

Green Features and Solutions

Solar Panels

- Where?
 - On the roof and side of the container house.
- Roof
 - The solar panels will cover the roof generating power throughout the day and storing excess energy in a battery so it can be used during the night. The batteries will be made from 18650 cells manufactured by Panasonic since these are what Tesla uses in its electric cars and provides a long use time before they become scrap.



- Side
 - Solar panels can also be put on the sides of the container home at an angle to provide a little extra energy. This part is not needed; it just depends on the energy use of our inhabitants.



Solar Panel Heated Water

- Where?
 - Under the solar panels on the roof is heating and under the house is storage.
- Under panels

- Solar panels produce a lot of excess heat when the sun shines on them. This heat can be used as a way to heat up water preserving electricity and also lessening the cost of the project. Water will be slowly run in a thin chamber under the solar panels during the day, this will heat up the water and cool down the solar panels increasing their efficiency.
- Underground
 - The heated water will be run underground in an insulated storage chamber so it doesn't cool down over the night. The size of this chamber will depend on the hot water usage of the individual.

Windows for light

- Where?
 - One window will be on the top, and one 40ft side will be almost completely a window and smaller windows will be on surrounding sides.
- Long window on 40ft side of container home
 - A window will cover the entirety of one of the 40ft sides. This side will be placed on the east or west sides of the building so the sun always shines in through the day providing light.
- Smaller windows
 - Smaller windows on the remaining 3 sides will be placed. We decided to not put full windows here since large windows are expensive and we don't want everyone



to be able to see into the building. The bathroom will have a tinted small window higher up so people can't see in.

- Roof
 - Surrounded by solar panels we will have a small to medium sized window on the roof for more light and a nice view during the night.

Rain Collection for Water

- Where?
 - Roof
- Roof
 - The solar panels on the roof will be slightly tilted inwards so when it rains the rain funnels into the center of the solar panels, the window on the roof. Here we will have a collection area for the water which will be stored outside the house or underground.

Composting

- Where?
 - Outside and Underground
- Outside
 - Organic compounds can be composted in the outside composting bins, preventing food waste. The compost can be used to fertilise plants around the container home or possibly sold to other organisations.



- Underground
 - Rather than connecting our home to a sewer and sewage system it is much more cost effective and better for the environment to compost human excrement. The toilet rather than leading to a sewage system leads to a unger ground composting area. The compost can be sold or used for gardening around the container home.

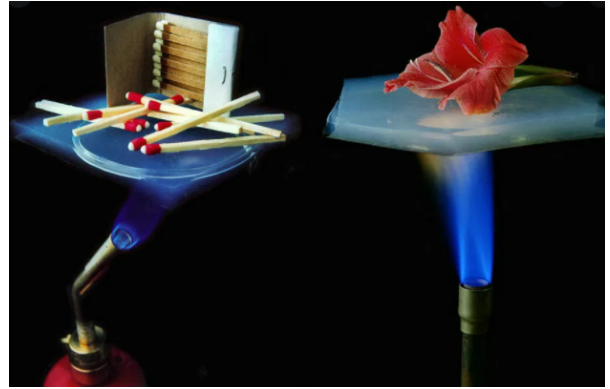
Alternatives to Styrofoam Insulation

- Where?
 - House insulation and hot water insulation
- We first planned on using styrofoam insulation but realized that it was very bad for the environment. Here are some alternatives.

Greensulate



Aerogel



Cellulose insulation



Denim insulation



Straw bale insulation



Sheep wool insulation



Automatic Energy Conservation

- Where?
 - Anywhere where electricity is in use
- Using light, movement, sound, and other sensors we can detect where our occupant is active and needs to use electricity for lights and other appliances, this way we can preserve energy.
- By putting in place better preservation measures we can extend the life expectancy of our batteries.