

CHALLENGING THE MYTH ~ “SOLAR THERMAL IS DEAD”



BE CAREFUL WHAT YOU ASSUME!

“Everybody Knows”



- Solar can only do about 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

The Assumptions We Make With 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



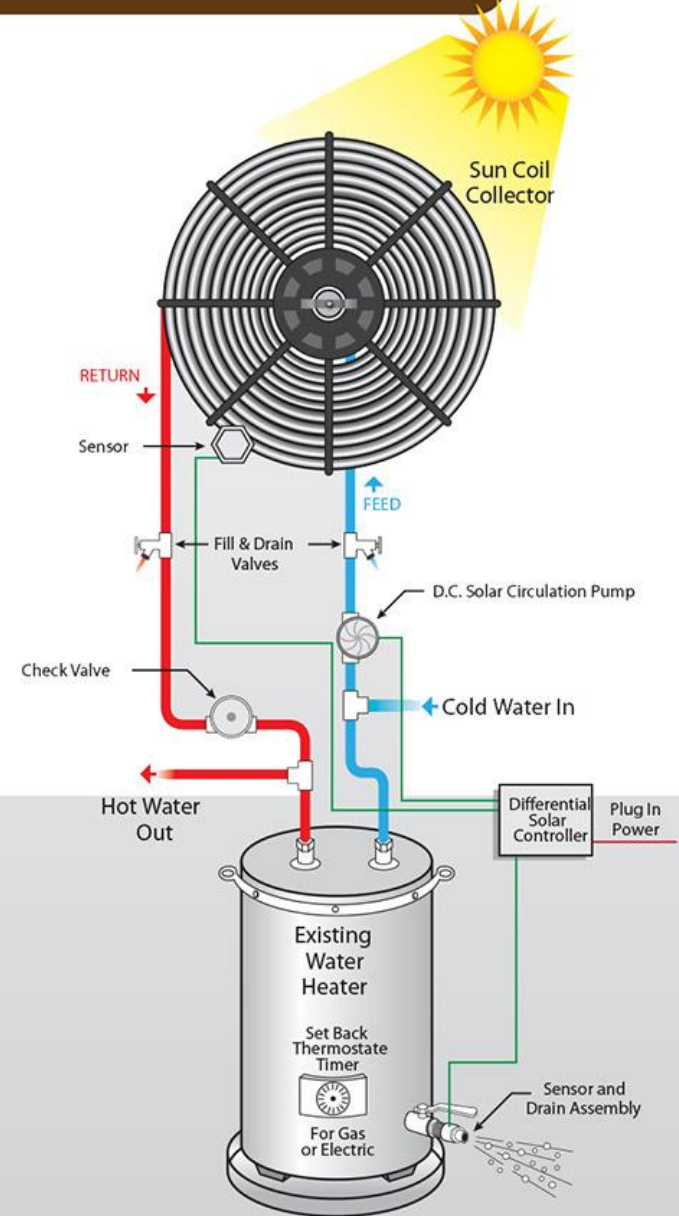
Use lots of low efficiency
collectors >>>



<<< Use oversized storage

Simple system design and freeze~tolerant collectors by Gull Industries

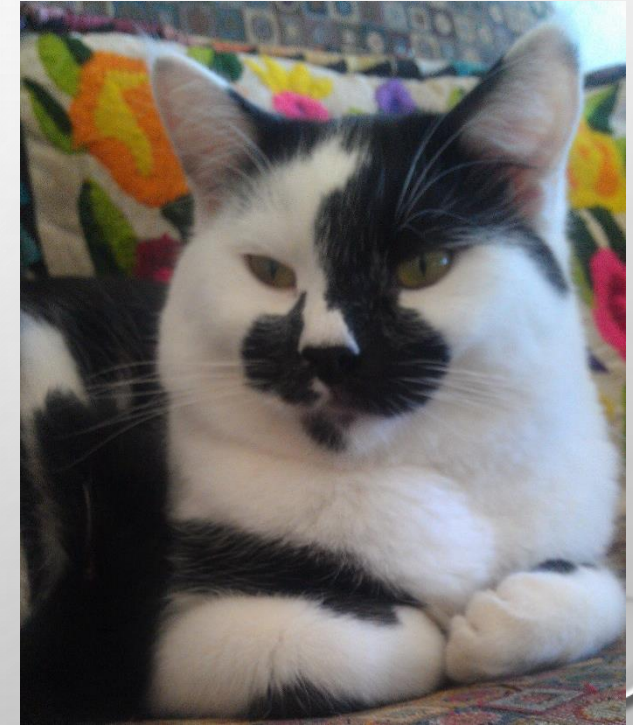
Recirculation Single Tank System



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

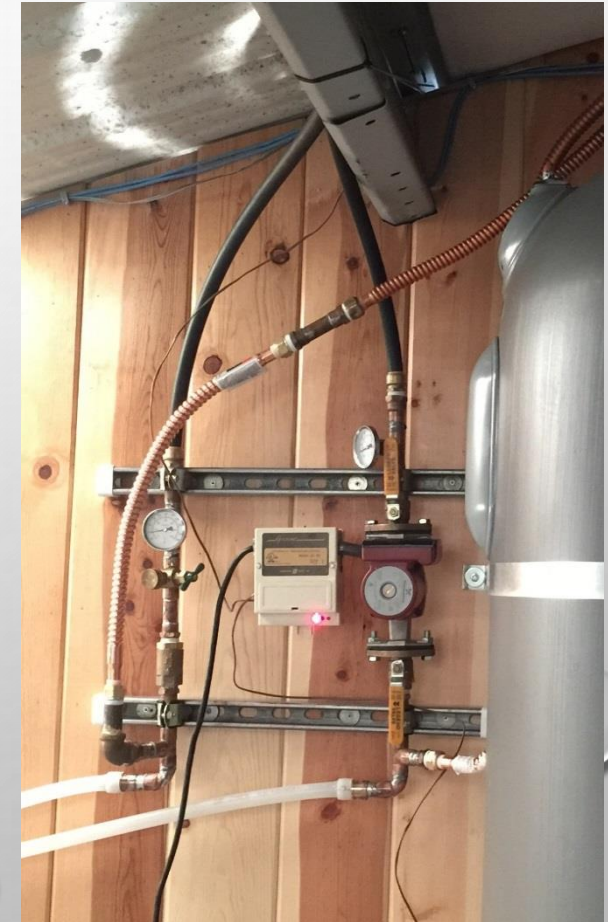
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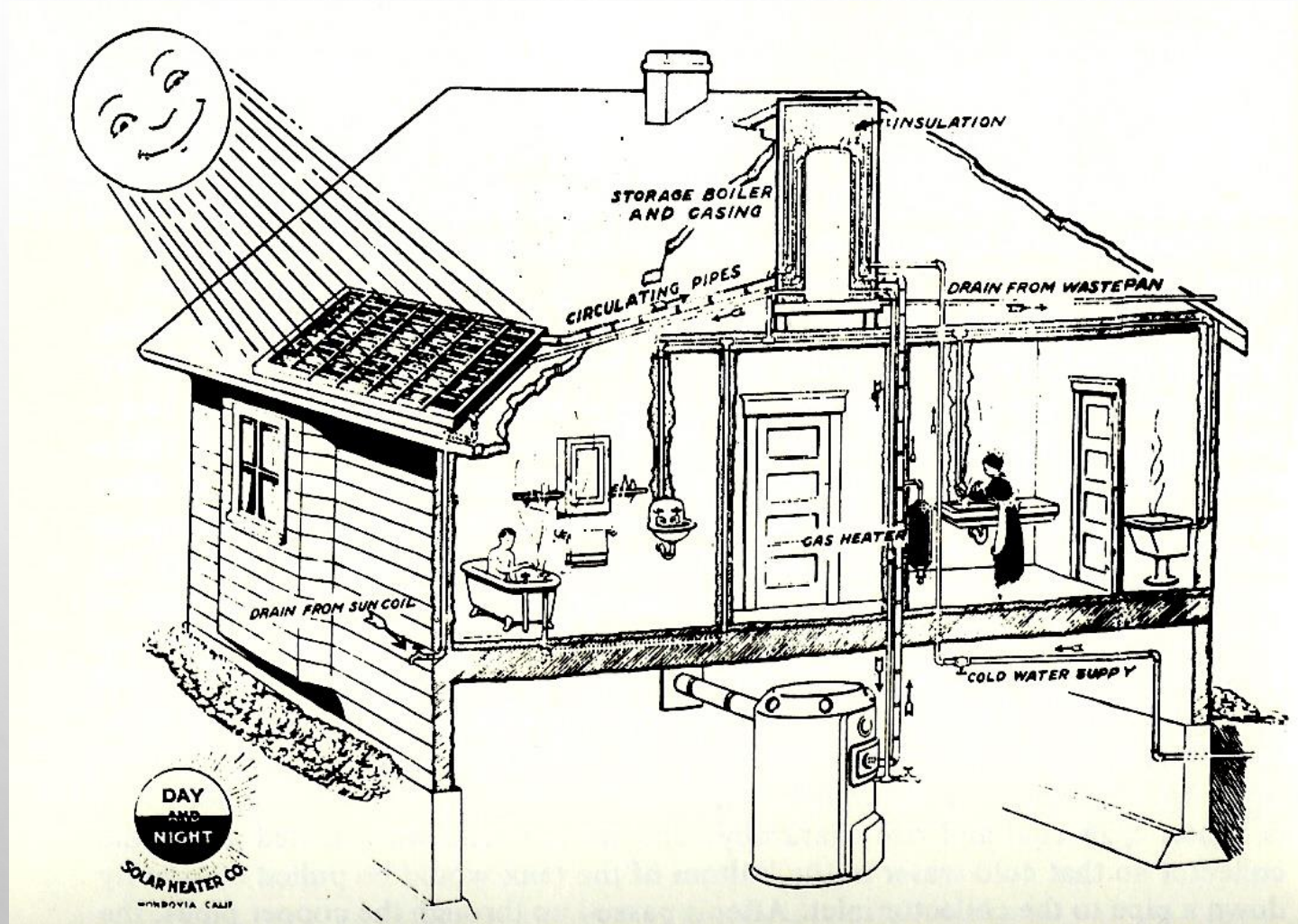
Happiness!

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 $\sim 95\%$ of the yearly demand.
- Heat loss from tank is ~ 5 degrees daily, so system can coast for three days \pm 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.



Questions?



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