

A HOUSE OF STRAW

By

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Building his house of straw didn't do the first little pig any favours, but a modern take on straw-bale construction may well be the grand design of the future if results coming out of the University of Bath are accepted by the construction industry.

Think of a straw-bale house and you might imagine a tumbledown shack that leaks, creaks, slumps and smells somewhat of the farmyard. But step into BaleHaus, a startlingly contemporary looking prototype home that has been built on the Bath campus, and there's nary a wisp of straw to be seen. Instead, you're in the hallway of an upside-down house with two bedrooms and a bathroom on the ground floor, and an airy open-plan living area upstairs. It feels like a little piece of Scandinavia has just arrived in Somerset, south-west England.

The straw bales, it turns out, are all packed tightly inside a series of prefabricated rectangular wooden wall frames, which are then lime-rendered, dried and finally slotted together like giant Lego pieces, called ModCell panels.

The problem with straw houses, it seems, isn't that they don't work, but that people perceive them as being a bit hippy and not particularly durable. Add to that the problems of getting a mortgage – very few lenders will consider straw-bale construction – and it's hardly surprising that most homes in the UK are still built of either brick or stone.

The benefits of straw, points out Professor Peter Walker, director of the University of Bath's BRE Centre for Innovative Construction Materials, are that "it's cheap, widely available and a good insulator. It's been used in building houses for hundreds of years".

As a by-product of an industry that exists all over the world – the stalks that remain after grain has been harvested – straw also helpfully soaks up carbon from the atmosphere and locks it in, so long as it is not allowed to decompose. For the building industry, which currently depends on materials with very high embedded energy costs – concrete and brick are expensive in carbon terms both to make and to transport – straw could therefore offer a welcome solution to housing's greenhouse gas emissions.

However stylishly modern your environmentally friendly straw-bale house may look, however, you still want to know that it won't get sopping wet in a thunderstorm or go up in a whoosh of flames if you knock over a candle. The results now being published by Walker and his research partner, Dr. Katharine Beadle, who have spent the last 18 months testing the BaleHaus against an exhaustive list of risk factors that could rot it, burn it or blow it down, so far seem to be reassuring.

When it came to blowing the house down – hydraulic jacks were placed against the walls to replicate wind forces pushing against the bales – the ModCell panels moved a few millimeters, but stayed within the tolerances allowed for by the computer modelling carried out prior to its construction.

The approximate cost of the current modular building system for this design is £ 132,000 from above the concrete slab. For a smallish two-bed roomed house with one large open-plan kitchen / diner, that doesn't seem particularly cheap given that straw is supposed to be inexpensive, and you'd still have to buy the plot and dig the foundations.

(Courtesy : The Guardian, London)