



How to Build an Earthbag Dome For \$300

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Earthbag construction can be a wonderful way to build a small (or large) home. [Earthbag houses](#) are typically simple to design and build, especially when building a dome-shaped home.

These little structures can be adorned with a living roof, or covered in mud or plaster. They are structurally sound, and when complete can blend into the landscape, thereby minimizing the effects on the environment. They're also inexpensive to build and might be an option for those folks to build on a limited budget.



© Owen Geiger

The earthbag dome structure in the photos below was built for Mother Earth News by Owen Geiger as an example of the construction technique. At the time of the build, in 2009, this beautiful creation cost him only \$300.

This dome could be used as a shed, shelter, above ground root cellar, or playhouse, among other things. With a little ingenuity and creative thinking, one can easily see how this type of structure could be scaled up to build a larger sized home. Read the original article below.

[Low-Cost Multipurpose Earthbag Building](#): *With this novel technique you can make an earthbag building to serve as a studio, garden shed, chicken coop, or root/storm cellar — no permit required! ~[Mother Earth News](#)*



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Earthbag dome home - Images © Owen Geiger

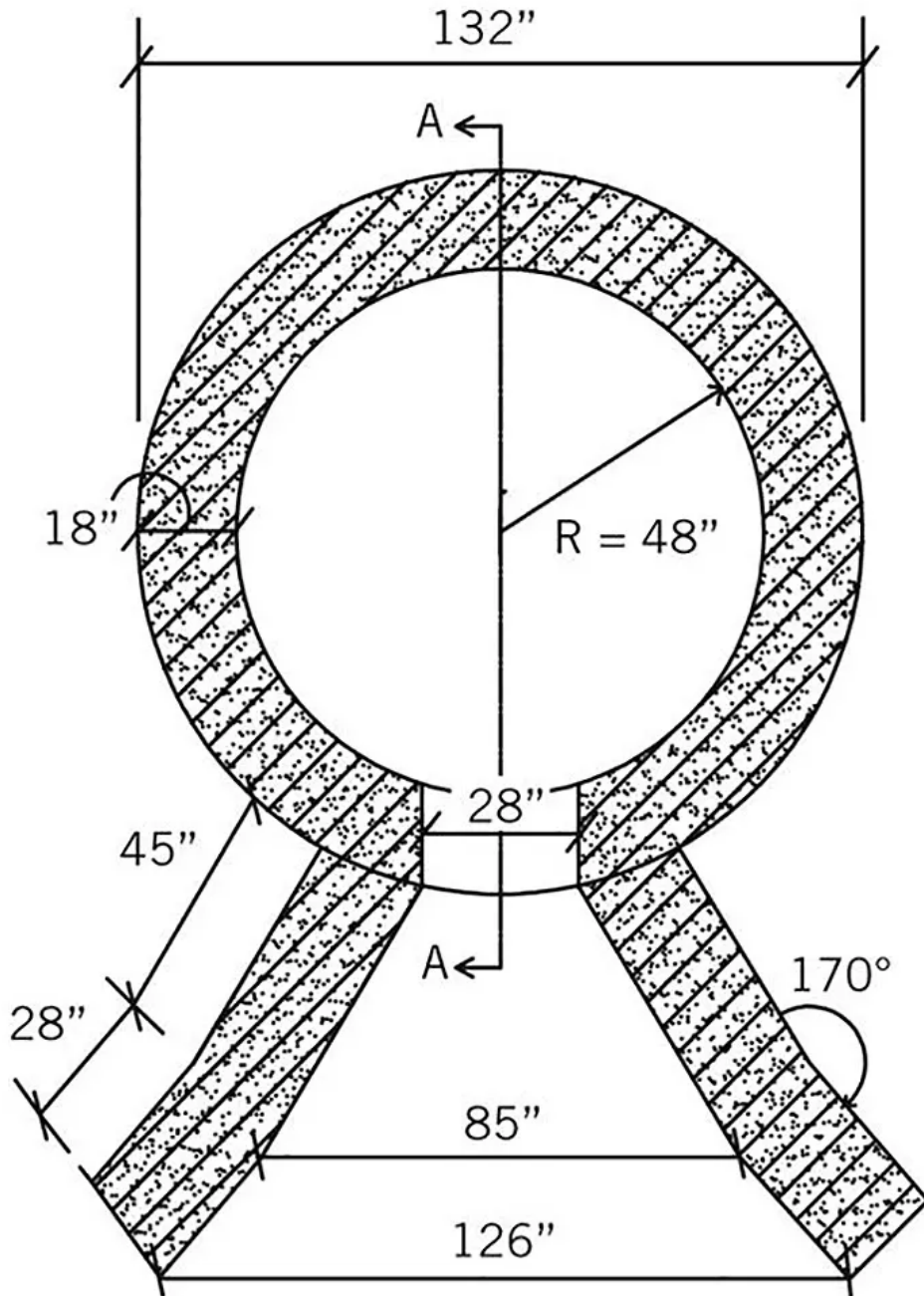
"Domes are the strongest form in nature and easily support enormous forces. We added about 20 truck loads of soil on the dome without it moving one bit. I'm confident another 100 truck loads could be put directly on top and it wouldn't make any difference, because the dome is all in compression, and tamped earth (road base in our case) can support very high loads. So if you want to build underground, domes are a good way to go - that or roundhouses. Both gain their strength from the circle: forces (loads) are transferred directly to the ground. There are no components to fail as in post and beam or wood frame walls."

Instructables - [How to Build an Earthbag Dome](#) by [Owen Geiger](#)

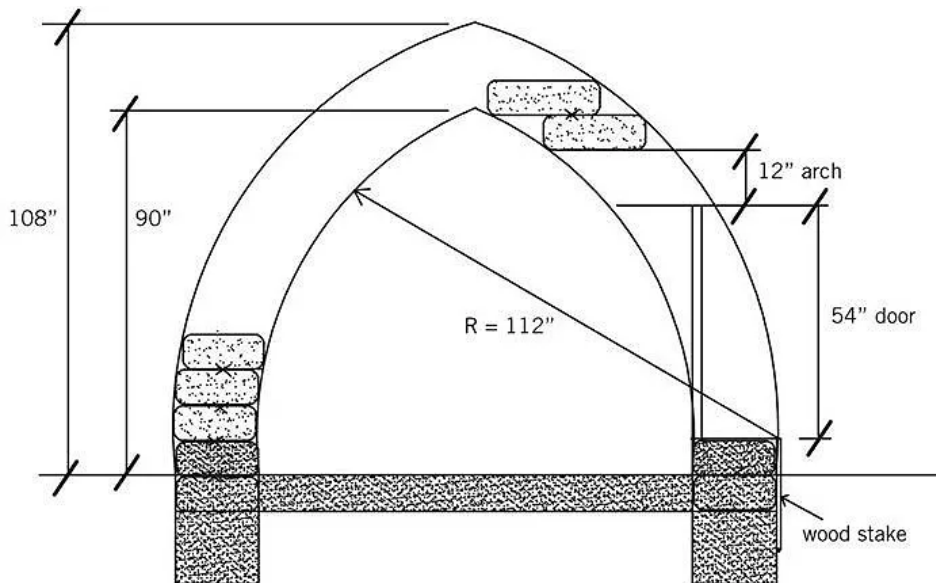
How to build an Earthbag dome

Owen Geiger simplifies the earthbag dome building process on his [Instructables](#) page, using the dome he built for Mother Earth News as an example.

The first step is the plans, which are not only necessary when considering space and materials, but also help to understand the building process.



Earthbag dome plans



© Owen Geiger

After the plans are determined, the ground is leveled and prepared for the foundation bags. The foundation layer uses double-bagged gravel to prevent wicking moisture into upper layers of bags. Soil is then tamped around the foundation layer to hold it in place.



Earthbag dome foundation © Owen Geiger

A string line from a center stake is used to ensure each level is a perfect circle. The radius of each level is slightly smaller than the preceding level.



© Owen Geiger

Every course is tamped and leveled before moving on to the next course.



© Owen Geiger



© Owen Geiger

Barbed wire is placed between each course to help hold the bags in place.



© Owen Geiger

In this dome, tires are used to form the window.



© Owen Geiger



© Owen Geiger



© Owen Geiger

Earthbag domes are most often finished with plaster, but the builders opted to put a living roof over this one, which requires more maintenance, but looks beautiful.



© Owen Geiger

The front entrance of the dome is finished in yellow-pigmented plaster. This dome, in the builder's yard, is used as a tool shed.



© Owen Geiger

Kind of reminds you of a Hobbit house in the Shire, right?

via [Mother Earth News](#) and [Instructables](#)

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FOR \$300



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alexaltliving

Tuesday 8th of September 2020

I've been thinking about putting an earth-berm around my dome home kit that I purchased from simpleterra.com and never even knew that you could even build a dome home from earthbags. Great article.

Building with the Earth – S. A. Clark

Sunday 14th of June 2020

[...] are not very picky, and the tools are basic. The cost for an eight foot wide dome could be as low as \$300. These domes have been used in refugee camps or after disasters, and have been made into [...]

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[...] How to Build an Earthbag Dome For \$300 [...]

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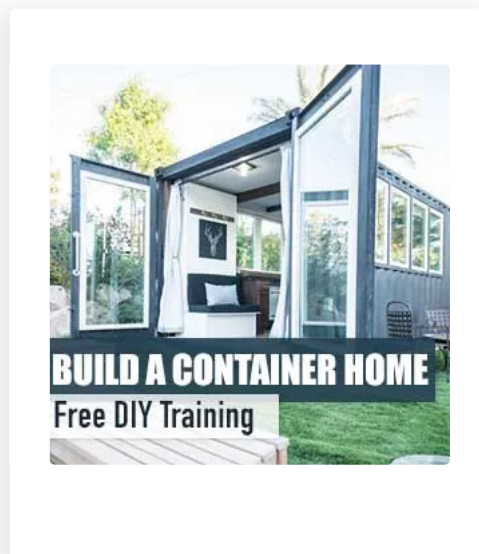
Monday 14th of March 2016

[...] Stack bags of dirt to make a suitable storm shelter to use in an
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How to Build an Bulletproof Earthbag Dome For \$300 | DIY Projects

Sunday 15th of March 2015

[...] by Off Grid World [...]



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