HOUSE PLANNING HELP

Episode 45

Why Are More People Not Retrofitting Their Homes?

The show notes: www.houseplanninghelp.com/45

Intro: Let me introduce the panel who were on our Google+ Hangout, Managing Editor of Treehugger Lloyd Alter, we had Matthew Cutler-Welsh host of Home Style Green and, also writer and blogger Roger Hunt who also is the co-author of the Old House Eco Handbook. So we got them all together getting various opinions from various parts of the world. Retrofitting, on the surface, it does make sense. Why wouldn't we all be doing it, trying to upgrade our properties to make them more comfortable, to make them cost less to run so that side of things it's all good but clearly there are some barriers and that's what this discussion was all about.

So I started by asking Lloyd about whether retrofitting was really on the minds of people where he is.

Lloyd: Yes, I'm in Toronto, Canada, where we've just had natural gas prices double this week because of the demand from this winter and retrofitting is a big issue and it's not on enough people's minds. It should be. The problem with it here is people do all the wrong things. You know the window salesmen are very powerful and they spend a lot of money on advertising so you're getting all kinds of people saying: "I just put in my new double-glazed windows." And they went from an R-value of 2 - I'm using American R-values here - to an R-value of 3 or maybe 3.5, you know, double nothing is still nothing! They're missing the big things, the important parts of it.

I'm going through a major, major retrofit right now and what I'm in fact doing is taking my house, which although I'm in a very small lot is three stories high and it's six bedrooms, and I'm duplexing it so that I will live in a much smaller place that I will have when I'm finished. When I'm finished, instead of the two of us in our house I will have six so that the energy use per capita in the house will drop significantly. And while I'm doing it I'm getting rid of the leakiest part of the house, the sun rooms that were added on the back that are glass and three walls I'm replacing with proper construction.

But I'm going at this almost energy density of the house per person rather than saying: "Oh I'm changing the windows and I'm adding

insulation," and I'm doing all those things that are going to ruin the character of my 100 year old house.

Ben: Well some of those are quite interesting. We might have to delve into that a bit later on. Also how much you've spent on that . . .

Lloyd: Oh, I'm not telling you how much I spent. [Ben laughs.]

Ben: Oh damn.

Lloyd: I'm embarrassed. [Lloyd laughs.]

Ben: Let's have a check-in with Matthew Cutler-Welsh because I know that out in New Zealand it's a very different situation, isn't it?

Matthew: Well, it is but you know we've talked a lot about the fact that I believe strongly that across the world we have more in common than we do in difference. So I think there are a lot of commonalities. We're a pretty small place down here. We only have 1.6 million houses in the whole country. Research a few years ago, five or six years ago, suggested that 1 million of those existing 1.6 million houses were essentially below standard. If you looked at World Health Organisation requirements for those houses to maintain a reasonable temperature 1 million of those are substandard essentially. That says that there is a lot of need to retrofit houses and those houses should be retrofitted and remodelled but whether or not that actually happens.

We probably should talk about what retrofitting actually is and what it isn't. Lloyd alluded to it there. We have a lot of people who spend in the region of maybe $3000, $3500, up to $5000 per year on stuff in their house but that might be adding a deck or it might be redoing a bathroom. None of those things are usually improving the performance of the home.

When I used to sell insulation, I used to ask my team what they thought the biggest competition was and it wasn't other insulation companies, it was people selling timber for outdoor landscaping and people selling fancy bathroom fittings because people have only got a small amount of budget that they're going to allocate to improving their house. They're probably going to do it on aesthetics things first.

Ben: Yeah, I think you've hit it spot on there. There are all sorts of different issues but I guess priorities have got to be up there. We'll move onto Roger for now but we're definitely coming back to that

point and some of the other financial implications of what you might want to do.

Roger the UK is pretty poor compared to the rest of Europe. We have some of the most inefficient housing stock of them all and some of them are lovely buildings though so what's our situation?

Roger: Well I think the problem is we've got the oldest housing stock in the world, some 26 million homes in Britain. About half a million of those are listed buildings which means they're old buildings that need to be cared for in a special way and they're protected, and about one fifth of our dwellings were built before 1919 so we've got a huge problem with very old buildings that we've got to deal with. Those buildings are also responsible for about 26% of Britain's carbon emissions. So we've definitely got to do something but it's how we do it and I think one of the problems is a lack of knowledge about how we should deal with those buildings, certainly amongst the general public. We are gaining greater knowledge now amongst the professionals, but we are still seeing things, I think, that are being done that are maybe not appropriate in the long term. We may well be ripping out some of, certainly, the insulation solutions that we're seeing. I think we may see them ripped out down the line and 5, 10, 15 years' time we might be regretting decisions we've made now because we're dealing with a huge stock of solid-walled buildings that need to breathe and they need to work in the way they were designed to work. If we start putting insulation materials on that can't breathe we're going to end up with problems.

We talked about windows earlier there and I think windows are also another issue that there are a lot of inappropriate windows being put in that are also devaluing properties and very long payback times as well. I'm seeing payback times of 97 years quoted for some replacement windows. In the process we're losing wooden windows, which are going to landfill which are equivalent to an antique chair or something being thrown on the skip and going to landfill.

So I think there are a lot of complicated issues. We've obviously got to do something but it's how we do those things.

Ben: You mentioned all sorts of interesting aspects there and maybe we can go through them one by one but let's start with this then. Is it just actually too difficult for and there's too much going on for the average person that really they're not going to do anything unless they're forced into it. Would that be a good assessment, Lloyd?

Lloyd: No, I don't think so at all. The problem is, I believe, that people don't have the right information, that the construction industry and the renovation industry is basically built around the idea of selling people stuff. So new windows for instance, again, are one of the best examples. I mean they're called replacement windows for a reason - every 15 years you have to replace them again!

The fact of the matter is that I've heard stories, calculations of payback time on windows of 400 years as well as changing the whole character of the building. I'm going to drop a link to a site that's for Minnesota that sets up a sort of pyramid, a hierarchy of things that you could do. If people really cared about saving energy they could do the absolute best things necessary to do for almost no money at all. That includes proper thermostats, it includes caulking and weather-stripping, sealing . . . That's the single most important thing and yet people don't do it. As you mentioned earlier they invest instead in granite counters or things that people see like windows or solar panels on the roof because that's what people get value out of because they can see it and nobody sees caulk.

That's the fundamental problem here. It's that people don't have the right information and they're putting their money in the wrong place.

Ben: I don't know . . . Maybe it's worth talking through your pyramid? Have you got it up on screen or just some of the basics and how it leads onto other things?

Lloyd: Well, I've got it on the side. I mean I don't want to hit the screen thing again because I'm afraid it might all go wild but you can click on that link that I put into Minnesota.

But I also want to pick up on another point that Roger made that we have a huge problem with our historic buildings in Canada where we go through a much more severe freeze-thaw cycle than you do in Britain where people are going and they're adding inches of polyurethane foam to the inside of 8-inch old, brick walls and suddenly now it's heat that drives the moisture out of those walls. Without the heat there leaking through the walls a little bit what you're getting is the moisture in the walls freezing and the freeze-thaw destroying the walls. So people are coming and saying: "I'm doing the right thing, I'm gutting my house, I'm spraying it with R40 worth of polyurethane insulation on the inside and 10 years later the house is garbage because the brick has just disintegrated through the freeze-thaw cycle.

Ben: That can't be all practitioners who do that? There must be something wrong in the design because - I'm not saying that that is the way to go - but certain people if they do deep retrofit they know what they're doing and they have allowed for all of these things. I'm not saying that I'm one of these technical people. There must be some . . .

Matthew: I think . . .

Ben: Go on, Matthew.

Matthew: Ben, I think that's a big assumption there to say that people know what they're doing if they're doing a deep retrofit. It's the same as . . . Following that logic we would assume that people building new houses today know what they're doing.

Ben: Very good point. [Everyone laughs.]

Roger: I get the impression that people don't know what they're doing. Certainly professionals, they are thirsty for knowledge and you know they're buying my book and they're certainly coming on courses I'm running. I'm finding a lot of professionals are there so . . .

Lloyd: I want to see that book, by the way. Send me a link. [Lloyd laughs.]

Roger: This is it.

Ben: Ah Roger, look at you. [Roger laughs.] A little plug. If you're listening to the audio feed of this you won't get that but Roger is holding up his book.

Roger: Yeah, I certainly think there are people that want to have that knowledge and there are people coming and trying to get that knowledge but of course we are in a time when we are still trying to understand the physics of all this and what materials will work and the systems that are going to be satisfactory.

The other problem we have to think about . . . You're talking about the problems on the outside of the building with freezing and so on but there's also the problem of the health issues that are going to happen inside the building. We're going to get moulds and those sorts of things if the retrofit isn't done properly and if adequate ventilation isn't put in because we're telling people to block up all the holes but then if they block up the holes there's no ventilation so we've got to have controlled ventilation in that building. Explaining

that, and it's quite a hard thing to explain, we're stopping the draughts but then we're putting a vent in the wall. So it is a complicated thing to understand.

Lloyd: This is absolutely . . . I've seen this problem in the States. It's a huge problem where everybody says: "Save energy, seal your house. Save energy, do this!" And they don't have a legal requirement in their buildings for heat recovery ventilators. At least in Canada, all new houses that have to be sealed to a certain level, it's a legal requirement to put an HRV in.

In the States people are sealing their houses, then they're filling them up with all this plastic stuff, formaldehyde and things like that, and they wonder why people are getting sick. I mean it's a total picture where you have to have knowledgeable people who say yes if you seal it up you can only insulate to this degree because we have to allow this much heat. Yes if we seal it up we have to provide mechanical ventilation. Yes, if we seal it up we've got to use healthy materials. There's a whole picture and there are very few people out there, frankly, who get it. And if I tell people these things sometimes they look at my like I'm crazy: "What you're saying I shouldn't seal my house!" [Ben laughs.]

Ben: Now going onto finances for a moment. I think that this is a big issue because people are not going to prioritise this. Matthew, you said this earlier. When you have the money, are you going to spend it on your house? And if you are starting to become worried about heating bills etc. do you think people will go down the route of actually, "Well I'll downsize instead."

Matthew: Ah no, I think that would be way too drastic downsizing. I think there are two points there. One is having the money and secondly is what you do when you have the money.

I was just talking about this with my wife because we basically pay, we got access to $500,000 to purchase our house. Right now we would struggle to get access to $5000 to do an improvement of some type because I'm the only one working, we've got three kids. [Matthew laughs.] They're going and doing things like swimming. We don't have a lot of disposable income as a household and so there's this dichotomy between the debt that people accept when they're going into a house or purchasing a house, they have this huge amount of money, yet day to day or year on year it's very few people who actually have a significant amount of money or structure things in a way so they can get access to money. So getting access to money in the first place is the problem.

Then secondly, what you actually do with that money and the choices you make and the priorities you make to spend that money. There's just so much stuff out there that you can buy, not just in the home improvement but let's face it we're competing against flat screen TVs and all sorts of other toys and gadgets. Caulking, insulation, draught-proofing - can you think of anything less sexy to buy! [Everyone laughs.]

Roger: I think there's one thing though that is worth bearing in mind and it's important that people do this however they're going to do their retrofit. They work out what the sort of roadmap of their retrofit is. You don't have to do a retrofit all at once. You can do it in stages but as long as you know what those stages . . . You might do it over 10 years but you plan those stages, what you're going to do over 10 years so you're not undoing something you've already done. So you can start off by sealing the gaps in the floorboards which is a job that takes a Saturday morning to do a room. You know, that's a very cheap job. You deal with the heating system which is often something that is often energy inefficient and then you move on to things like the wall insulation and so on later, and maybe actually wait until you're either doing major work or we actually know a bit more about wall insulation and the impact of those things. So I think there's a lot we can do that doesn't cost that much at this early stage.

Matthew: Roger, Roger, I'm interested in your experience - is there a market for people providing that roadmap as a service to the market?

Roger: We do have some companies now doing that. They'll go and do an assessment of your home and they will then give you all the options and the possible solutions that you can do and the prices and how they relate to each other. So yes . . .

Ben: Is this the Green Deal though that we're talking about because this has been a massive flop in the UK?

Roger: No, this isn't the Green Deal that I'm talking about and I think the Green Deal - I'm not going to comment on whether it's a flop or not. [Ben's laughs.] I think it has actually been good because it has raised awareness not necessarily amongst the public but it has raised awareness amongst professionals because they are looking at solutions.

It's also, certainly in the old building world, the Green Deal has raised huge awareness amongst the old building specialists

because it's made them think how you can actually retrofit older buildings.

Matthew: Our equivalent programme or what New Zealand has also done the same to raise awareness. The general public now know what R-value means and two, three years ago that wasn't a common part of vocabulary for general people but anyone who goes into a hardware store or were you to ask someone on the street now they'll know the term R-value or they'll know what it means. That's purely, I think, a result of the government putting up some money for insulation in New Zealand.

Ben: So do you think we'll get to a point where there is a big trigger, that everyone is wanting to do this? Lloyd is that something that you think will eventually come onto our radar or am I dreaming?

Lloyd: No, you're not dreaming and it's going to happen for the same reason it happened in the 70s. Everybody where I live in Toronto is paying roughly $600 more this coming year for natural gas than they did last because last year there was an over-supply and it was cheap and now it's incredibly expensive. And $600 a year, they know, if you look at how much does that finance? That finances $6000 to $10,000 corrections and alterations in their house so people are going to start investing.

The problem with energy in North America is it's just been too cheap. It doesn't put enough pressure on them. Now the strategy that I'm taking of downsizing my house so that I have rent coming in to help pay for those things is also I think a strategy we're going to see more and more of in North America where the great proportion of people are over-housed. So you're seeing a big move into smaller places, into apartments, and a big changeover in the way people are living. And of course my whole thing that I go on about, the single most important energy saving thing you can do in the whole world is get on your bicycle.

Ben: Yes!

Lloyd: So I think people are going to start getting their priorities right.

Ben: No, I like the sound of that. I guess we're coming towards a close in the next few minutes. Are there any other main issues that we feel we haven't mentioned yet? Anyone want to chip in here?

Matthew: Well, I just thought of one which was the industries beyond our technical areas. I'm thinking insurance and valuation and real

estate industries. And I'm excited by what I've seen in the last 12 months going on in the US. I don't know whether you can comment on this, Lloyd? There was this act passed in the US, I understand, or going through, a bill that is going to require property valuers to incorporate the energy efficiency of buildings into that valuation which I know from the market here, most valuers and real estate are pretty clueless on that stuff at the moment. My hope would be that if people can justify investment in their property, not just for their immediate benefit but for the future value gain of that property then that might help them justify an investment.

Roger: We already have Energy Performance Certificates in the UK and at the moment I don't think they're actually driving the market at all but I do think down the line they'll begin to and also . . .

Matthew: Why are they not working now? Why are they not working?

Roger: I just don't think that people are really . . . It's so hard to buy a house because you need a house in a certain location and all the other factors that come into trying to buy a house I think the Energy Performance Certificate is quite low down that list of priorities. And I don't think we've reached the peak yet where fuel prices . . . We're not seeing enough people in fuel poverty. That sounds terrible to say that more people need to be in fuel poverty but I think until we see more fuel poverty and I think it's predicted it's going to reach the sort of people who are quite affluent at the moment, are going to be in fuel poverty down the line . . .

Ben: Yes, but Roger that's not going to make people retrofit more, is it? It might make them just live without heating. How is all this going to happen?

Roger: I think it is going to start to make people retrofit because if they're having to sell their house down the line they are going to see it as a way of, like you put a coat of paint on a house you're going to see retrofitting is something that helps that.

The other thing that's coming in in the UK, I think it's 2018, if you rent out a property it is going to have to reach certain minimum standards, energy efficiency performance standards so that is also going to drive that bit of the market, the rental market, which actually of course is a growing market in the UK.

Ben: Well let's wrap up there. If we have a final thought from each of us as we head down the line. I certainly think it will get to the point where we do want to retrofit. My only concern would be that we try

to move into that property rather than do it ourselves because we don't want to do that but yeah, there has to be some form of value attached to having an energy-efficient home. Lloyd, any thoughts?

Lloyd: Well, it's getting harder and harder to do small renovations. For instance where I am I have a very, very good green carpenter who knows all the right moves but for me to get a building permit I had to provide proof that the place was examined for asbestos, I had to provide all kind of protection for the twigs they call trees around my house. It's getting very, very difficult to do things because of a lot of helpful and appropriate restrictions on how people work where it used to be that you could just go hire anyone, go bash out the wall, go do this and do that. So I think that the whole question of professionals who know what they're doing, of proper training . . . Being an architect, being the former head of the Architectural Conservancy of Ontario fighting to save old buildings and they make sure they're renovated properly.

I think the single most important thing that I can say is, for God's sake if you're thinking about doing this hire a decent trained professional.

Ben: Matthew.

Matthew: Yeah, a couple of things. I think if you have a home . . . If you're in a situation like we are where we're budgetary constrained on a weekly, monthly basis and you really want to improve your lot then definitely go out to banks and lending institutions, similar to the process you'd go through if you were applying for a mortgage or a home loan because I know that in New Zealand there are some banks now that have these things called green mortgages or a sort of extension on your loan. You can actually get some pretty good rates on things that are going to be associated with that asset which are going to improve it. So that would be the first thing - look for some funding options.

Secondly if you are a designer or builder or an architectural designer or an architect, I'm really, really passionate right now about getting more houses seen by architects because so many of our houses are designed and so much of our renovation work is designed - I'm using air quotes now! - because they're not really designed by someone who does know what they're doing so I implore you if you are an architect or an architectural designer you need to get in front of more people and if that means tidying up your marketing or improving the way that you're seen by the

general public then that's what needs to happen. I think more houses need to be seen by trained professionals as well.

Ben: And Roger.

Roger: I think education is the key to it and I think the group of people we've really got to reach are the contractors, the builders who are doing the work, because so often we end up with a performance gap between what the architect has specified, or whoever has specified, even the homeowner has specified, and what actually goes into that house. Simply the builders will cut corners, not all builders do. I'm being very unkind to builders generalising like that but that is the trouble. Things like insulation are often given to the most junior member of the team and they will miss out insulation when no-one's looking. They want to go and have their tea break, they don't want to be stuffing insulation into holes, which is often a very, very unpleasant job. And I think if we can reach those people, I don't know how we do it, but they are the people we really do need to reach.