

Builders Without Borders - *Straw-bale Eco-house* – Fact Sheet

Builders Without Borders is an international network of ecological builders that advocate local, affordable and non-toxic materials in construction. A BWB team came together from New Mexico, Arizona, Colorado, California, Utah, along with local builders and volunteers, to create this demonstration for the USBG “One Planet – Ours!” exhibition. www.builderswithoutborders.org

LOAD-BEARING STRAW BALE WALLS – The 18-inch thick bales in this building, covered with plaster on both sides, are strong enough to hold up a snow-covered roof, and resist winds of over 100 miles per hour.

INSULATION AND MASS – With super-insulating straw bales surrounding you, it’s like living inside a thermos bottle. Mass materials inside your home, such as earth walls and plaster, are like a battery that stores heat and cool.

PASSIVE SOLAR DESIGN – By facing windows to harvest the winter sun, and creating shade on the east and west, nature helps heat and cool your home.

GOOD BOOTS – A wooden “stem wall” raises the bales above the finished floor level. In its permanent location, the eco-house structure will be supported by a concrete foundation, which will protect it from moisture in the ground.

A GOOD HAT – A roof with wide overhangs will protect your walls and foundations from rain. This traditional standing-seam metal roof is non-toxic and with maintenance can last 100 years or more. Gutters direct precious rainwater into your landscape, or rain barrels for future use.

LIME PLASTER – Outside, the traditional lime plaster is weather resistant and allows moisture vapor to move through it. This prevents moisture from condensing inside the wall.

EARTH PLASTER – Inside, the wall finishes are created from clay, sand, and other natural materials, that are beautiful and non-toxic. In fact, clay plaster helps clean your air and manage excess moisture vapor. The side walls show a “just add water” product called American Clay, while the front and back walls show a variety of finished looks achieved from clays harvested or purchased locally.

SUSTAINABLE LUMBER – Most of the wood in this building was milled from local trees and/or salvaged from previous construction.

BAMBOO SHADE STRUCTURE – A fast-growing, strong and beautiful plant, bamboo has many uses in building.

ADOBE & COB ARCH – Earth is a “dirt cheap,” healthful building material that can be formed to create strong building blocks, or hand-sculpted into durable walls.

CEILING INSULATION – Important for comfort and energy savings, the “Ultratouch” ceiling insulation -- made from recycled cotton denim -- is non-toxic and more effective than fiberglass.

ELECTRICAL & PLUMBING – Bale walls can be wired for electricity like any home. Plumbing should be routed through non-bale walls.

TRUTH WINDOW – The unplastered opening in the straw wall is known as a “truth window.” This “window into the wall” has become a tradition in straw-bale homes, revealing in a personal artistic way the how the building was constructed.