

African Building Methods and Materials

Extensive renewable materials and a multitude of natural methods are easily available, for the building of inexpensive, sustainable, fireproof and long lasting dwellings in Africa and around the globe, if one so desire them. Whether your planned home is quaint, moderate or luxurious, the natural materials needed are right under your feet, usually on the very property you purchased. Sand, gravel, mud, soil, rocks, stones, clay, and limestone are some of the natural, healthy (non toxic) materials that can be used for the construction of “Forever Homes”. Natural methods used for construction such as **Rammed Earth, Earth/Sand Bagging, Adobe** as well as several other styles of building, can be made merely from the very inexpensive and renewable resources listed above

The **Rammed Earth** method simply required the correct combination of soil, clay, gravel, water and limestone. The damp mixture is then rammed or pressed into the temporary wood frame/formwork which is constructed to mold the inserted earth into the shape of fourteen-eighteen inch walls. After the frames are removed, it is left to cure or dry and is then plastered or can be left with its own natural earthy look. These structures are not only durable for generations but fire and earthquake proof. Because of the wall’s thickness, the thermal value can resist the heat of the sun for up to twelve hours thus eliminating the need for air conditioning. In a tropical climate, the lack of need for AC is a major economic and energy saver.

Sandbagging or **Earth bagging** is another way of building a home out of the earth. Sand and/or soil are bagged like cement, bags are then stacked high like bricks thus forming walls. Blockings for windows are

formed and the structure is then plastered over. The result is flat smooth walls. One wouldn't know the difference between these and any of the other productions of hard surfaced walls such as cement or brick. This of do-it-yourself building can save lots on construction cost and preserve the regenerative nature of the earth. This type of construction also provides a cool insulation from the sun in a warm climate where as again, no AC would be required.

Adobe is a natural brick making process made from a mixture of sand, clay and water with an added fibrous binder like straw, sticks or manure that acts like rebar (iron rods) holding everything together. Frames are used to get the desired brick shape. They are left to dry in the sun for an appropriate amount of time. Mud mortar is used to attach/lock bricks together. Mud can also be used as a plaster. These Adobe structures are very strong. Some of the oldest buildings currently in existence, in the world, are made from this building process. Because of their thermal mass/insulation features, these structures too are heat blockers and thus do not require AC. This means of construction is not earthquake proof because the use of mortar can be a weak link.

A combination of the above methods can also be used. That is, Adobe blocks or Sand bagging can be placed on top of Rammed earth to add a second story/floor. Because of the Earth's Regenerative properties, that is, the earth's ability to Re-new what is naturally extracted from it, these methods are not destructive. African building systems lessens the impact on the environment, without sacrificing comfort, beauty or our health.

