Friday, May 4, 2018
7:30 am - 3:30 pm
Killington Grand Resort
Killington, Vermont

Hunger Action Conference 2018

vtfoodbank.org/event/hac

Diversity & Inclusion

Randolph Area Food Shelf Cold Box

Randolph Area Food Shelf
12 Prince Street,
Randolph, Vermont

Prepared by
Peter Leonard

www.randolphareafoodshelf.org

History of Low Cost Cold Storage

- In 1999 Kate and Ron Khosla of Newburgh, NY constructed a cool room on their farm using an air conditioner.
  After a few years they contacted an engineer friend at Cornell University and the Cool Bot control was created.
- Today 45,000 Cool Bot controls have been sold worldwide.
- In about 2009 the University of Kentucky College of Agriculture produced an all-inclusive plan and support documents to build a “Low-Cost Cold Storage room for Market Gardeners”.

view showing door and power cord

Our Cold Box is built on skids so it can be moved

Constructed February- March 2017

This is an 8’x 6’x 7.5’ structure used for storing produce.
Interior cubic footage = 245
Four 2’x 7’ shelves with a 3’x 7’ aisle
This seems just about perfect size for our Food Shelf which in 2017, served 492 households, representing 1371 individuals.

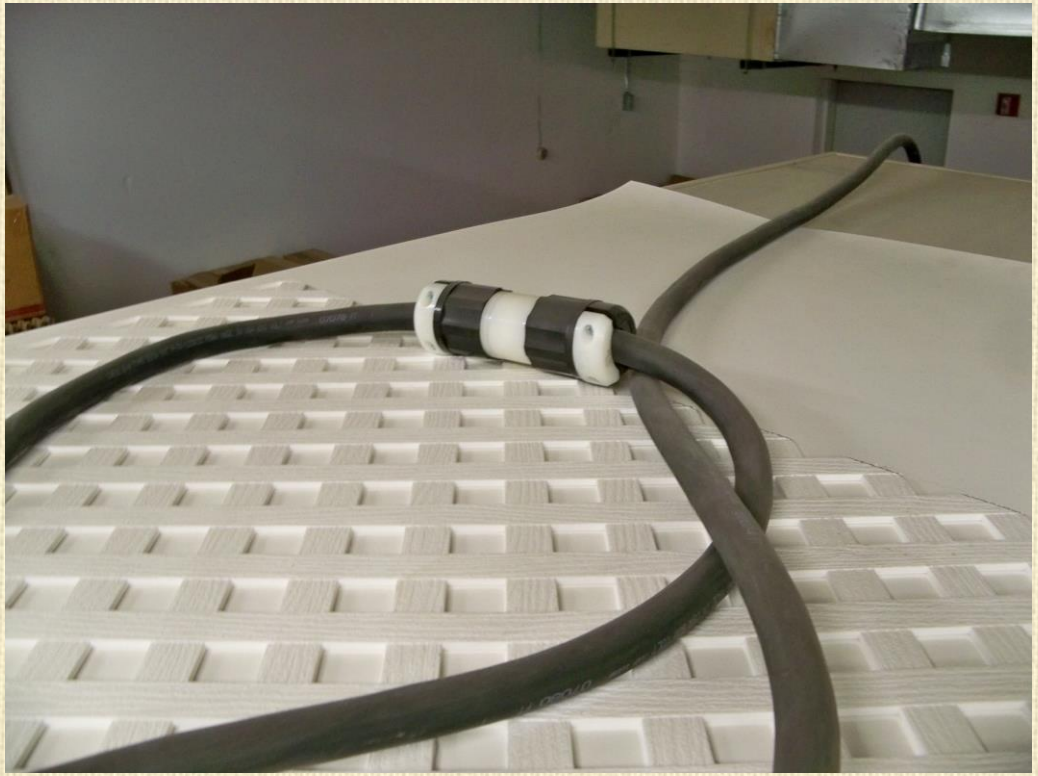
Total Cost- $4100

Randolph Area Food Shelf received a $4000 community grant from Catamount Solar

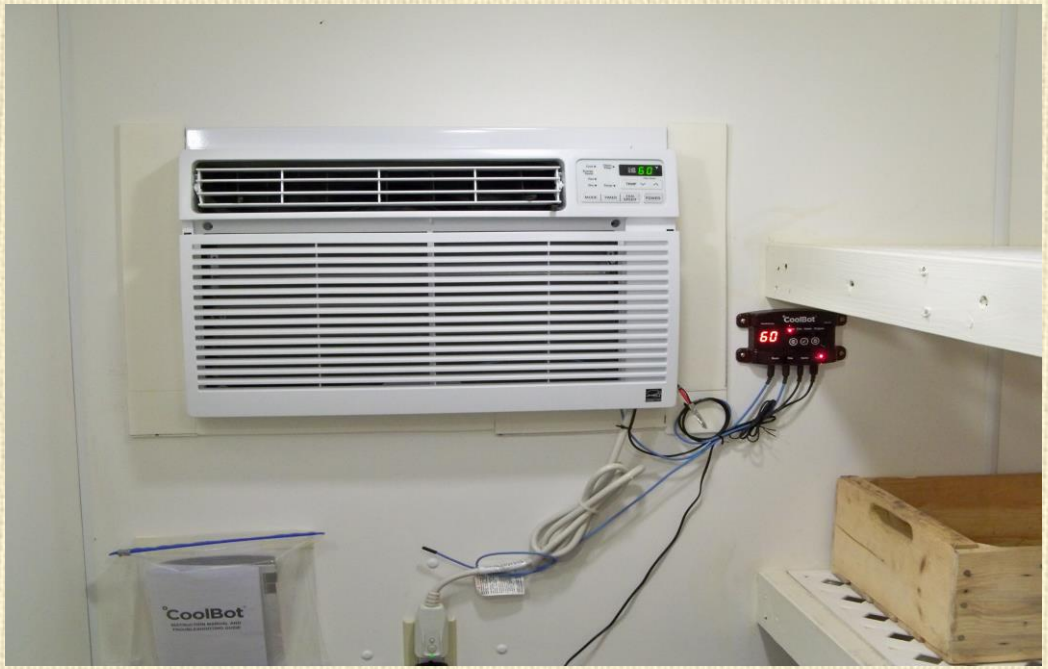
Cost breakdown:

- Misc. materials- $900
- Lumber- $1200
- Electrical supplies- $175
- Spray foam insulation (closed cell polyisocyanurate)- $1100
  - R-22 in 2x4 wall (Cool Bot recommends R-25)
  - If using 4x8 sheets- you will need 4 inches of R-Max (same foam as above and cost will be approximately $800
  - Temperature range 60-40 degrees F. We routinely use 48 degrees
- LG 12,000 BTU air conditioner and Cool Bot control- $725 (control- $329, air conditioner- $399)
- Labor- donated by Catamount Solar and Peter Leonard

Exterior end wall + electrical cord



Interior. Air conditioner + Cool-Bot control



We applied plastic 4x8’ panels (Polywall) to all interior walls using rivets/cement. (see samples)

This increased the cost $300, but provided a sanitary, washable and impermeable surface which I see as essential.

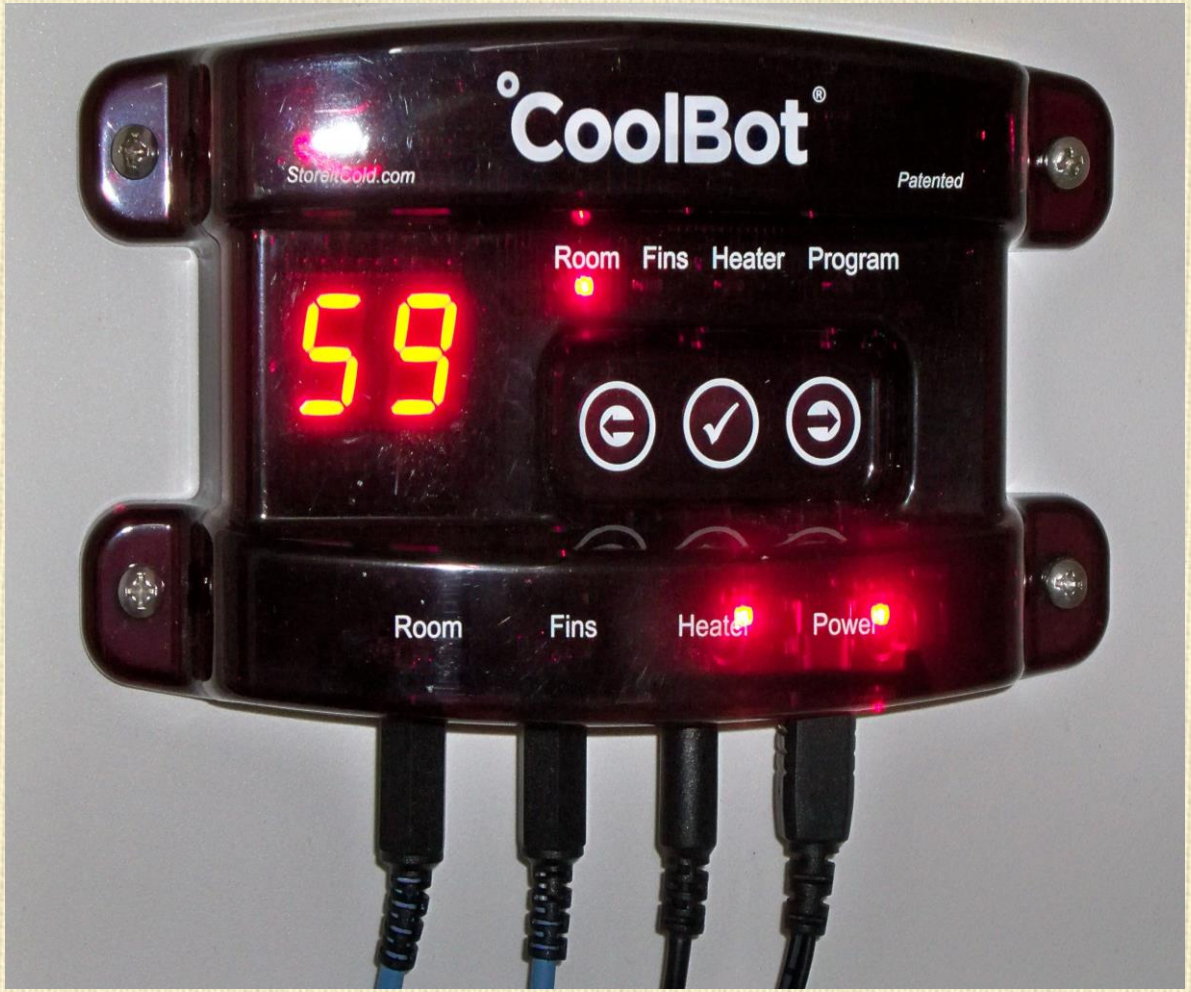
The floor and ceiling are painted with multiple coats of latex deck paint.

Estimated monthly operating cost= $33

13 cents/cu. ft. for cold box vs.

92 cents/cu. ft. for refrigerator

Close up of Cool Bot Controller



Plastic lattice shelving detail

(see sample of plastic lattice- $30 per 4x8 sheet)

Wooden produce boxes on lattice shelves

Resources

www.storeitcold.com

This website has EVERYTHING you need to know to build your own or buy a prefab cold box. A lot has changed since we built ours just a year ago! The plans are simpler and more inclusive. (You can also watch one built on a 20-min-long YouTube).

UVM Ag Engineering blog:

http://blog.uvm.edu/cwcallah/2013/03/20/coolbotstm-inexpensive-cold-storage/

Randolph Area Food Shelf website:

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