

Episode 160

Is a thatched roof appropriate for a new build home?

The show notes: www.houseplanninghelp.com/160

Intro: Thatched roofs have been part of traditional house building in the UK for a long time. They are still a viable option for new builds today, and innovation can be seen both here and on the continent that pushes the boundaries of using thatch. In this interview we talk to Stephen Letch, a master thatcher. I started by asking him to tell us about his background.

Stephen: I've been thatching for forty-two years now and it's basically the only trade job I've ever done. I'm pretty pleased that I took up the job. It's been a way of life in a sense.

Ben: How did you get into it? As it's something that you've done for such a long time, was it in the family or because of the area?

Stephen: No, it wasn't in the family. But I'd overheard, back in the Seventies when we had the three-day week, the problems with getting jobs at the time. I just thought, well no, we're coming out the age, let's get back to some real trades and work. It just tickled my fancy to work outside and learn a trade.

Ben: Who were the first people to use thatch and why?

Stephen: Now, thatching, the origins are probably lost in time but you can probably trace it back at least as far as the hunter-gatherers. In a sense, it pre-dates all other construction forms.

It's the forerunner of modern construction. It sounds strange but the reasons for thatching being so fundamental for human development, I guess, was the need for shelter from all the elements. Wind, rain, sun, all those things. That's how thatching would've started.

If you were to go to the countries nearer the equator, you'd find their needs for thatching would be to keep the sun off, to protect them from the sun and the occasional downpours of rain. Whereas as

you get further away from the equator, into temperate zones, thatching has to be that much more robust. It's got to put up with higher winds, colder weather, wet, wet, wet and of course it keeps the warmth in as well.

Ben: Maybe we should define what thatching is in this early part of the interview.

Stephen: Well, thatching is basically compact plant material. The whole idea is to keep mostly the wet weather out. So, when it rains, as long as that compact plant material is at a good pitch, so on a steep roof, the rain, snow, anything like that just bounces off.

You wouldn't find that there'd be any ingress of water on a good thatch any deeper than the first one and a half centimetres. Everything underneath that is bone dry.

Ben: And that top layer, I'm assuming it doesn't stay wet the whole time, it dries out again?

Stephen: It generally dries out in the sun and the wind. The whole idea of a good thatch lasting as long as possible is controlling that surface decay.

The surface decay is usually through the brown rots, which are sort of intransigent. They survive for a while and then die off as soon as the moisture levels are gone. The decay levels are very, very slow. So, you can get different roofs lasting between forty and seventy years.

Ben: What materials make a good thatch?

Stephen: Well, there's a number of materials, depending on which part of the world you're in. But we'll say the UK for now.

The three traditional types of thatching materials would've been long wheat straw, Norfolk reed and heather. Down in the West Country, they used a form of wheat straw that's put through a comber and they called that combed wheat reed. So, it's similar in appearance to water reed.

Ben: These materials, was it to do with availability and also performing well in their job?

Stephen: Yes, it's mostly local availability.

Let's say, for example, we're living in the Broads and we want to build a house in the Broads. You won't be finding very many arable

fields in the Broads but plenty of wetland and reed. So, you'd find in an area like that, traditionally the roofs would've been thatched with water reed.

Then you'd go further inland where the arable crops are growing and that would be predominantly long straw or combed wheat reed, as you would in the West Country.

And then you'd go further north to, say, Northumbria or Scotland and you've got all of the heather growing up there. They haven't got any possibility of growing much wheat or materials like that. So, all those low-slung bothies as such, all thatched with heather.

Ben: Are these wild crops or do you have to make sure that they are looked after in a particular way so that they're useful?

Stephen: Yes, well, we'll take long straw for example.

We have to cut the raw material with old machinery. That sounds strange.

Ben: Are you sure there's not a computer we can bring in here?

Stephen: We just can't use modern machinery like combine harvesters. We have to use the old reaper binders. Actually, the most modern harvest machinery I've got is a reaper binder from 1950.

But the reaper binder cuts the straw in a slightly green state so, it's not overly ripe. The crop is cut slightly green, the sheaths are then stood up to dry in the fields for two or three weeks and the grain ripens and then the crop is carted into a corn stack, ready for threshing out with an old threshing machine.

The threshing machine requires eight people to work it. It's a fancy bit of machinery designed back in the nineteenth century and it doesn't break up the straw. It's very gentle with it whereas with a combine harvester, it's all grunt and it ends up like candyfloss.

Ben: I'm imagining at its peak, thatch was taking advantage of waste material, whereas now that must be reducing to very low levels. Can you still find it now or is it fairly stable?

Stephen: Well, with straw for example, it is a by-product. But the farmers that grow thatching straw are specialised now. And their by-product, as such, is the grain.

Ben: That's a nice by-product.

Stephen: Yeah. Whereas reed cutters, obviously, they're cutting reed every other year and that is the main crop as it grows annually.

And with heather, there's not much harvested these days. So, an old tradition that's virtually extinct. But that was on a fifteen-year cycle. So, the heather would be cut every fifteen years and then used on the roof.

Ben: How is demand for thatch then? There are certain buildings that are listed where it has to have thatch. But in terms of an art form, what's it been going through these last few years?

Stephen: In the UK, we generally consider thatching for listed buildings, our old building stock. For the most part, it's about conservation of our existing building stock. Whereas if you were to go onto the continent – Holland, Denmark, Germany – you'd find that they've been building tens of thousands of new builds.

So, they've got a slightly more open view about thatch. They actually believe in it. Whereas people in the UK are still sceptical. They don't quite trust it.

I guess the Dutch in particular would be considering the sustainable and the green factors but it is their belief that thatching is a viable building material.

Ben: At this point, the pros and cons might be interesting to touch on. Maybe you could run through some of those?

Stephen: Well, the cons really are it's labour intensive. So, the cost of thatching is more than most types of roofing material. Concrete tiles, we just can't compete with. Whereas if you were to look at old clay peg tiles and Welsh slate, the price is fairly comparable then.

So, the cost factor is a bit of a disadvantage for most people. But the benefits, of course, are you're using a sustainable material, you're providing local employment, you're using a material that's basically a carbon sink and it's got good insulation and keeps the weather out.

Ben: What about fires? Some people talk about straw bale houses being dangerous. I know they're not when they're actually shown these tests. But thatch?

Stephen: Well, we all know that thatch burns. The media often put it in the papers and on the TV unfortunately. But thatching itself is not a fire risk. The risk is modern living.

So, it could be modern appliances, electrical faults. Wood burners in conjunction with poorly lined and dirty chimney tops are probably the main cause of thatch fires.

And once a thatch does catch alight, they're very difficult to put out. If you were to ask the fire services, they'll tell you all about that. They will pour their fire hydrants and water hoses all over the thatch and the water just bounces off. The only way they can tackle that is by making fire breaks or letting it burn.

With modern thatching these days, we tend to put a fire barrier underneath. So, if there ever was a fire, the thatch will burn off as sacrificial and the building's safe.

Ben: With that underneath, I'm assuming that not many fires start from the other side unless you're very unlucky on a hot summer's day and someone throws a petrol bomb?

Stephen: I suppose if you go back twenty, thirty years ago, when farmers were burning their combine straw or the residue of the fields, there was a few fires there. But other than that, there's people with bonfires – that's rare.

Most thatch fires either start from inside, a kitchen fire for example, but that will burn the whole house down anyway. But yes, it is really the wood burners and dirty flue pipes.

Ben: Let's have a look at the roof itself. Does it vary much or do you need it at a certain pitch? What are the considerations?

Stephen: There's an optimum pitch of at least 50°. Anything under that, you're going to find that the rain water will sit on it and not drain and shed off quite so quickly. That will mean the decay will be that much quicker.

So, the steeper the roof, the slower the decay. That's the main consideration. And making sure that the thatch is compact but can breathe on the surface as well.

It doesn't want to be like cast iron, concrete on the surface. It's got to breathe a little bit on the surface.

Ben: Talk us through if you were putting up a new thatch. It sounds like you don't do this very often, you just build on top of thatch. But if you were going to do a building, putting a thatch on, how would you do that?

Stephen: We'd start off with the raw materials. There are a few details on the roof that have to be dealt with, baton sizes and details around the barges and eaves. But we've got the raw material.

We've clearly got a problem; there's tens of millions of stems there. How do you get all those stems that are shifting everywhere, up onto a roof? The way we have to do it is with a bunch of reed, tied up. And that is purely for taking the material up there. It's not a manufactured unit like a tile. It's just a way of taking the material up.

And the same with straw. The straw would be prepared into what we call yealms, which are basically a straw tile. That's a means of taking it up onto the roof.

And we'd start, just like you would with tiles, at the eaves. And each layer or course will be staggered up the roof and fixed every time on every course.

But what you can do is you can alter the specification of the thatch by making it thicker, thinner ...

Ben: Why do you do that or in what circumstances?

Stephen: For example, if you wanted a warmer roof and a longer lasting roof, you would go for a thicker specification. Because it will take that much longer for the decay to wear down to the fixings. When the fixings start to appear on the surface over a period of years of decay, that's the time to replace the thatch.

Ben: When you come to replace it, you're not actually taking out, are you?

Stephen: With reed, we'd take everything off and start from scratch onto the rafters. With straw, traditionally, over many, many centuries, the existing layer of straw that's fixed to the rafters that has worn down will stay in place and we'll put a new layer of straw thatch on top of it, using hazel fixings.

They're basically like a twisted staple on to each end and we use thousands of those. You just fix it into the old thatch.

Ben: And it's okay from wind? There are never any circumstances where it lifts off in a section?

Stephen: A well thatched roof does not suffer from wind. I rarely go and do any repairs on thatched roofs that have got wind damage unless they've got to the stage where they're completely worn out.

Ben: I've seen certain thatches that get covered. What is that all about? Is it necessary? Is it for a certain type of thatch?

Stephen: What you'd find on the surface of thatch is lichens – sometimes moss but mostly lichens. So, a green sheen on it.

Lichens are not a problem for thatch because although they hold a little bit of moisture, they do ventilate and breathe and actually can make the roof last longer.

Whereas moss, if it's allowed to get too thick on the surface, it will retain the moisture longer for fungal decay. And that's what you don't want.

Ben: I was thinking more of chicken wire. I should have specified that.

Stephen: Ah, chicken wire's a strange story. It's only this country that uses it. In fact, wire netting was invented in Norwich, just up the road from here.

Ben: So, it's using some local product. We need to get some wire netting on there.

Stephen: Yeah. Well, that was being produced in an industrial scale, not particularly for thatching at the time in the nineteenth century but for fencing and all sorts.

During the agricultural depression of the late nineteenth century when we were importing all the grain from the Americas, our farms went into decline and we were finding the master thatchers were in competition with farm thatchers because they'd lost their jobs.

Now, a farm thatcher will be thatching the corn stacks which are only designed to last for a few months. Because they then take the corn stack apart to thrash out to get the grain out. So, we were getting poor quality thatch.

And we had plagues of sparrows at the time. We don't now. So, wire netting started to be used.

They never used it on the continent and they lost their straw thatching traditions. So, you'll only find straw thatching in this country, you could say, because we put the wire netting on.

But you have to start thinking do we really need the wire netting on there now? We don't really get the sparrow problems that we did many years ago. It's a shame that we don't see the sparrows but from a thatcher's point of view, we don't mind.

Ben: Going back around to the continent, I think I'm right in saying that you've done a fair bit of travelling and checking out a few things over there. What are some modern day uses of thatch that goes beyond roofs?

Stephen: Well, thatched walls. I thatched with some colleagues of mine a new building in Norwich called the Enterprise Centre.

Now, that building was something different because it was so big, we couldn't thatch the roof. It would've meant that the roof would've been 200 feet up in the air. So, that was obviously far too costly and not what the contractors and the UEA (University of East Anglia) wanted to undertake.

So, the idea came about that we thatch the walls. And what we did was we thatched it in sectional form, in our sheds and barns, and then these sectional thatched panels were then transported to the site and they were craned into position.

It was built like a jigsaw. But the tricky thing was to hide the joins. Because thatch is designed to be one unit. No seams, it's just one unit. Unlike tiles which are all units.

So, that was something different. I think the architectural world's still coming to terms with that building because it's just far out there.

But we would expect those thatched walls at the Enterprise Centre at the UEA to last in the region of fifty years plus. Mainly because they're so vertical, the weather never gets to them, so they never get any fungal decay and so they don't wear back. They even keep the colour.

So, it's something.

Ben: What are the most spectacular houses that you've seen that have been thatched? They could well be in your home county here or far away.

Stephen: Well, some of the spectacular ones that we have in this country are really some of the Ideal Home buildings that were built in the 1930s.

Big country homes with thatched roofs, it was all in vogue in the 1930s with the Royal Family. So, you've got some very interesting buildings there.

We have barn conversions here. Thatch looks quite simple.

But if we were to go over to Holland, the styles, the architecture and the ingenuity of using thatch in different ways is just amazing. They're not afraid to push the boundaries over there.

Ben: What would it take for us to follow suit?

Stephen: A more open mind and be prepared to take on thatching, realise that there are very little risks in it failing in the short term and just embrace it.

All you need is developers, building control and future thatch owners to buy these properties.

Ben: My wife is a big fan of thatch and I've certainly thought about it for our own build. But there are a couple of things that are stopping me, one of them being resale. Particularly of a new building.

Have you any experience of whether people are turned off by having a thatch roof, particularly on new buildings? I should think the old listed ones, it doesn't really make much difference.

Stephen: Well, one of the reasons why there isn't so much new build in this country is it's tricky to get a mortgage. Because the regulations for thatching are non-existent. There's no uniform specification.

So, it comes to a grinding halt there. It needs some kind of warranty sorted out so that people can get mortgages from the mortgage companies.

I don't know what the answer there is really.

Ben: I'm not expecting all of the answers here.

We've had a good overview of thatch. Is there anything else you feel we should be mentioning and tying into this conversation, self-builders looking at thatch?

Stephen: I would say look at all the benefits, consider it, weigh up the costs and if you're trying to get planning consent, I think you'll find that the planners would look favourably.

You'd have to get through building control and get your finances and mortgage money sorted out, obviously. But there are specialised companies that do provide money.

Ben: Where will we go for solid advice?

Stephen: For solid thatching advice, it's probably best to go to your local thatching organisation. Most of them are county-based.

I belong to an association called the East Anglia Master Thatchers. We cover Norfolk, Suffolk, Essex and Hertfordshire. We're one of the very few thatching organisations that actually publishes standards and specifications so, you know what you're getting. There's a peace of mind. Our members have to guarantee our work to that specification.

Ben: Stephen, thank you very much.