

terra firma

From **straw bale** to **rammed earth**, a return to natural building materials



Rammed-earth wall
(Woodin Construction).

MUD AND STRAW are the building materials of history—and fairy tales. Dirt (probably man’s oldest material) houses one-third of humanity even today. Straw (maybe the most renewable) has a long legacy on the Great Plains—and even longer in Europe. Tucson is among the few American cities that welcome these natural materials. Over the past 100 years, our housing industry has come to rely on a single, price-volatile commodity: dimensioned lumber. Were it introduced today, dimensional lumber might not even fly. Unfortunately, wood rots and burns, and fungus and bugs love it. Nevertheless, all the available technologies to replace wood framing share less than 20% of the homebuilding market. Earth and straw compete with manufactured wood products, concrete, foam, and steel. “It is all too easy to build high-tech, resource- and energy-intensive, toxic buildings, and much harder to build safe and sustainable buildings,” says David Eisenberg, director of Tucson’s Development Center for Appropriate Technology (DCAT). “We need a Hippocratic oath for home construction that buildings should do no harm.” To Eisenberg, straw is one of the better low-impact materials. Every year provides a new crop, and it empowers people with only modest skills to build their own homes. Thick earth-and-straw walls do have one notable characteristic, however. Plans measure homes from the outside, so a 3,200-square-foot foundation yields only 2,900 livable square feet inside.

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unless otherwise noted



Here, a masonry beehive fireplace blends seamlessly with the home’s straw-bale walls
(Woodin Construction).