

# Santa Fe REAL ESTATE Guide

Artisan/craftsman/**builder**

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## The Tradition of Adobe Building

by Kurt Faust

Adobe is still one of the most widely used building materials. There is something innately obvious about using the earth from the locale as the main ingredient in making a shelter or home. The use of adobe goes as far back as 2000 BC in northern Africa and has remained relatively unchanged over the millennia. There are many methods of using mud to make walls, differing mostly in how it is placed. Sometimes it is cobbled together in globs or clumps, sometimes it is poured into forms in monolithic layers, and sometimes made into sun-dried bricks.

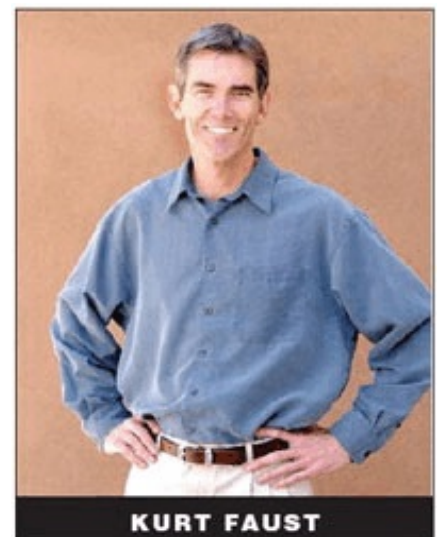
Here in New Mexico we have a tradition of making bricks four inches tall, by ten inches deep, by fourteen inches wide. They are made mostly of sand, clay and water which can vary widely in proportion. Too much sand makes the adobe soft and crumbly. Too much clay makes the adobe shrink and crack.

The right mix depends on the soil at hand and what it needs to be stronger. Some small crushed gravel will strengthen the mix considerably and often a little bit of straw is added to help bind it all together.

Because adobe is locally made and the manufacturing process is low-tech, there is relatively little “embodied energy” in the material. This makes it high on the list of sustainable or green building materials. Embodied energy is the sum of energy it takes to mine the raw material, process and transport it to the manufacturing facility; to make the product; to deliver it to the end-use location; and to dispose of it properly at the end of its life-cycle and reclaim the mining site.

Adobe is a very efficient thermal mass. This refers to the ability of a material to store heat from the winter sun or coolness from the summer nighttime air and re-radiate that temperature back into the home during the opposite 12 hour cycle. This thermal flywheel affect is the basis of many passive-cooling and solar-heating systems.

Adobe has the disadvantage of not being a very good insulator. For that reason we often use spray foam insulation on the exterior of the adobe walls, mostly because of our cold winter season. It allows the heat from solar gain and from the other heating systems to radiate more easily toward the interior of the home instead of



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being conducted to the cold outside. Spray foam has the advantage of adhering nicely to the adobe surface and mimicking the form and texture of the adobe and, when stuccoed, retains the essential soft look of a traditional adobe structure.

In most cases a pure unstabilized adobe block is susceptible to rapid deterioration in wet weather. The stucco system keeps the weather off of the walls and a cement block is used as the first course to raise the adobe off of the ground for protection against moisture. In traditional times buildings were regularly protected with a fresh layer of mud plaster. Sometimes the adobes are stabilized by the addition of oil or cement in the manufacturing process. It is common to add an emulsified asphalt to the water and use the water and oil solution to make the adobes. The asphalt becomes integral to the adobe and significantly reduces the amount of moisture the brick can absorb. These stabilized adobes are excellent for using as exposed adobe yard walls.

Compared to wood frame, adobe construction takes several weeks longer to complete and is a little more costly. The solid thick walls provide some sound attenuation, but require a more involved process to place the rough electric and plumbing in the walls and there is extra labor and skill required to install cabinets and closet shelves. The extra cost of adobe is mostly reflected in the resale value of the home.

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