Many people use R-Values to determine which construction materials have the best thermal performance. Building materials with a high R-Value generally have a low thermal mass which means you must have thermostatically controlled artificial heating and cooling to keep the inside room temperature stable.

The high energy-efficiency of a Rammed Earth home is not due to its R-Value, because rammed earth actually has a very low R-Value. The high energy efficiency of a well-designed rammed earth home is due instead to its high thermal mass.

High thermal mass gives rammed earth the incredible ability to greatly slow the transfer of heat through the walls which in turn helps to keep your home cooler in summer and warmer in winter. What this means is that a well-designed solar-passive rammed earth home will maintain a more constant room temperature without the need for air conditioning in most climate zones. Many people live in well-designed solar passive rammed earth homes with no need at all for air-conditioning, taking advantage of the natural outside fluctuations in air temperature to keep the internal room temperature stable.

In order to obtain the most energy-efficient home to suit your climate zone, it is very important that your home is correctly designed to incorporate solar-passive design principles.