About: POURED EARTH

1. What is the difference between Poured Earth and concrete....and why is it a more earth friendly building material?

Naturally occurring, unprocessed soils usually contain clay, which the concrete industry historically considers the "enemy" as it weakens a concrete mix. The clay, therefore, must be washed out which is both water intensive and costly. Otherwise, Poured Earth, rammed earth and concrete mixes have a similar granular composition. Poured Earth and rammed earth, however, use a much wider variation of soils – including clay – making it possible to use minimally processed on-site soils.

All these mixes are defined by aggregate which ranges from sand and silt to rock up to 3/4" diameter. Another important common factor is that the aggregate is packed tightly to allow the binder to act effectively. Imagine a jar of marbles that you can reach deep down into to pull out a marble near the bottom. Now add sand to this jar and shake up the mix and try the same thing. You can't get the marble very easily because the space between the marbles has now been filled with sand and the marbles no longer easily slide by each other.

And now, with the introduction of magnesium oxide (MgO) to replace Portland cement as the binder, Poured Earth has become a net minus building product. This is because unlike Portland cement, which is a major contributor to global warming, MgO actually sequesters more carbon than it uses in its production. Hence, the carbon footprint is net minus!

Poured Earth also allows the use of on-site materials. Just as we are able harvest on-site resources such as the sun, wind and rain for our sustainable building purposes, Poured Earth gives us the opportunity to thoughtfully use site soils to build walls, floors, interior plasters, and even roof systems.

By using on site resources we minimize and/or eliminate the need for energy-intensive foreign oil products that are trucked across the nation and around the world. ***Using sustainable, local materials grows the local economy by maintaining and creating more "green" jobs.***

Properly designed "high mass" Poured Earth homes minimize, and can potentially eliminate, the energy required for home heating and cooling. This is because the "mass" acts as a highly durable energy storage system that is able to last for hundreds of years. (For more information on "high mass," see FAQs about High Mass and Passive Heating and Cooling.)

Poured Earth also minimizes the use of energy intensive portland cement by reducing and potentially replacing it with synthetic and/or natural sources of low to no energy use such as flyash. Flyash is a bi-product of the coal industry that, for many years, was simply discarded. The use of flyash in Poured Earth, therefore, can be seen as providing a green "bridge" to newer binders (such as natural flyash and magnesium oxide that are carbon neutral and fully sustainable) until they become more cost effective and readily available.

3. Is it more expensive to build high mass (Poured Earth) walls?

No.
Excellent architectural design results in a more efficient use of space that does not compromise the overall sense of spaciousness (normally associated with larger homes) yet easily ***reduces building costs by 10-20%***. This more efficient use of space also pays for the cost of the increased building quality that Poured Earth and other high efficient wall systems such as SIPs (structurally insulated panels), ICFs (or insulated concrete forms) or aerated concrete block provide. They are all less expensive than comparable energy efficient adobe and rammed earth applications.

Unfortunately, we have been trained to think of cost within the context of a short-term return on investment – say 12 months or less. However, this way of thinking fails to look at the long-term return on investment that often produces the better profit. It also produces a healthy, comfortable, energy efficient home that will last for generations. As the ad says: the price of health, comfort and energy savings……PRICELESS."