HOUSE PLANNING HELP

Episode 178

Natural clay plaster wall finishes - with Clare Whitney from Clayworks

The show notes: www.houseplanninghelp.com/178

Intro: Sustainable house building isn't just about insulation and solar panels. In this episode I chat to Clare Whitney from Clayworks about clay plasters, their application and why self-builders might consider them for their project. I started by asking her to give me a little bit of background about herself.

Clare: I'm Clare Whitney, I'm the marketing manager of Clayworks, who I've been working with since about 2009.

When I started working with Clayworks, the founders of the company were digging up clay on-site, mixing it on-site and applying it directly to the walls of buildings.

I worked on a lot of self-builds and small builds around Cornwall. The original name of the company was called Cob in Cornwall. The company were specialists in sustainable building products and did a lot of work for self-builders, right up to HRH Prince Charles.

So, we decided that there was huge potential in clay and clay plasters, but with digging them up on-site, it was very difficult to make them available to everybody around the world and to get them into the cities. We also needed to ensure that they were very robust and consistent in their quality.

We came out of the mud and went into a lab for two years, to create a clay plaster that could be ready mixed, available to anyone in the world at any time, that was consistent and tested.

Ben: Let's rewind a little bit now and talk about clay to begin with. What is clay and where does it come from?

Clare: Clay is a natural product; it's one of the world's most ancient building materials and one of the most naturally abundant. It's a natural mineral deriving mainly from feldspar, which is one of the most common minerals on the Earth's surface.

Clay plasters are essentially a mixture of clay subsoil, aggregates and some natural form of fibre. Clay is the binder.

The thing about clay is that there's lots of different types, with different mineral content. Without giving a lecture on geochemistry, it's about getting those minerals absolutely right and getting the mixture absolutely right, that ensures that clay will not crack and not dust.

It's all about water intake. Clay absorbs water and moisture. So, if it absorbs too much or not enough, then it doesn't hold its consistency.

So, it's about getting that mixture absolutely right with the different clay minerals, that was our work in the labs for a couple of years.

Ben: I think I heard this correctly, that you mentioned you started out as a cob building company or just helping with the materials side of that. What is the difference?

Clare: Cob is a building material. It's in place of bricks or blocks and it creates the walls. The founders of Clayworks actually wrote a book about cob building.

The clay plasters are the wall finishes and they finish the interior walls of buildings. We do emphasise that they are for interior walls.

We are historically specialists in lime plasters as well and have written books on lime plasters. Lime plasters differ in that lime goes through a chemical reaction so, it will set. It changes its chemical state after it's applied on the walls, which means that it becomes more water repellent.

We recommend lime for exterior uses and for wet rooms, whereas clay is more suitable for any other interior and bathrooms and kitchens.

Ben: I've seen it exactly in this way, lime on the outside, clay on the inside for a straw bale build. Are there specific types of construction that this works well with?

Clare: Clay plasters work with any type of construction. They are used a lot in straw bale, in Passivhaus, in lots and lots of buildings where sustainable building products are key. But equally, they're now used all over the world in cities, steel buildings and modern buildings. They're applied over blocks, over gypsum plasterboards, over anything right now.

Where they're very useful is where a building may be susceptible to damp or moisture intake, such as straw bale, or if there's a lot of wood, because the clay plasters will wick the moisture away from those products that would be susceptible to damp.

So, no, I think the answer to your question is that they're applicable to any building, anywhere in the world.

Ben: I just want to clear up one thing before we move on. Can clay be used for the actual building blocks of a building, or is it always likely to be in that plaster, inside?

Clare: It can definitely be used in building blocks, and often is. Clay blocks and clay building methods are being rediscovered, I think, all around the world. Obviously, it's a natural building material with relatively low carbon intake.

So, they can be used for the structure of the building and we have historically used clay for the structures of buildings, but our current focus is just on the plasters.

Ben: These plasters then, how are they applied? Do you need any special skills?

Clare: You don't need special skills. They're applied just like any other plaster. There's a series of different layers and depending on the substrate, you would need different binders, which we supply. Then a base coat and a top coat.

The top coat, any good plasterer can apply our top coats. If you were to look at our website, you would see that plasterers have created some fairly specialist finishes with our clay plasters. Very textured, very sculptural. Now, to achieve those sorts of finishes, you've got to be a specialist artisan plasterer. But to achieve a plain plastered finish, anybody can do that. It's basically the same techniques.

It takes a little longer because the clay is a slightly different consistency, but it's the same plastering techniques.

Ben: We've obviously mentioned a few of the benefits in here, but are there any other pros and cons that you can fill in?

Clare: The differences between clay plasters and any other wall finish are number one: its aesthetic. The second is that they are more sustainable than pretty much any other wall plaster. Thirdly, they have a lot of health benefits. And fourth is the robustness of the science and the materials innovation.

So, going back to the aesthetics, the key differences are with a plain finish, the patina is different. It's earthy, very soft. If you walk into a room with clay plasters, you'll immediately feel a difference. You'll feel a sense of calm. There's always a very slight texture that gives some depth and soul to a room.

The second aesthetic difference is because clay doesn't set, you can create these sculptures, sharply defined finishes with people doing all sorts of incredible things, including interior signage, logos and patterns. So, patterns and textures.

Moving on to the health side of things, the clay plaster will help regulate the moisture inside of a building. The moisture content inside of a building is being recognised now as critical towards contributing to human health, in particular respiratory illnesses. Keeping moisture regulated at the right levels is critical to mitigating the possibilities of allergies and asthmas. Clay plasters will do that. They remain breathable, they absorb moisture when there's moisture in the air and then they release it when the air goes dry. So, they're like a living wall, continual breathing in and out. That's a big difference between all other finishes including lime.

There has been a recent report released at the end of last year from the University of Texas that would indicate that clay has huge potential as a natural material, to help mitigate the effects of formaldehydes and indoor pollutants created from indoor ozone. So, there's ongoing research into that. It's not our research but third party research. So, we're very excited about that and keeping an eye on the developments there.

Obviously, the sustainability difference is clay is a naturally abundant raw material. While it would be nice that it didn't have to be transported, it doesn't have to be quarried. So, it's naturally abundant, easily available, the processing of clay plasters is minimal – it's basically mixing – so, there's very little embodied carbon compared to other products.

And then the fourth benefit is just the science that's proven the finish now and created a ready-made clay plaster that's proven and robust and available to anybody.

Ben: Would you need to do your whole house internally in clay plaster, or can you just do one or two rooms?

Clare: It's entirely up to you. The only area where we would suggest not using clay plaster is in a wet room where there's going to be running water.

But in bathrooms, kitchens, it's absolutely ideal. It not only absorbs moisture, but it helps to absorb odours and has very clear acoustic advantages as well. It just softens the noise, it softens glare.

So, yes, it's ideal for the entire house, ceilings as well. So, all walls and ceilings.

It's often used also for fronts of other surfaces such as kitchen interior bars and those sorts of furniture-type applications. But other people use it for feature walls.

It's entirely up to the user how they use it. But the mixture of colours and textures is fairly infinite.

Ben: Is it a special recipe that you have or is this what any clay plaster would be like?

Clare: We have spent many, many, many years building a special recipe. It is our recipe.

We believe that it is different to other recipes in that it is easier to use and more robust. We have applicators from all over the world sourcing our clay plasters because of the ease of use and the fact that it lays down much like a gypsum plaster.

So, most plasterers are comfortable with it and they're very comfortable with its reliability and they can trust it to hold those patterns, sculptures and shapes. They can trust it to stay on the walls.

Our clay plasters are being called on from around the world now because people prefer to work with our specialist recipe.

Ben: Is this something that could scale up, for example, it just really took off? Are there any barriers to stop it?

Clare: No, not at all. It's already shipped all around the world. In an ideal world, one day in the future, it will be made all around the world as well, using locally sourced sands and clays.

Ben: Cost wise, how does it compare to other plasters?

Clare: It's a little more expensive. It starts at about £20 per square metre. It's slightly more expensive at the outset, but the overall cost is probably similar because you don't need to paint and you'll never need to paint.

All of the clay plasters are through-pigmented. So, if they get chipped, you don't notice a discolouration and they're easily repaired.

So, there's no painting and it never will need painting. If you were to factor in those costs and the ongoing labour costs of repainting, then I think the payback is fairly economical.

Ben: Selecting those colours, is it very easy to pinpoint or do you think 'we just missed the colour because you needed a certain amount of this'? How does the colour side of it work?

Clare: The colour side, we've got a chart of existing colours, what we would say are off the shelf colours. But actually, we make colours in a fairly infinite mix. We're always making up colours to people's specifications. We get all sorts of pictures and samples of colours that people want mixed.

We can create pretty much any colour or you can buy off the shelf from the existing colours.

For many homebuilders, they tend to just select a colour and order straight off the shelf. For larger commercial projects, we go through a process of making up samples until the exact colour and exact texture is made to specification.

Ben: I'm assuming that the colour is something additional going into the plaster?

Clare: Yes. They're all natural mineral pigments. Again, that's all part of our research and we've come up with a very comprehensive range of colours.

There's a perception that clay plasters will come in earthy, terracotta colours. But we can do a lot of turquoises, blues, greens and we've even done pinks and purples over the years.

Ben: At what stage of a project would we make this decision, start specifying and looking at your products?

Clare: It can be done at any stage. We work with projects where it's specified right from the very outset, right through to refits or rethinks. It can be applied at any stage of a project and the decision making process can enter in at any stage.

We've got our ready-made clays ready to be shipped so, if somebody has a change of heart and suddenly wants to do clay plaster, they can be there pretty much the next day.

Ben: Do you have any examples of self-builders, any pictures or anything that we might be able to include in the show notes?

Clare: Yes. For the self-build market, we've got lots of pictures. If you go onto our website and on to our gallery page and look into the residential, that goes down into quite a few residential and home builds.

A good place to see our products is Gloucester Services on the M5. Lots of people pass that. We're in the Leach Gallery; we're in many, many Nando's all over the world and various other restaurants. We're in a restaurant in St. Pancras Station. So, there are lots of places where people can walk into a public building and experience our clays plasters.

The aesthetics are very difficult to describe in a digital format. You have to see them and feel them and sense them. It's a completely different feeling to walk into a room with clay plasters, to paint.

Ben: Is there anything else we should know as self-builders, about this clay plaster and how it works? Or have we covered it quite well?

Clare: I think we've covered it really well. I think the only other thing I would say is that we're a small, friendly company and if you pick up the phone then you can talk to our technical team and they will talk you through every single aspect of how to apply the clay and the services and the substrates and the primers and the entire plaster build-up.

There's nothing to be afraid of and we will talk you through the whole process.

Ben: This is something we can actually tackle as self-builders and do ourselves? I'm someone who wants to be completely hands-off but we could do it ourselves with not too much training, or that might be something that you'd suggest to us?

Clare: We do offer training. We have a number of one-day training courses throughout the year. But we've also written a book, Using Natural Finishes. This covers both clay and lime but that takes people through the process of how to apply it. That can be useful.

But everything's on our website about how to apply it and as I say, we talk people through it. So, there's nothing to be afraid of. Lots of people apply it by themselves or we've got a network of people who have been trained by us throughout the country, that we can point you in the direction of.

Ben: As the marketing manager, when I saw a presentation that you gave, you actually had some quite novel ways of getting yourself around the globe.

So, a slight change of direction towards the interview, let's talk marketing. How is this working in getting your message around the world?

Clare: It's been a really, really interesting journey because we come from the sustainable buildings background, but the clay plasters were picked up by designers and architects who recognised the aesthetic beauty of clay plasters.

That's been a really interesting perspective. We originally spoke a lot about the sustainable benefits and the healthy benefits, but actually people have recognised clay plasters for their aesthetic opportunities. It is a visual beauty but there's also something about being in a room with clay plasters that designers and architects have picked up on.

So, we've really built upon that and we really think that it's very important for all natural building materials to talk about their beauty as well as their functionality.

Ben: Do you have any clay plaster in your home?

Clare: I don't. I'm waiting for planning permission myself for my home.

Ben: Interesting. What are you building?

Clare: Just a refit and a renovation. If and when we get planning permission then there will be a lot of clay plaster in the house, yes.

Ben: How long has this been going on for, that you've wanted to do the renovation?

Clare: Too long.

Ben: Thank you for all the information, good luck on your project and I appreciate you making time for us today.

Clare: Thank you very much, Ben. Nice to speak to you.