Eliza: Amazing and perhaps, with that in mind, we can go in the same order, do you have a favourite place, space or building in London?

Thomas: Oh, you're really putting me on the spot here. One of my favourite places in London is definitely the Tate Modern, and it's just this celebration of industrial heritage and sort of transformation of the city from something that once was and into sort of a future setting and also utilizing it for cultural purposes, and also that it becomes sort of a catalyst for the development, and so I really find this both a magnificent spot and also a magnificent building in London.

What I also find fascinating about it is that it's something that's been closed and introverted and all of a sudden it becomes publicly accessible and it becomes a destination, and it's almost because there's, of course, a paid function where you have to pay to access, but then there's also this publicly accessible part, so it becomes an extension of London's public realm, which I find quite fascinating that it's just almost like a public space with a roof.

Vicki: No, that was up there. I was debating in my mind whether I was going to say the Tate Modern or actually I'm going to go local. So I live in Forest Hill in London and one of the places that I love going that I think talks about the spirit of community is the Albany in Deptford. So it's a repurposed building that hosts the most amazing theatre and live events, and it's been a real hub for me and my young family to go and spend time and experience all this amazing theatre that's designed to both engage young people and also entertain adults, and what I love about it is that it's quite unassuming from the outside, but all these magical things happen within. So I really love the idea of a space that's really flexible, that can accommodate all of these multiple uses and a diverse range of people.

Chiara: And my preferred space in London I mean, is a question that perhaps I've been having in my mind for ages since I live in London and there is no doubt is the Barbican Centre. I used to love it when I moved to London at the beginning and I still love it after many years living in this city, coming from the south of Italy, where the open spaces are the spaces of the people, finding actually an architecture that is an enclosed space and acts as a public realm even being indoor and in enclosed doors is fascinating. So it's a space where you can hang around and be there doing nothing, or it's a space where you can go to a theatre, to a concert, to an exhibition, where you can live, where you can work. And I think it was an experiment in the 70s to repopulate the city of London, not too sure whether it succeeded in that purpose, but perhaps succeeded in another purpose of showing how architecture can really belong to everyone amazing and, I think, three quite different spaces and kind of kind of ways of interacting with the city.

Eliza: But now we're going to move on to something that you all very familiar with and talk about all things Passivhaus design, how to truly design holistic approach to well-being in spaces, particularly when it comes to students and student housing. So it'd be really interesting to start this part of the conversation with a bit of an introduction into some of the work that you've been doing recently, why this is important to you and how it's come about.

Chiara: Yeah, we have been working in the sector of student residential as tp bennett for quite a few decades, looking at students, often in the UK and in London, where these are young people at the beginning of their public life, away from their families, coming from various parts of the world, meeting a new culture, a new language, a new environment. Then we are designing their home, their place to find shelter and recover. So we've got a huge responsibility and we

work for our clients, which are sometimes universities, sometimes our are developers, sometimes are joint venture of the two. But ultimately we work for the students that occupy those spaces and so we have more responsibility to make them feeling happier and healthier. And these spaces usually lack of the two.

I think of the ones that I visited. It's a paradox. They cost a fortune on their monthly rent and air quality, not even talking about Passivhaus air quality, you can barely breathe it. So it's very crucial for us as designers, and seeking the fine balance between the investment into a PBSA, a purpose-built student accommodation, and the return for the university's institutions and for the students and, of course, for our clients too, I think is our role.

Vicki: Yeah, I can add to that a little.

I mean, I spoke about the search where we have ongoing about what is seeking out the best for the occupants and for the planet, side by side.

I think Chiara put it very eloquently that we're serving the students first, that we really have this people-centric approach. Um, we're thinking about that, uh, in the tangible and intangibles. So we'll talk about it a bit more with our project case study. But I think it's interesting to point out that we found these elements like passive house that speak directly to the net zero carbon targets that we have as a country and globally. But actually we're really interested in what that brings, the intangible benefits that it brings by putting the person at the centre of the space and actually addressing the building physics, which sometimes get ignored, unfortunately, in the built environment, providing the best environment for them to be healthy and well, which is these intangibles that Chiara was mentioning the indoor air quality, the social connections, the things that bring happiness. So I think it's been interesting doing this research together and then being able to apply it on a project with Thomas's team as well.

Thomas: I think from our stance, one of the fantastic things about the project that we collaborated with Vicki and Chiara on in London was this approach of the passive house and actually how it's sort of the standard. That environment was super interesting and it really made us rethink how do we actually approach a project of this scale and how do you actually sort of have to as Vicki was saying that we have to bring the end user to the forefront and really think about the comfort and liveability of each resident in the building.

Vicki: I think it's worth noting as well that there's a lot of misconceptions around what passive house is. A lot of people perceive it because it talks about a high level of airtightness, a very airtight building. But that's talking about the infiltration rate coming through the fabric of the building, not about living in a hermetically sealed box. So ideally, a passive house has got mixed mode ventilations. You can still open the window in summer. It's really thinking about those extremes of temperature. When you're in the middle of winter you want to keep all the heat in. Then actually you've got the mechanical ventilation that provides you the fresh air. When you're not opening the windows as often, or as we're experiencing more and more the very extreme heat of summer, we actually want to keep the heat out and again you can have that cooler, fresh air. So again it is actually. While a lot of people think it's just about this mechanically ventilated, highly sealed box, we actually want to dispel that myth and say for us it's mostly about providing the best environment for health and wellbeing.

Eliza: I think that's super interesting and I think it's a perfect moment to dive into one of the projects you've been working on recently. But just before that you just touched on kind of what you've been tackling around this word of Passivhaus but for someone who this is the first time they've ever heard this term, can you distil it into one or two sentences?

Chiara: Passivhaus is a construction that is receptive to the external environment, if you like.

It's always been out there. Perhaps it's been forgotten in the last couple of centuries of design and architecture, but it's actually buildings that are capable to cope with their climate and therefore there's huge examples around the world of buildings that need no cooling or no heating. So, if you like, that is a Passivhaus. It's called 'passive' because it doesn't well, I'm going to be a bit contentious there, but take it as an extreme it could not rely on an active cooling and an active heating, so it's providing thermal comfort by its own shape and its own aspects and its own mass and thermal mass and various parameters that we use to design it. Then passive house during the course of the last century became a methodology and a process to design. It was born in Germany, but there is actually tests of first Passivhauses in Denmark and it became a methodology for us designers to actually fine-tune it. And also I think it's a very useful tool to escalate a methodology from a single villa, as Thomas was saying, to actually mass construction.

Eliza: Amazing. That was super helpful. So do you want to walk us through that process of how that's been with your latest project?

Vicki: So it was really interesting for us distilling, as you say, the essence of Passivhaus down to its core elements. So one of them is the form factor. So it's thinking about what is the net, the external envelope of the building compared to the treated floor area, or the net internal area? And actually the more cuboid a building is, the better the form factor, which means it performs better. You have to have less tricky junctions. So we did really early analysis with Cobra. They have an amazing team of computational designers so they ran analysis on every single iteration. So it was amazing to work alongside them through their design process where sustainability goes side by side with all of the design iterations.

So we're not prioritising aesthetics over sustainability. The two go hand in hand when you're judging the different options. So alongside that, we also considered the solar orientation, which is really important and is made more complex by having a dense building where you're designing student accommodation with a primarily single aspect. So thinking about what that means for the north side of the building and the south side and how you can treat them differently, and then working that through with those preliminary options for the mechanical and the natural ventilation. So some of those options we work with PHPP, which is a passive house planning package. So a simple excel software spreadsheet that you can plug in options and trial out these different design iterations.

Thomas: I think also one of the cornerstones of this design process is that it was very much a process in itself, that we did not have any sort of preconceived ideas of what is the end solution, but we were working within sort of preconceived ideas of what is the end solution, but we were working within sort of the constraints of a site, of a high dense environment, but also the design brief of a highly ambitious client.

And this sort of led us on a trail of, or a path, if you would say of, an iterative process where we really try to explore as many different solutions as possible to understand not only how do we sort of create this form factor that has the lowest possible number, but also to ensure how much daylight we get onto each facade element or piece of facade. But also, working in this high-density environment, we also wanted to be mindful and cognizant of okay, what is the impact of this building on the immediate surroundings, and that we are not just thinking about what is the quality of the project in itself, but what is it also doing to the surroundings in the form of daylight and shadow and also wind impacts.

Chiara: The Passivhaus standard lends itself very nicely for the typology of student accommodations, because student accommodations very simply, are buildings which in most of the cases terraces and balconies are absent and terraces and balconies are thermal bridges are absent and terraces and balconies are thermal bridges. Therefore a building that can take that advantage becomes all of a sudden a very compact mass and therefore that is really a great easy win on PHPP calculation. On what Vicky was saying for the route of passive house accreditations. So it's a nice match. It works on a large scale, it works on delivering good air quality, which is essential for the learning process for students, and it works on the typology of the building. So it's really a nice methodology for such building.

And although passive house has been around for quite a while now, it hasn't been around these typologies of building for so long. It's actually something that is emerging in the last couple of pandemic homewards is emerging as a standard for such typology and fans of Passivhaus are trying to make sure that the message is passed that going for a passive house on such a typology it's less of a struggle than on a more complex type of building. So it should actually be very much the way forward for PBSA I've got one other element to add.

Vicki: We were really interested in this project of the brain-bodybuilding connection. I think it's something that we think about as we design, as architects or interior designers, but actually the outcome for us was really to create this optimum learning environment. I think we took a lot of learnings from students who lived in their student accommodation over COVID and were confined to quite small rooms and didn't have a lot of outlets, and actually I think it really shone the spotlight on this specific typology of dwellings, that what happens when the world around you is not accessible and you're in your small studio bedroom for long periods of time. Obviously we don't have those restrictions any longer, but actually, if we think about students uh, potentially daily life, they could still be spending quite a lot of time in those rooms, either doing online learning or doing focused study. So we were really thinking about how can we create that, that the best space for them to not only have a place of rest and respite, but also to be able to facilitate that learning environment.

And as we did more research, we found out about a lot more about the impact of carbon dioxide on the blood, which is actually a Danish psychologist in 1904 who discovered this correlation and since there's been a lot of studies of what that actually means in the learning environment that actually higher concentrations

of CO2 quite negatively impact students' learning and although our bodies are quite well attuned to increase and decrease in temperature, we often don't register that the fatigue we sometimes feel is actually due to elevated CO2 levels. So actually having that opportunity for the enhanced mechanical ventilation in the background of these rooms had this knock-on effect that actually the students would feel more focused, they would feel better in themselves and more able to study. So it was really interesting some quite simple connections between the building that we're providing and actually how well the people are feeling who are living in them.

Eliza: I think that's super important and it sort of seems like there's been a long process of learning and kind of understanding some quite complex challenges that we sort of have known have existed but maybe haven't tackled so head on before. And I wonder were there any challenges or constraints in particular that you had to navigate and had some really interesting learning experiences coming out of there? Did you have to look abroad to different other countries and ways of working as part of that process?

Thomas: One of the fantastic challenges of working on a competition is, of course, that you work really with a sort of a limited amount of time and you have to find your solutions within this given amount of time.

And one of the fantastic elements of this process, together with Vicky and Chiara and their teams, was that we come together as two different offices with two different design approaches and maybe two different ways of sort of attacking a given problem in search of a solution. And actually this sort of collaboration between our two offices was super helpful in sort of bringing new ideas to the table and testing new ideas, so that we were constantly able to challenge one another and sort of bring new solutions. And because of the extent of our combined team, was that we were able to test a lot of ideas and sort of find what works the best in a very short amount of time, and this meant that we could also somehow challenge each other on preconceived ideas or things that we thought maybe wouldn't work to begin with, and we came up with something that we were very excited about together yeah, I'd agree.

Vicki: It was really, um, an excellent collaboration. We all thoroughly enjoyed working together and when you, when you were talking about going abroad to look for ideas, actually we obviously both visited we, you know, we went to

Denmark and the curva team came to London London. So it was, it was great to go there and get inspired, even just from the ways of working, the way the Coober office is set up and the opportunity to have swim in your lunch hour outside the office in the harbour I was very inspired by. But I think the interesting thing was actually those lessons learned from previous projects. So we both took the the other teams around to have a look at some of the work that we had built, and I think that's something that the built environment doesn't do particularly well yet we don't take the learnings from existing projects. So it was great to be able to share that, and share not only the experience of the building but also share some of those lessons that we're gathering from the inhabitants was really important for us.

Specifically with the project we worked on together, there was a lot of overlapping programming required in the social spaces, so it was really good for us to be able to take Cobra around and show them some of the student residency accommodation that we've delivered and see what those different types of social spaces could be and how we could facilitate that flexibility and adaptability, which is obviously an important sustainability principle making the most of the spaces that we're providing, but also thinking about what that means for the wider community and how we could actually open those doors and facilitate people from outside of the campus coming in and using the cafe and the other social spaces as well. I think that was quite a specific challenge, which we tackled by, yeah, taking the learnings from our other projects.

Chiara: One thing where Passive House might fail with student accommodation is overeating, and it's something we all have to look at and given that London is going to be as hot as Barcelona in 2050, overeating is going to be an issue and giving that hot temperature of impacts on the quality of sleep and on the concentration level and on anxiety levels, then that's reinforce our case for health and well-being. So, looking in the continent, you can see that there is an approach to control overeating using mobile devices, so external shading systems, which is not as diffuse in uk but as a designer, I keep banging my head against that being the optimal solution for guarantee a good solar gain in the winter and a good solar control in the summer.

Thomas: Just being in a new environment, in a new context. It was so fresh and so inspiring for us just to see how student accommodation is done, differently from what we experience in Denmark, the approach to it, from the way that people live to the catering experience, to the communal spaces. So for us, just

coming to London and sort of diving into the urban context and the social context and the social, sorry and the cultural context was quite invigorating. So we were really, you could say, sucking everything in and really getting inspired from just working on this project with TP Bennett.

Eliza: I think that's really an important idea of learning and reflection. I think, as you mentioned, it really is not absorbed into the project as well as it should do and I think we're seeing, therefore, results of student housing which have not taken on a lot of those lessons. And I was wondering what, for you, is the importance of well-designed spaces in contributing to students' sense of place and community creation and well-being. What, for you, would be some of the really key lessons that you have learned and you're applying to some of these new spaces?

Thomas: So one of the things that we were really interested in and really had to sort of wrap our minds around was the scale of the projects that are being built in London.

The student residencies are quite large a thousand beds or more and for us this was interesting to see. How actually can we sort of scale the student experience and sort of ensure that all the students are given a sense of belonging, so to say, and that we give these sort of scalable experiences and give spaces for different social encounters, from your private room to having larger scale meeting areas where you can meet the people that you live with on the same floor, for example, or having other breakaway spaces where you can have chance encounters with other people living within the building. I myself, I can just almost get a little bit of a social anxiety just thinking about so many people in one building, and for us it was quite important to think of how do we scale things down and break it into smaller components so that people can really find spaces where they can have a sense of belonging anything and I think, coming back to that question at the beginning of thinking about often the cities we're in, the space we're working in, are quite historic spaces.

Eliza: Sometimes they are, they are and obviously passage has not a new concept. It existed for quite a while but it's still fairly unfamiliar to many and I'm quite interested in how you found working with all the different partners in these projects and how receptive people have been to new ways of working and trialing and testing ideas.

Vicki: Yeah, it is, you're right, it's a big challenge. The industry is a bit of a behemoth and it is quite slow to take on new change. It takes a while for the industry, I think, to accept ideas. So long as they've been tried and tested for quite a long time, then we're happy with them. But it's difficult. Unless there's a massive cost saving to be made in innovation, then often it is not welcomed with open arms. So yes, you're right.

On other projects we have had a challenge in trying to get Passive House part of the targets and briefs and I think the step change that we would really like to see in the industry is for every project brief to have really clear sustainability targets, even if that doesn't mean Passive House. We really want to see metrics around whole life cycle carbon analysis and responsible sourcing and the circular economy alongside that, operational energy performance which, dependent on the site, can mean passive house to hit those net dairy carbon targets. I think the industry will when they can see the benefit. We talk to a lot of our clients about the return on investment and for some people when they're talking to the QS they say, oh no, passive house is 10% more expensive, so it's just ruled out at the outset, where actually what we learned from this project is. When you're targeting those levels of air tightness required by passive house, you can reduce the insulation thickness significantly, which potentially means quite a large cost saving not only in the quantity of insulation but in all the bracketry, all the connections within that facade. So you're simplifying those facade details.

So we'd really like to have that more iterative conversation with the wider project team about what that can mean and to not just rule things out at the outset. And also, I think the other important thing about sustainability is it's a constant upskilling. So there's so much innovation happening that we're all learning on every single project, learning on every single project, and so to be able to bring those learnings to the project, I think our best DTMs have been when we've sat around the table and asked everyone to share what's worked well on your last project, what can you bring to the table? What innovations could we consider on this project? So I think, while the industry's slow to move on potential, there's the potential opportunity on every project to innovate in a small way.

Thomas: One of the fabulous things about this project that we collaborated on was, as Vicky mentioned, is that the client and the development team, they had a stance of really having the passive house as sort of a standard for the project

and this just meant that if it's a standard that we all had to follow and we all had to sort of make it work, and in the end what's great about Passive House actually sort of measure embodied carbon over the lifespan of a building and not just what's sort of put into the building once it's built. And I think what we've been trying to do anyways is to sort of use this as an explanation towards clients who are on the fence.

Eliza: I think that's really important and, on that vein, what are you hoping will be the impact of this project and how it will feed into the future of student housing, of passive health design?

Vicki: I want to touch on that community creation that I think we really put at the heart of the scheme from us as well. We looked at the scales of community. When you're thinking about these very large buildings, how do we bring it back? So we're actually creating a sense of home and belonging. So I think the research that we did we actually looked at the Danish Happiness Research Institute, which is really interesting, and they talked about the three, several key elements to make a happy home. The top ones were pride in your home, a sense of comfort and a sense of identity.

So I think we tried to engender that in our design, in this specific proposal, and I think that all of those learnings are things that we will take forward so that the student as an individual has that place of respite. And then what are the opportunities we're giving them, even if it's chance encounters in the communal corridor or what other social spaces, different scales of social spaces, we're providing? So we're thinking about inclusivity and accessibility beyond physical disabilities, thinking about neurodivergence, the way the occupants experience the space with different sensory sensitivities. So I think we're looking at our projects going forward with that lens more carefully.

Thomas: You could say one of the essence of our sort of investigations and you could say laboratory work of trying to find the optimal form factor. In our early assessments we sort of found out and studied the passive housing. We understood if we get below a form factor of 3.0, you're actually doing really well. But we really were pushing the bar and we actually came down to I think it was around 0.7, form factor of 0.7, which was super efficient in this sort of iterative approach.

What we actually understood was working with circular shapes rather than rectilinear shapes helped really optimize the form factor and we were able to basically just working with a round floor plate versus a square floor plate, we actually saved 11% of the facade area and it also meant that the units or the student rooms themselves, they were also much more optimized around these round floor plates. And because we started working with round floor plates, then we also had a round core and circulation around round core and all the units. They were sort of almost democratically laid out with equal access to daylight and fresh air. So there was, you could say, almost no front side and back side of this project, with cylindrical towers standing quite close to one another.

Vicki: Yeah, and if we investigate what that means when you're walking through that space, walking around the corridor with a radius, we created pockets for those chance encounters where actually there's a recessed seating area. So another opportunity for a place of refuge. You could be sitting and reading and but allowing yourself to be greeted by people coming past within your cluster of rooms, and then that radial wall plate meant that actually the the widest part of the room allowed for more frontage. So often student rooms are small rectangles, whereas this provided the opportunity for greater views out and connections nature, because you had two windows along the facade of your room, so actually that could work for one person. Or, in this particular instance, they were looking at the kind of your room, so actually that could work for one person.

Or, in this particular instance, they were looking at the kind of rooms that are provided in America, where you have a twin room, so actually each person on each side of the room had their own window and their own desk and their own bed. So it provided a bit more delineation if there were to be two people sharing that same space, that same en suite room. So I think that experience of the space and then connecting all of those rooms together with a social space on the floor that had a mezzanine, study area and had a double height volume. So actually you have that surprise and delight that exists not only in the large social spaces but actually in your own kind of kitchen, living, dining area that you're sharing with your, like flatmates, but your, your other people living on your floor within your student flat or cluster.

Eliza: Amazing. That was super helpful and very conscious of time. I have, of course, one more quick fire question I want to ask you, which I think we've sort of touched on a little bit already with some of the Passive House targets and projects. But this year's theme of the festival is Reimagine. And so if you could reimagine one thing about this process you've been involved with, about student housing around the kind of architecture design industry more widely, what would be that one thing that you could reimagine?

Vicki: Yeah, I think we need to reimagine the built environment, considering the natural resource use more carefully. I think it's a mindset shift that we're asking everyone to make, to really grasp the concept of sustainability and, I think, designing for buildings that have a future life beyond the specific use that we're designing for them for. So whenever we're designing student accommodation, we're thinking about what else could it be if there wasn't the continuous demand for student accommodation. So making sure whatever resources we're putting into building the building could have a second life in a different use. But also what does that mean for the circular economy? And thinking about that whole provenance of the materials, where they come from, to the end of life. So kind of broadening the way that we think about the built environment, the buildings that we're providing.

Chiara: I'd like to see a built environment that takes better risks. As I touched upon before, I think risks are the power behind innovation and creativity.

Thomas: I just think it would be great to focus on this transformative city, that we have to stop looking at the city as some sort of as a locked entity, but it has to have the ability to constantly transform and adapt to future uses.

Eliza: I think these are really, really interesting ideas and I think there are so many challenges we do need to tackle and a real sense of urgency within that. But I think that's really kind of interesting elements that you've all touched on. And if people do want to learn more, where's the best place for people to start their journey?

Vicki: So we'll be sharing the research the Passive House white paper, research that Chiara and I have been doing on our website. So that's at tpbennett.com. I also would say actually, the Passive House Trust is really worth a visit. They're a

wealth of information and they also have some great webinars available that are pre-recorded so you can watch in your own time. I think the industry is really geared up to help people with this upskilling process, so I think that's a really great place to start.

Thomas: Of course we invite everyone to come and visit our website. It's kobodk, and then, if anyone is ever in Copenhagen, we have a small cafe in our office. So we also have an open door policy. So everybody's welcome to come in and see sort of the exhibition area of our office and sort of understand sort of the gist of our designs, where we have lots of current models exhibited.

Chiara: I think as a good takeaway for listeners is just a couple of reference to certified European Passive House designer. Course, we are not author of that, so it's really just a matter of information. One is the BRE academy and the other one is the co-action passive house courses in UK.

Eliza: Amazing. So watch this space, keep your eyes on each of the websites and maybe grab a coffee while you're waiting. Listeners, we hope you've enjoyed this conversation. We'll be taking a short break over the summer, but we'll be back in the autumn for a brand new series of conversations with the LFA community and collaborators. Until then, if you like this conversation, make sure to give us a like and hit subscribe on any of the platforms that you're listening to. Have a wonderful summer and we'll see you for LFA 2025. Until next time.