

CHALLENGING THE MYTH “SOLAR THERMAL IS DEAD”

*BE CAREFUL WHAT
YOU ASSUME!*



“Everybody Knows”



- Solar can do at best, 75% of your water heating
- With freeze protection, solar is complex
- Overheating is a big problem for solar
- Installing solar thermal is tricky
- It needs yearly maintenance
- Solar is just too expensive

Solar Design ...



- We want the most efficient collectors
- Sizing a system for winter will cause overheating in summer
- Parallel piping gathers the most BTUs
- Storage tank cannot be oversized due to stagnation problems
- Freeze protection dictates system design

Time to Bend a Few Rules



Use lots of low efficiency
collectors >>>



<<< Use “oversized” storage

Modern equipment changes things!

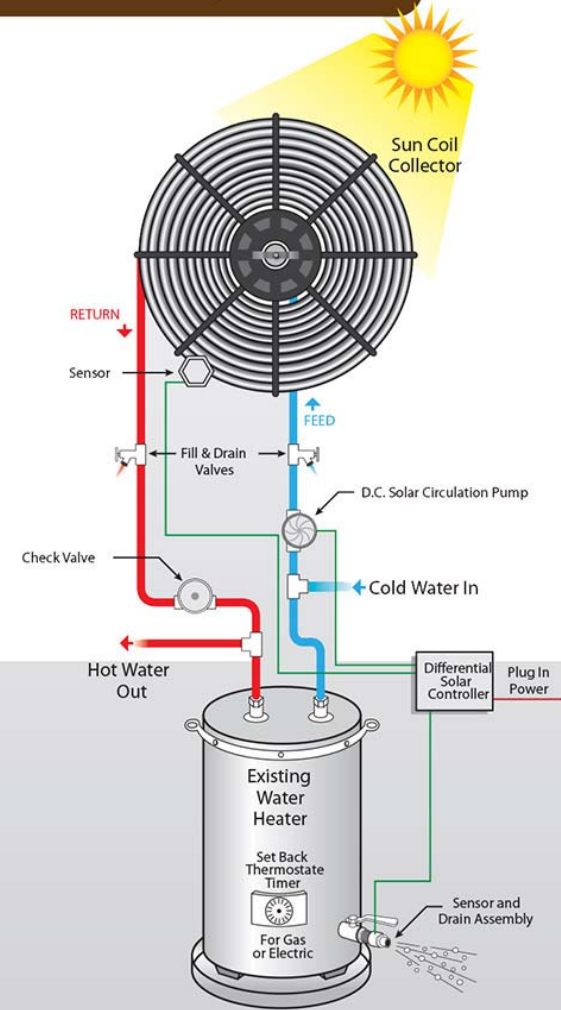


Plastic tank &
Polyethylene collectors



Simple system design and freeze~tolerant collectors by Gull Industries

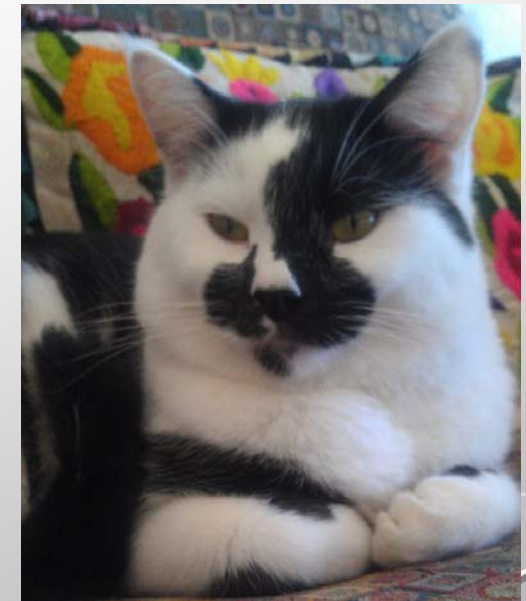
Recirculation Single Tank System



What do you get by bending rules?

- Long lived, low maintenance system
- Elimination of stagnation or odor
- Reduced risk of freeze damage
- Greater solar contribution
- No risk of overheating
- Faster reheating
- Simpler system
- Lower cost

and.....



Happiness!

Lowering the cost



Collector cost can be cut by about half, spending some time building your own. With this system, that saves about \$1000.

1 in. x 600 ft. IPS 200 PSI NSF Poly Pipe

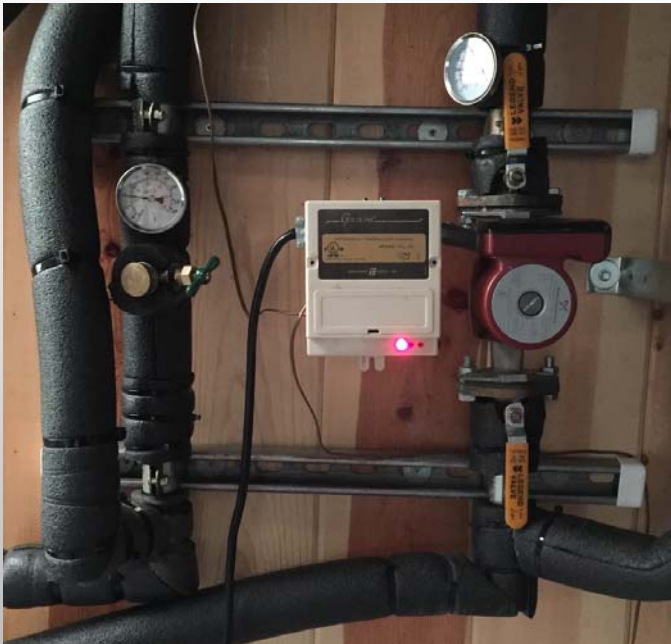
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\$420.00

Simple Installation

Six hours to install!



prefab controls



one bolt collector



quick connect

Performance so far:

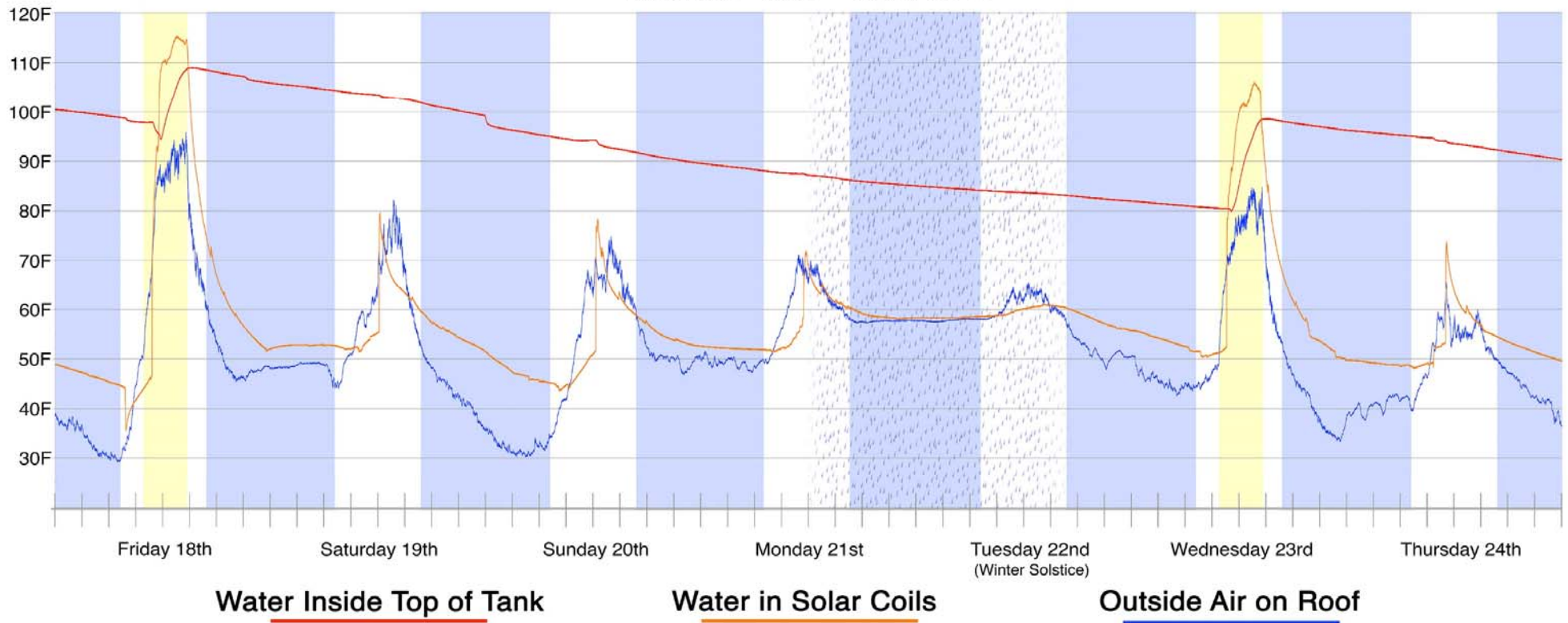
- System installed at end of October 2014. Based on the number of days it didn't provide sufficient hot water, it will supply ~ 95% of the yearly demand.
- Heat loss from tank is ~ 6-8 degrees daily, so system can coast for three days +/- with no sun and still give usable hot water.
- Freezing has no apparent affect on the system or use of hot water (your mileage will vary).
- Cost was about \$4000, not \$6000 - \$10,000.



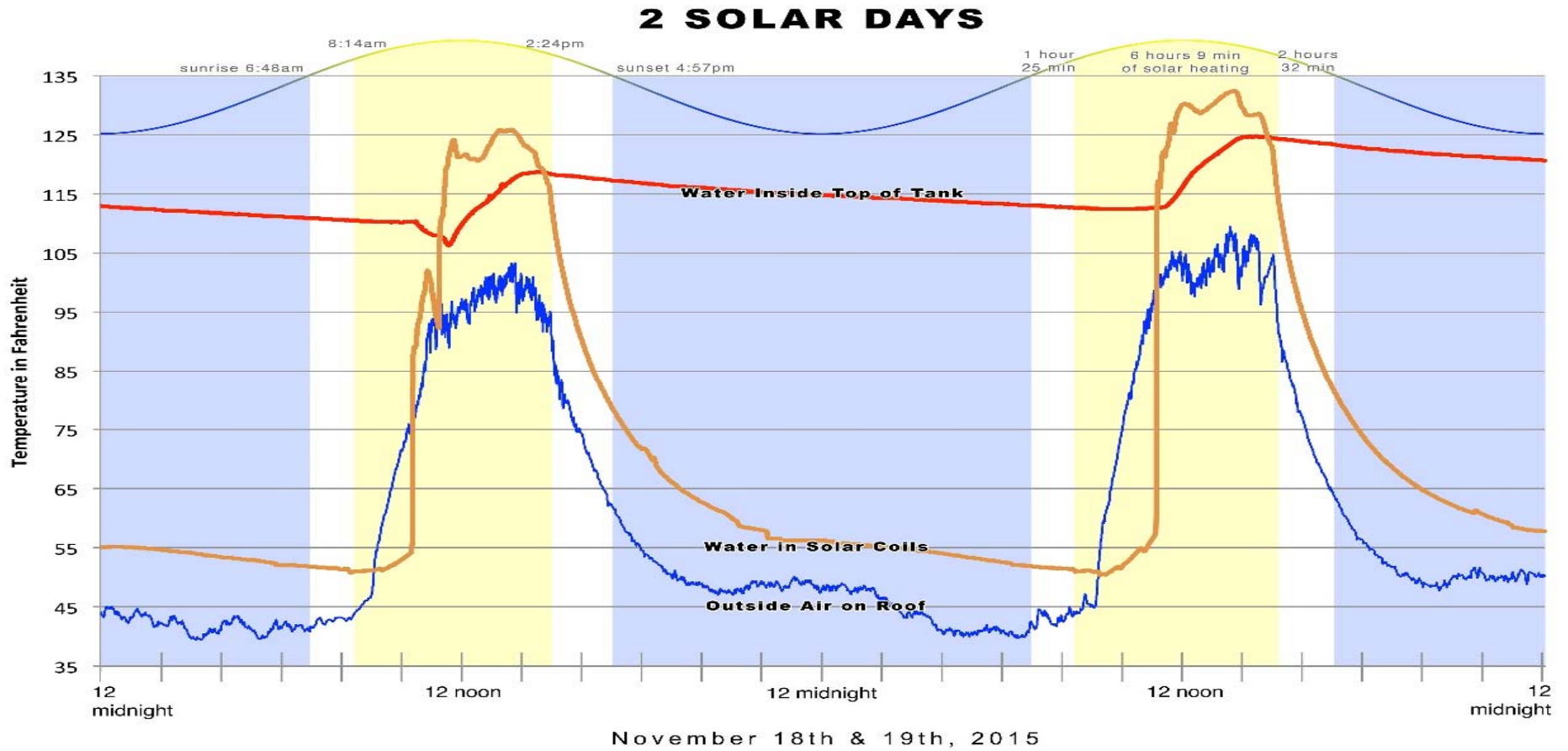
Performance in Winter

THE SHORTEST WEEK OF 2015

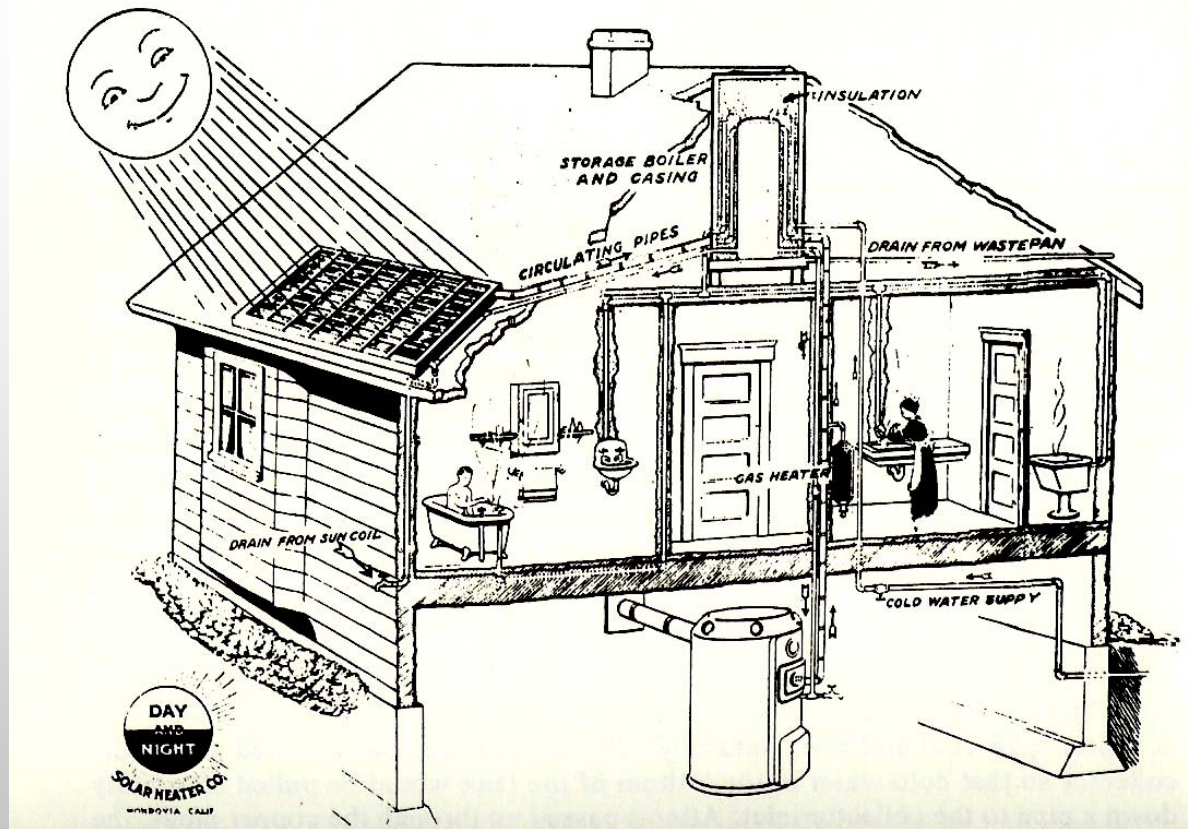
December 18th - 24th, 2015



Performance Detail



Questions?



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