

Count the many ways bale construction is good to the last straw

November 20, 2005

As more people seek out "green" building techniques and materials, the environmental and economic benefits of straw-bale construction are becoming better known.

Here are some reasons why straw-bale buildings are safe for habitation and offer an attractive alternative for homeowners and others who care about protecting natural resources and the environment:

- Straw-bale construction is durable and stable, if the straw bales are dry when installed and the finished building is sealed from high concentrations of moisture, which could cause dry rot. Straw has been found in excellent condition in ancient Egyptian tombs.
- Construction-grade bales weigh 85 to 90 pounds and measure roughly 15 to 18 inches tall by 22 inches wide by 48 inches long. Stacked and secured into thick walls, they can withstand substantial vertical and lateral forces. Some one-and two-story straw-bale buildings from the early 20th-century remain standing.
- Straw-bale buildings can reduce by as much as a third the amount of lumber used where a wood-frame structure is allowed by law. This helps save construction costs and old-growth forests.
- When tightly packed and properly sealed with plaster, straw-bale walls provide insulation that's been rated far superior to wood-framed houses. The walls provide excellent insulation from heat, cold, high winds and sound.
- Well-constructed straw-bale structures are nearly fireproof. Tests show plastered straw-bale walls will withstand burning for two hours, while typical wood-framed walls clad in drywall and stucco are prone to burn in half that time.



SCOTT LINNETT / Union-Tribune
A demonstration wall at the Friends Center tests the durability of layers of stucco, mesh and straw.

Improved fire-safety requirements emerged after San Diego's 2003 wildfires. Local researchers found that flames reached into stuccoed walls through eave vents, burning straw-bale and conventional wood-frame structures. San Diego County now allows eave vents in homes in outlying areas only in tandem with specific landscaping and brush management control.

- Rodents and insects can't penetrate properly sealed walls.
- Wheat or rice straw is readily available and inexpensive.
- State law strictly limits the burning of rice straw in the Sacramento Valley, California's largest rice producer, to reduce pollution hazardous to humans and the ozone layer. The state encourages alternative commercial uses for the straw.

Resources

- California Department of Housing and Community Development brochure, www.hcd.ca.gov/codes/shl/straw-bale_QA.pdf.
- California Straw Bale Association, P.O. Box 1293, Angels Camp, CA 95222-1293; (209) 785-7077; www.strawbuilding.org.
- Hubbell & Hubbell Architects, 1970 Sixth Ave., San Diego, CA 92101; (619) 231-0446; hubbellandhubbell.com/thoughts.htm.
- Sustainable Building Systems, 13415 Olive Tree Lane, Poway, CA 92064; (858) 486-6949; strawbalehouse.com.
- "The Straw Bale House" by Athena Swentzell Steen, Bill Steen and David Bainbridge (Chelsea Green, 1994).
- "The New Strawbale Home" by Catherine Waneck (Gibbs Smith, 2003)
- "Small Strawbale: Natural Homes, Projects and Designs" by Bill Steen, Athena Swentzell Steen and Wayne J. Bingham (Gibbs Smith, 2005).
- Development Center for Appropriate Technology, P.O. Box 27513, Tucson, AZ 85726; (520) 624-6628; www.dcat.net.

[»Next Story»](#)

Find this article at:

http://www.signonsandiego.com/uniontrib/20051120/news_1h20strawsid.html