

Living Green

Green Building returns to its roots, through the construction of Rammed Earth Homes

The term “Green Building” has become one of the more important buzzwords of the 21st century. In an age of rising gas prices, inflated goods and services and scarcity of natural resources, more and more Americans are discovering the benefits of living in a home that is not only friendlier to the environment, but healthier, more durable and more cost-effective, as well. Compared to a standard home, the green home tackles all these issues by using less energy, water and natural resources, creating less waste and raising the standard of living for the people inside.

Oddly enough, though many articles have been written on the subject, most concern “green makeovers,” or upgrading an existing home by introducing green elements to it, such as solar power, energy efficient appliances, low-flow showerheads, compact fluorescent light bulbs, etc. But what about those homes that start out green? Houses built with a green, energy efficient lifestyle in mind? What about the builders who use a combination of innovative, time-tested practices, like Rammed Earth, and exciting new technologies

powered by scientific breakthroughs and advanced products? These unsung heroes know that to be truly “green,” one must start from the ground up.

Though it may seem like a new concept, the greening of homes has actually been around for ages. In fact, history is scattered with examples of green living, long before the term was ever coined. Perhaps the oldest form of green housing is Earth Building. Known by its modern day French term, *pisé de terre* it has come to be known as Rammed Earth Building here in the United States. As an application, however, it far eclipses the Americanization of the term.

David Easton, in his book “The Rammed Earth House” points out that Earth housing “predates the development of the opposable thumb” and that even today, “50 percent of the planet’s humans still live in shelters made of earth.” Why? Because instinct has been telling us, since the dawn of time, that a well-built home will not only afford shelter, but sustain itself affordably.



Casa de Buena Tierra in Las Cruces is an example of modern rammed earth construction.



Chan Chan in Peru is an ancient example of rammed earth construction.

Archeological evidence going back nearly 10,000 years shows that there have been entire cities built of raw earth, including Jericho, history's earliest city; Akhlet –Aton in Egypt; Chan Chan in Peru and Duheros in Spain. As Easton points out, these were not merely examples of “primitive, simple housing, either, but vast and imposing monuments, temples, ziggurats, churches and mosques.” Famous buildings such as the Alhambra in Granada, the Potala Palace in Lhasa and even the 5,000-year-old Great Wall of China are just a few examples of rammed earth building that has withstood the test of time.

The process itself is simple, consisting of the compressing, or ramming, of soil into forms that create building blocks or constructing entire walls, layer by layer. Traditionally, rammed earth buildings have been common in arid regions where wood is in scarce supply. Another limiting factor was that the best compressive strength generally comes from soil that is high in sand and low in clay. Through the use of modern technology and machinery, however, stabilized rammed earth buildings can be constructed almost anywhere and are now seen in areas where the concept would once have been seen as foolish or

impossible.

In fact, over the last 30 years or so, there has been a boom in rammed earth building worldwide, including the United States, Canada, France, Germany, Australia and even New Zealand. The Eden Project in Cornwall, England, The Chapel of Reconciliation in Berlin, Germany, and The Pompallier House at Russell in New Zealand are examples of modern rammed earth building in traditionally non-supportive regions. As an example, the Australians have solved the problem of water damage due to high humidity and rainfall by spraying rammed earth walls with a transparent plastic created specifically for use on earth walls. Ingenuity, it turns out, is a vital key when eco-friendly and energy efficient living is a must.

As with all building practices, the materials used are only the beginning. The philosophy of green building begins with a good foundation and a dedication to using only earth-friendly building supplies and energy efficient products. The U.S. Green Building Council has taken the lead in this area using an integrated design and construction approach called the Leadership in Energy and Environmental Design (LEED) rating system. By taking into consideration

five areas of concentration--the Site on which a home is built, the use of potable Water both indoor and outdoor, the efficient use of Energy, the type of Materials used in the construction and the Quality of the living arrangements for occupants—a truly Green environment can be achieved.

To help in this pursuit, many local and state governments, utility companies and other entities across the country offer rebates, tax breaks and other incentives for eco-friendly building and living. In 2007, the New Mexico State Legislature passed a tax incentive to encourage commercial and residential builders to design and construct buildings with high requirements for energy efficiency and overall sustainability. The incentive is called the Sustainable Building Tax

Credit. A full database of similar tax incentives, broken down by state, can be found on-line at www.GoodToBeGreen.com

It all comes back to creating a sustainable green living environment by starting, sometimes literally, from the ground up. Of all known practices available to those wishing to live a completely green lifestyle, Rammed Earth homes meet all of the above requirements, by starting from scratch and returning to the most ancient practice of home building, thus providing the best possible foundation for healthy, green living. It's not only a great place to start, it pays homage to an ages old practice and provides a foundation for eco-friendliness that has yet to be duplicated by any other form of construction.



Soledad Canyon's work crew use rammed earth techniques to build their modern homes.

Sources:

The Rammed-Earth Home, by Anthony F. Merrill, Harper & Brothers Publishers, 1947.

The Rammed Earth House, by David Easton, Chelsea Green Publishing Company, 1996.

Green Building with Susie Marbury, New Mexico Energy, Minerals and Natural Resources Department, Energy Conservation and Management Division.