

Specifier Products

This week's structural special has all the latest innovations, from how to build a beer warehouse out of hemp to how to put up a concrete bungalow in two days. Plus, more news from the manufacturers

Product innovation: Things to do with hemp ...

The warehouse has walls made with hemp blocks finished externally with lime render and a green roof. The hemp is such a good insulator, the building won't need any plant to prevent cool beer stored inside warming up



Down in the wilds of Suffolk work is about to start on what might be regarded as a dream project. It is a warehouse that will be built from hemp and used to store beer, and it is said it will probably be Britain's greenest warehouse once it is completed next year. Lime products specialist Limetec is trialling a new construction method using hemp and lime blocks to construct the warehouse walls.

This is not the first time hemp has been used as a construction material. Architect Ralph Carpenter of Modece Architects has been championing the benefits of hemp for several years – his Suffolk village of Hartest is littered with hemp-built houses. These were built by mixing lime and hemp together and ramming the mix into shuttering rather like insitu concrete. It sets hard to form a structural wall with lime plaster used on the inside and a lime render externally.

The appeal of hemp construction lies in the fact that it is extremely green as it locks carbon dioxide up in the finished structure. This is because the hemp absorbs CO₂ as it grows and the lime absorbs CO₂ as it sets. Very

little energy is needed to produce the materials and build the walls and, once constructed, hemp is a very good insulator that allows walls to "breathe", keeping damp at bay.

The downside is that, until now, building with



A typical hemp block

hemp has been very labour intensive, but Limetec is trying to make it as easy as building with conventional concrete blocks. The warehouse and distribution centre that Limetec hopes will showcase its construction method is being built in Southwold for brewer Adnams.

The 470 mm thick walls have a cavity wall constructed of two skins of blocks. This will

then be filled with a lime-hemp mix that is blown into place by machine. The blocks need a high percentage of lime and a stone dust aggregate to give them the necessary structural strength, but this is not so good when it comes to thermal performance. The cavity infill therefore has a much higher proportion of hemp to provide better insulation. Limetec says the finished building will be so well insulated that no plant will be needed to prevent the cool beer from warming up.

In the next 12 to 18 months Limetec hopes to have developed the perfect lime and hemp block. This will have the structural properties of the blocks used on the Adnams building plus the insulation properties of the cavity infill. Limetec says the blocks currently meet British Standards requirements for strength so if it can crack this challenge there will be no reason why hemp construction shouldn't hit the mainstream.

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