

YOU SHOW US CONTEST 2013



HOT SHOP

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Problem Statement:

High temperature air was trapped in our shop after shutting our doors at the end of the day. We found that this heated up the floor and everything else in the building overnight to the point that when we came to work in the morning the shop would still be hot and would get hotter rapidly as the Sun came in our east facing windows.

Possible options for this were:

1. Install air conditioning.
 - a. Too expensive.
2. Tint East facing windows.
 - a. Not easy to remove in winter when we need the sunshine, and air in the shop was still hot.
3. Leave windows open and run our exhaust fan all night to draw cooler air into the shop.
 - a. Outside air is still hot into the evening hours and would only heat up the shop further until the middle of the night.
 - b. Animals or intruders would be able to gain access through our unguarded windows.

Our Solution:

We built shaded guards for our east facing windows that would protect them from intruders and severe weather using salvaged 30 gallon barrels and scrap metal that was on hand. We also purchased a timer that cycles our exhaust fan several times in the night to draw in cool air. This has lowered the temperature in our shop in the morning by a minimum of 20 degrees and the shop stays cooler through the day. Three bolts remove the shades and let sunshine back in when needed.

Labor, Equipment, and Materials Used:

Used Barrels	\$ 0.00
Materials	\$ 200.00
Timer (on sale)	\$ 50.00
Labor	<u>\$ 600.00</u>
Total	\$ 850.00

Savings and Benefits:

Savings and benefits from our design include: Substantially lower temperature in our shop without installing an expensive cooling system; we can remove the shades in the fall and let the sun shine in; and by keeping the shop cooler we are able to work in a healthier environment and get more work done.

