What is a CoolBot Trailer?

Hampshire College

FOR MORE THAN 25 YEARS, THE HAMPSHIRE COLLEGE FARM existed as a CSA without any cold storage. Although this was not unique to our CSA in any way, it had a significant impact on the Farm's decisions regarding harvest and distribution. Recently, however, with the help of a National Science Foundation (NSF) grant for Advanced Technological Education, we were able to fund a mobile cooling trailer as modeled by North Carolina State University's Pack 'N Cool. Using mostly its construction and budget models, easily found online, we set off to build our own cooling trailer with the intention of improving the efficiency of our harvests and helping us reduce waste. Additionally, because of Hampshire College's huge solar-energy initiatives (also funded in part by the NSF), we are able to plug our trailer into our solar-paneled CSA barn. Believe it or not, the sun keeps our veggies cool!

The CoolBot trailer is relatively simple in both design and execution. With a decent trailer, plenty of foam insulation, hardware, plywood, an air conditioner, and a CoolBot controller (which drops the A/C temperature range down to 34 degrees), we were good to go. For a more detailed construction summary, please see the following resources: **www.evergoodfarm.com/trailerbuild.html** and **https://plantsforhumanhealth.ncsu.edu/2012/08/20/pack-n-cool/**; both of these links can be found on the CoolBot website: **www.storeitcold.com**.

COSTS

Pack 'N Cool Mobile Refrigeration Trailer

Trailer (6' x 10')	$2,000
Transportation	$50
AC unit + CoolBot	$900
Insulation	$800
Painting	$300
Plywood	$100
Hardware	$200
Misc.	$100
Total	**$4,450**

This is what a brand-new trailer that costs a couple grand looks like! Counterintuitively, the next step is to rip everything out!

Trailer with all the plywood removed and electrical wiring and lights taped up. Next, we made a hole for the AC unit in the back and then measured, cut, and framed out the foam board insulation.

This insulating is funny business. We put four inches of foam board everywhere except the ceiling (because cold air sinks). The first layer went one way and then the second layer crossed over the first going the other way, in order to eliminate air gaps. *(Photo: www.evergoodfarm.com/trailerbuild.html)*

Mind your gaps!
(Photo: www.evergoodfarm.com/trailerbuild.html)

We covered all of the foam board with new and recycled plywood. (Most of the walls are the original paneling; the floor and ceiling are new.) If you want to learn from our mistakes, pick the right hardware and, for the love of all that's holy, mark your studs every step of the way!

After you've filled all the gaps with putty and spray foam, don't forget that this beast is going to be full of freshly washed vegetables! Put some paint on it. Mildew- resistant bathroom paint will work after you've applied a healthy lathering of polyurethane.

Go ahead, put another coat of paint on it. Make this thing sparkle!

Last but not least, hook it up to the solar-powered barn and put some veggies in it. Don't forget to celebrate!

Photos by the Hampshire College Farm Center unless otherwise noted.