Rolling Hills Living

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BUILDING "GREEN" WITH BERN AND BEATE, ROLLING HILLS RESIDENTS

Our stories. Our Pictures. Our community.

BUILDING "GREEN" IN ROLLING HILLS

by Beate Kirmse, Rolling Hills resident

The air was filled with buzzing energy when a group of friends and green building enthusiasts from around the country and Canada came together in Rolling Hills to build the first hemp walls in California!

Over a year ago, my husband Bern Galvin and I ventured into a long anticipated addition to our house by adding an almost 800 square foot room to the back of our Rolling Hills ranch home. The house was one of the first built in Rolling Hills in 1948. When Bern bought the house more than a decade ago, his plan was to demolish and build new. But then he found a photograph of the house with personal notes about its construction by the original owner, Clifford Bundy, written on the back. After reading, Bern did not have the heart to demolish and he renovated the house instead, a few years back.

We are both hemp advocates, Hemp seeds and oil are staples in our kitchen and so are hemp t-shirts and other hemp cloth in our closets. We had heard, read, and seen a lot about the superior qualities of a natural material called hempcrete used for walls and insulation.

Our renovation included two new walls and we decided to build them with hempcrete. Hempcrete is a lightweight hemp and lime biocomposite that is formed by mixing together the shredded woody core of hemp stalks, a lime based binder and water. The lime adheres

to the structure of the hemp hurd and binds the composite together, giving the material firmness. Hempcrete is a non-structural building material and is usually used in connection with a timber frame. Having just two walls of our whole house being built with hempcrete would not give us all the benefits of a complete hempcrete built house, but we saw this project as a great way to get started with hempcrete to become more knowledgeable for bigger, future projects. This is our way to learn more about this wonderful material - where to find the hemp, how to work with it, and how to get it permitted by the Building Department … because there is a "tiny" problem, hemp, hempcrete, and hemp matts are not an approved building material in the USA. In fact industrial hemp is not even allowed to be grown in the U.S.

The project caught the interest of green architects, Rolling Hills city officials, and other green-building experts. For a couple of days, our ranch became a hotspot for invigorating discussions about healthy and sustainable living. There was disbelief amongst visitors that the hempcrete coming out of the mixer, and being dumped into the forms from buckets, would form a compact wall. Comments like "This mix is way too dry; don't you need to add some water?" and "I want to be there when you are taking off the forms" were common, and we and our green contractor just smiled because we knew it would work like a charm. The hempcrete was mixed together on site and filled into wooden wall frames, layer by layer. After a few days the forms came off and revealed a beautiful sustainable and healthy wall.

What is so special about hempcrete? Hemp, like all plants, transforms CO2 during its growth by capturing carbon and releasing oxygen. Using hemp in construction locks up the captured carbon for the life of the building.

Hempcrete is highly insulating with a high R-Value, resulting in an energy efficient building, ideal for meeting today's higher building standards. Hempcrete is also a way of providing thermal mass. This means that hempcrete buildings will

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change temperature more slowly and reduce heating and cooling loads compared with lighter weight building materials with similar R-Values. Hempcrete is natural and vapor permeable (or breathable) helping to facilitate healthier buildings.

Quick benefits overview:

- Environmentally friendly
- Healthy living environment
- Non-Hazardous to work with
- High thermal insulation leading to energy savings
- Fully recyclable
- Durability
- Natural pest resistance
- No waste, zero landfill
- Fire resistant
- Termite resistant
- No dry rot
- Inherently airtight
- High acoustic performance
- CO2 sequestration

We were very happy working with Ryan Hayes of TerraBuilt Construction, a green contractor, and his team, all very experienced and high-end craftsmen. The inspector from the LA County Building Department, as well as other subcontractors, complimented their work numerous times. We did receive our building permit after six month's persistence.

Editor's note:
Beate Kirmse and Bern Galvin are both extremely versatile and interesting people. To learn more about them and their enterprises, check out their websites: http://beatekirmse.com and http://berngalvin.com