

# Builders Without Borders



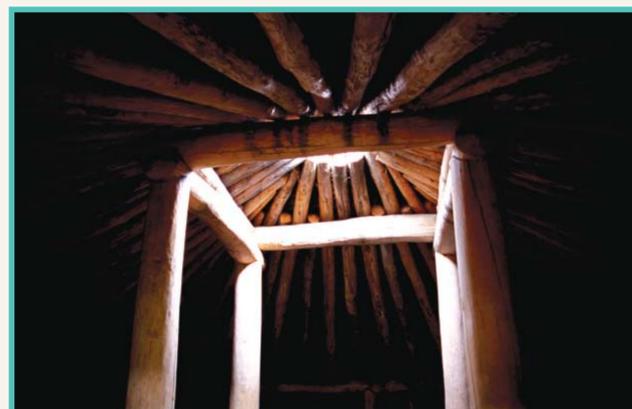
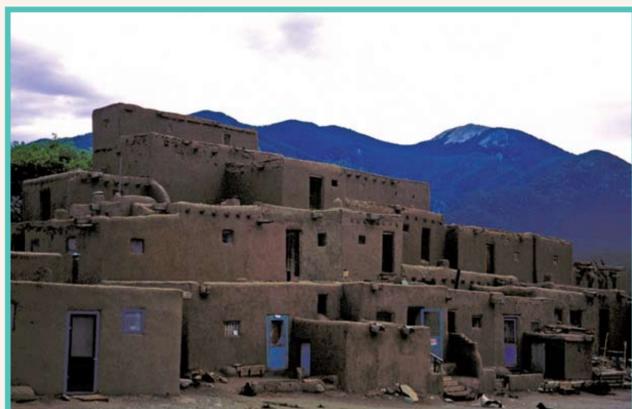
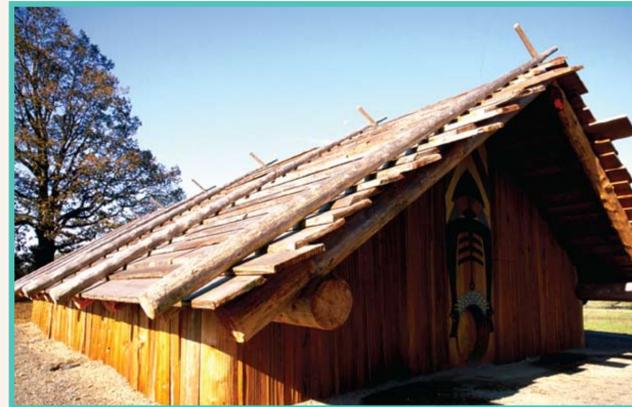
Builders Without Borders is an international network of ecological builders who advocate affordable, energy-efficient construction, utilizing locally-available natural materials, such as earth and straw. We create educational books and videos, hands-on workshops, and other opportunities to empower builders.

BWB promotes a climate-appropriate, relationship-based process that allows individuals and communities to find their own solutions through dialogue and collaboration. We believe that the solution to homelessness is not merely housing, but individuals and communities who know how to provide housing for themselves.

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119 Main Street, Kingston, New Mexico 88042 • [www.builderswithoutborders.org](http://www.builderswithoutborders.org)  
BWB is a project of NetWorks Productions, Inc., a nonprofit organization.

# America's Traditions of Green Building - I



From Hopi Stone houses, Southwestern adobe dwellings, sod houses in the Plains, Acadian style in Louisiana, to timber homes throughout the Pacific Northwest, “green” and locally appropriate building practices are engrained in our history. With the advent of air-conditioning, central heat, and inexpensive energy, these traditions became forgotten to all but a few. Thanks to practitioners like those in the Builders Without Borders network, these time-tested materials are now being incorporated into modern buildings throughout North America.

## Native American Dwellings

Early Americans sheltered themselves in response to their climate, using the natural materials around them.

# America's Traditions of Green Building - II

## European Settlers

Bringing traditions with them, Europeans also built with the natural materials available where they settled.



## Historic Straw Bale Buildings

After the horse-powered baling machine was developed in the 1870s, farmers discovered that comfortable homes could be built of stacked and plastered straw bales. Historic, century-old houses in the Nebraska Sandhills inspired modern straw-bale construction.



# America's Traditions of Green Building - III



## Contemporary Straw-Bale Buildings

Adaptable to climate, site and personal preference, straw-bale construction is re-emerging across the U.S. and around the world.

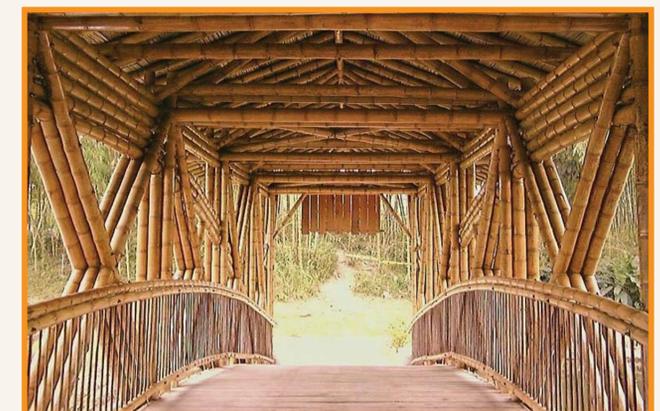
### The Benefits of Straw-Bale Construction

- The super-insulated walls reduce utility costs and CO2 emissions.
- Straw is a plentiful renewable product with very low “embodied energy” that is resource efficient from production, through its lifetime, to eventual demolition.
- Plastered-bale walls resist fire, high winds, and earthquakes.
- Natural plasters such as earth and lime are non-toxic and help to moderate indoor humidity.
- Bale-building methods empower owner-builders and communities to create beautiful homes in a variety of styles.



## Other Natural Building Systems

Locally sourced natural building materials are often less expensive and can create healthful, comfortable homes in any climate.





## **Straw-bale 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](http://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.



### **Straw-bale Resources**

*BWB is an international network of ecological builders working together for a sustainable future.*

[www.builderswithoutborders.org](http://www.builderswithoutborders.org)

### **Eco-house Building Team**

**Athena & Bill Steen** - Plasters

[www.theCaneloProject.com](http://www.theCaneloProject.com)

**Catherine Wanek**, BWB Co-Director

[www.StrawbaleCentral.com](http://www.StrawbaleCentral.com)

**Derek Roff**, BWB Co-director

[www.BuildersWithoutBorders.org](http://www.BuildersWithoutBorders.org)

**Darryl DeBoer** - Bamboo

[www.DeBoerArchitects.com](http://www.DeBoerArchitects.com)

**Doni Kiffmeyer & Kaki Hunter** earthbags, plasters, carpentry

[www.OKOKOK.org](http://www.OKOKOK.org)

**Laura Bartels** - straw bales, plaster

[www.GreenweaverInc.com](http://www.GreenweaverInc.com)

**Marisha Farnsworth & Keven Rowell**

bamboo, plasters

[www.Kleiwerts.org](http://www.Kleiwerts.org)

**Massey Burke** - adobe and cob

[www.Kleiwerts.org](http://www.Kleiwerts.org)

**Michael (Meka) Bunch**

adobe and cob

[www.Kleiwerts.org](http://www.Kleiwerts.org)

**Rosemary Morin** - plasters

[www.EarthAndStrawInc.com](http://www.EarthAndStrawInc.com)

**Steve Kemble & Mollie Curry** –

straw bales, plasters, carpentry

[www.MudStrawLove.com](http://www.MudStrawLove.com)

### **Washington D.C. Resources**

**Amicus Green Building Center**

[www.amicusgreen.com](http://www.amicusgreen.com)

**Bill Hutchins** - Architect

[www.heliconworks.com](http://www.heliconworks.com)

**Clay Works** - plaster supplies

[www.clayworkssupplies.com](http://www.clayworkssupplies.com)

**Community Forklift** – surplus, salvaged & green building materials

[www.communityforklift.com](http://www.communityforklift.com)

**Kraftwerks Sheet Metal and Slate** roofing and slate siding

[www.kraftwerks-inc.com](http://www.kraftwerks-inc.com)

**Nature Neutral**

green building products

[www.natureneutral.com/](http://www.natureneutral.com/)

**Patricia McArdle** - Solar Cooking

[www.solarcookers.org](http://www.solarcookers.org)

**Polly Bart** - Contractor, straw bales

[www.greenbuilders.com](http://www.greenbuilders.com)

### **EcoHouse Supporters:**

**American Clay**, New Mexico

[www.AmericanClay.com](http://www.AmericanClay.com)

**UltraTouch Insulation**, AZ

[www.BondedLogic.com](http://www.BondedLogic.com)

**Gibbs Smith, Publisher**

[www.gibbs-smith.com](http://www.gibbs-smith.com)

**The Lifebridge Foundation**, NY

[www.Lifebridge.org](http://www.Lifebridge.org)

**New Society Publishers**, Canada

[www.NewSociety.com](http://www.NewSociety.com)

**Solar Energy International**, CO

[www.solarenergyinternational.net](http://www.solarenergyinternational.net)

**Permaculture Credit Union**

[www.pcuonline.org](http://www.pcuonline.org)

**U.S. Botanic Garden**

[www.usbg.gov](http://www.usbg.gov)