

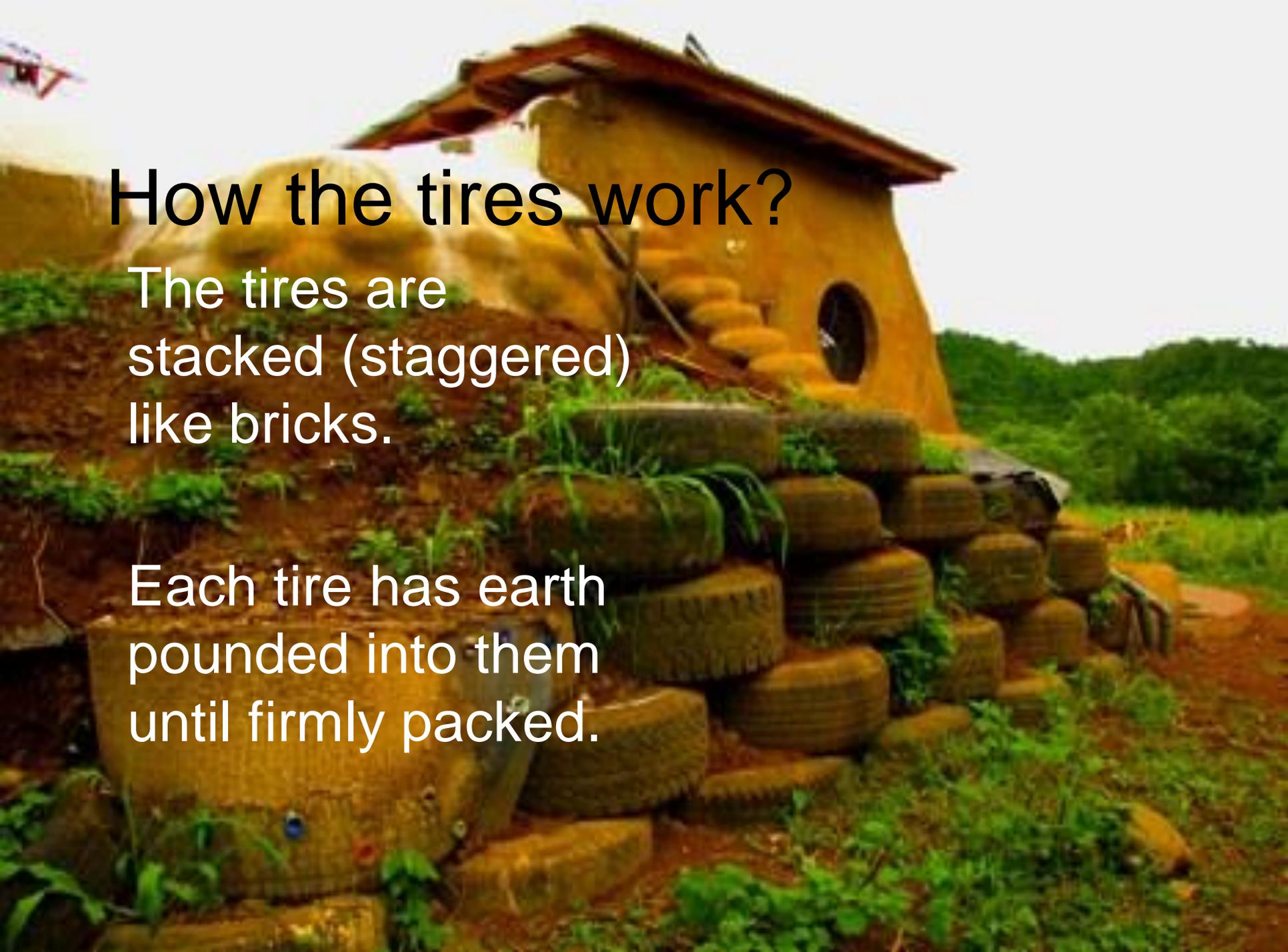


**Earthship**

# What is Earthship?

A earthship house is made up of rammed earth and tires.



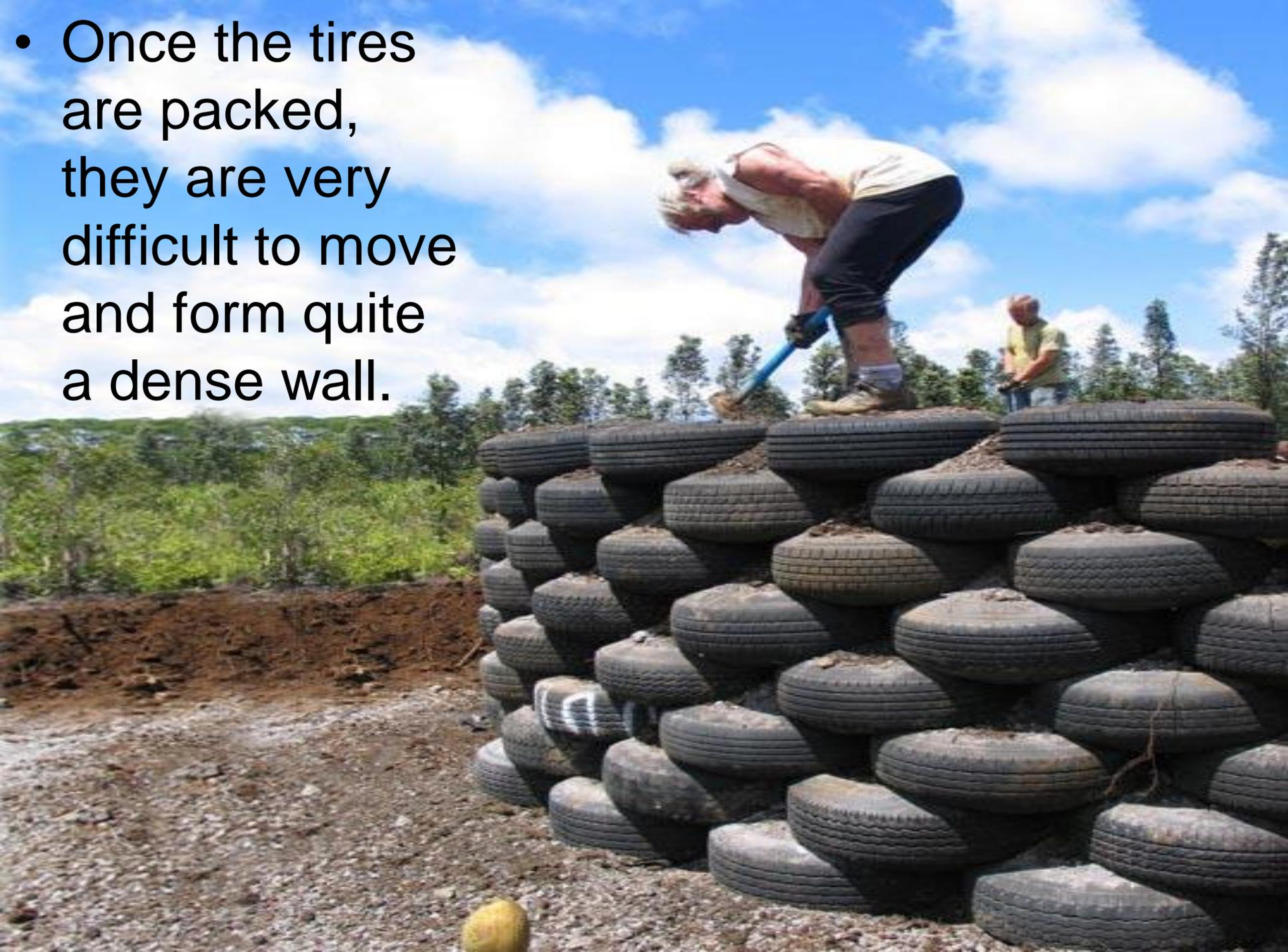


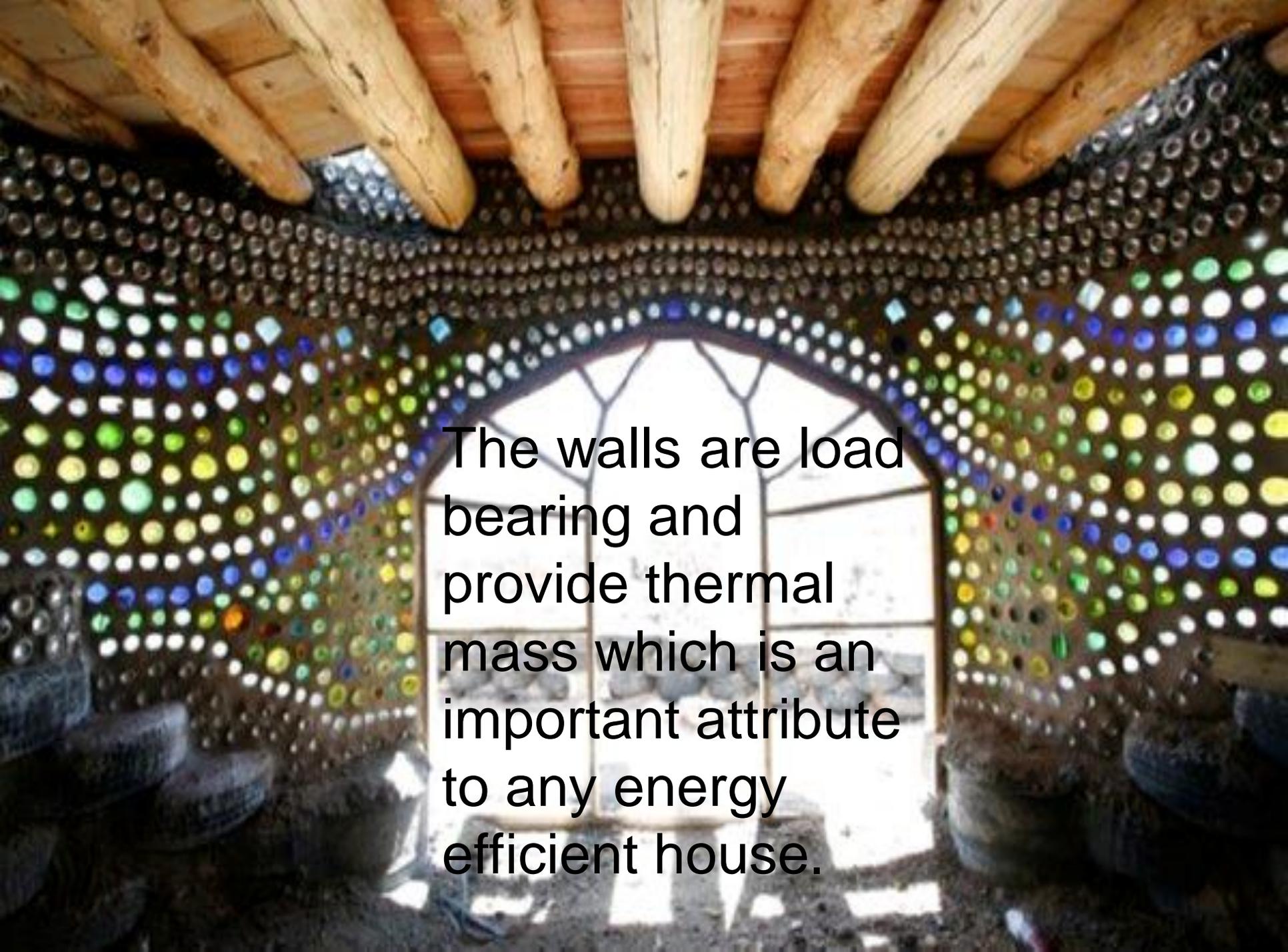
# How the tires work?

The tires are stacked (staggered) like bricks.

Each tire has earth pounded into them until firmly packed.

- Once the tires are packed, they are very difficult to move and form quite a dense wall.



The image shows the interior of a dome-shaped structure. The walls are covered in a dense pattern of small, colorful perforations (holes) in various colors including blue, green, yellow, and white. The ceiling is made of thick, light-colored wooden beams. In the center, there is a large, arched window with a dark frame and a grid pattern. The floor is dark and appears to be made of earth or stone. The overall atmosphere is warm and natural.

The walls are load bearing and provide thermal mass which is an important attribute to any energy efficient house.



Thermal mass stores heat and releases the heat slowly. This keeps indoor temperature constant while outside temperatures fluctuate.

Once the walls are in place, the walls are quite often plastered over and appear very similar to an adobe style house.



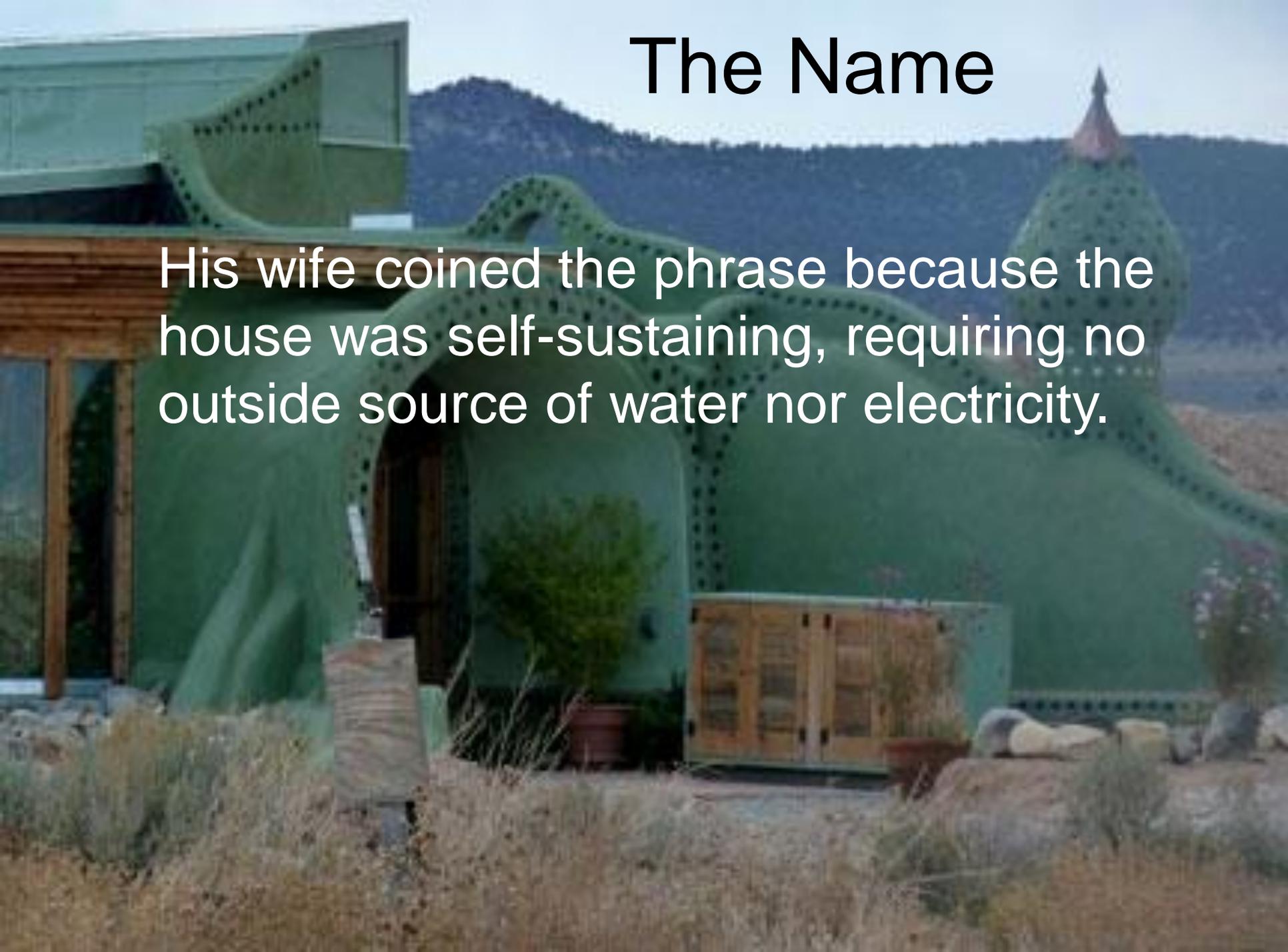
# History

In 2000, Michael Reynolds and his team came to build the first residential earthship in Boingt (Belgium).



# The Name

His wife coined the phrase because the house was self-sustaining, requiring no outside source of water nor electricity.





It consists of cold(er) air coming in from a front ("hopper") window, especially made for this purpose and flowing out through (one of) the skylights that are placed on the earthship.





In 2007, CLEVEL Earthship Biotecture obtained full planning permission to build on a valuable development site overlooking the Brighton Marina in the UK.



**The application followed a successful six-month feasibility study, orchestrated by Daren Howarth and funded by the UK Environment Agency and the Energy Savings Trust.**



**The successful application was for sixteen one, two, and three-bedroom earthship homes on this site.**





# What are the advantages of building an earthship?



# Energy Efficiency

Earthships provide a large amount of thermal mass. This helps keep the house cool in the summer and warm in the winter.



# Self-Sustainability



The homes are designed to take advantage of natural resources. The homes are typically built in rectangular form and oriented to take advantage of passive solar radiation.

# "Buildability"



Earthships can be owner built. There is obviously, quite a bit of labor involved but if time is not a factor, a house of this type could be built with just a couple of workers.

# Easy Availability



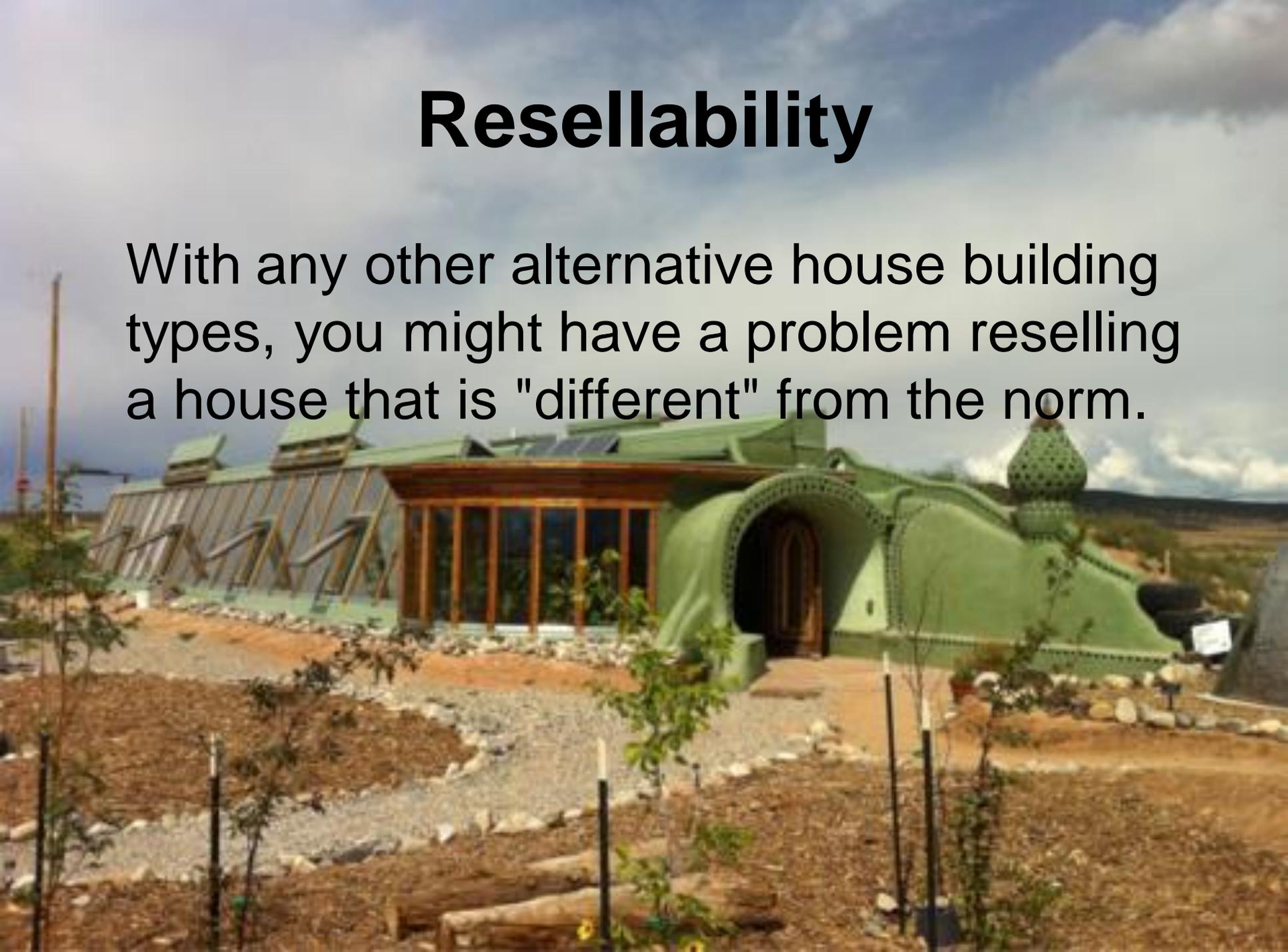
Not only are tires easy to get, some places will pay you to take them away! There are plenty of tires, bottles and aluminum cans around.



**What are the disadvantages of building an earthship?**

# Resellability

With any other alternative house building types, you might have a problem reselling a house that is "different" from the norm.



# Building Permits

The image shows a large, sculptural building with a light-colored, textured facade. The walls are covered in a grid of small, circular perforations. The building has a central arched entrance and several rounded, tower-like structures. It is situated in a dry, desert-like environment with sparse vegetation and a clear blue sky with scattered white clouds in the background.

The walls are the biggest hurdle. The rest of the house is built using conventional building methods, but getting approval for the rammed tires might be a problem.

# Financing

The image shows a long, single-story building under construction. The building features a series of arches along its length. The facade is made of a dark, textured material, possibly rammed earth or a similar sustainable material. A wooden ladder is leaning against the left side of the building. The sky is blue with some white clouds. The overall scene suggests a sustainable building project in progress.

Earthships are a very new concept in building design. Fannie Mae, the nations largest supplier of home loans are exploring environmental loans that might include earthships sometime in the future.