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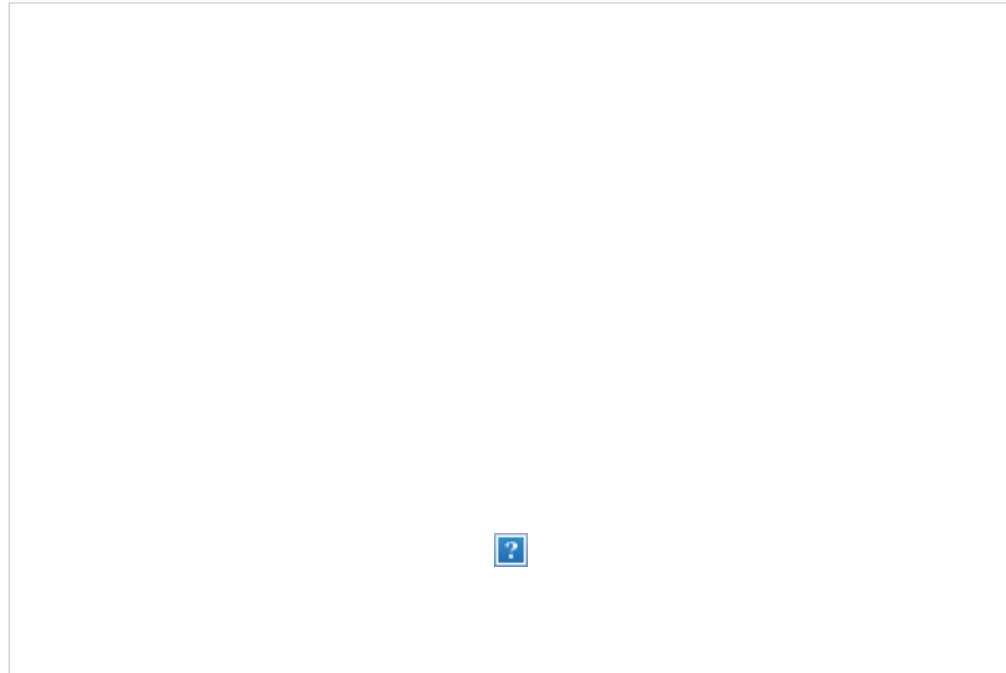
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Green House Plans Product Series: Drain Water Heat Recovery

Posted on 06. Sep, 2011 by [Maryruth Belsey Priebe](#) in [Articles](#)



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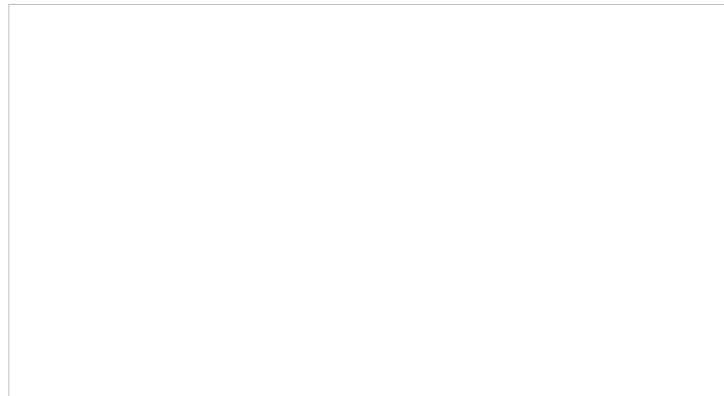


Most of us flush energy down the drain with every shower and hand wash. The heat in the water we use is a form of energy, and when we send that heat into the local sewage system, the energy gets lost. In fact, the US Department of Energy (DOE) estimates that [80-90% of the energy used](#) to heat water in a home is lost down the drain!

But a little-talked about [green house plan](#) system known as drain water heat recovery (DWHR) can recover this heat energy and reuse it. Sometimes called water heat recycling or [greywater](#) heat recovery or gravity film xchangers (GFX), drain water heat recovery involves the use of a heat exchanger that recaptures heat from the greywater flowing from showers, bathtubs, dishwashers, sinks, and clothes washers. The heat can either be stored for later use or used to pre-heat water going into a hot water heater or directly into a shower or other system.

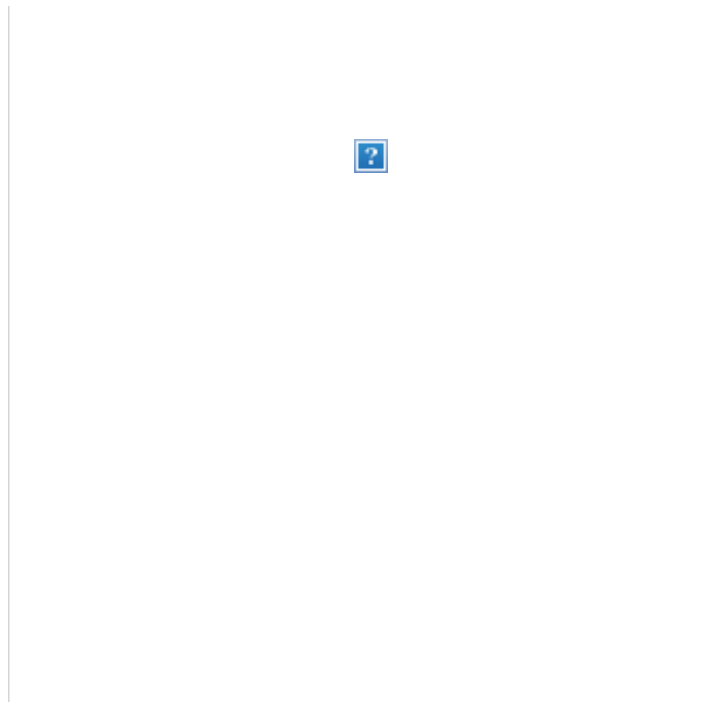
These are very simple systems, but here are a few specifications that apply to most DWHR systems to give you an idea of how they work:

- Non-storage systems are usually constructed with a spiral copper tube that is wrapped around the waste drain. As the cold water flows through the



copper tube, it is heated by the warm greywater leaving the system.

- In storage type greywater heat recovery systems, the drain water flows through a spiral tube at the bottom of a hot water tank where it heats clean water contained in the tank.
- In general, the only water warmed by the DHWR is that routed to the hot water heater, so cold water remains cold.
- Fresh and greywater never mix in a DHWR system, so there's no risk of contamination.
- It's best to have a water heat recycling system installed by professionals such as plumbers and electricians.




This technology works with any type of water heater, but is particularly well-suited for demand/tankless and solar water heaters. And the good news is that they are relatively inexpensive, ranging in cost from \$300 to \$1,000 depending on your system. The DOE and Natural Resources Canada (NRCAN) estimate a return on investment between 2.5 and 10 years. Use the [NRCAN DWHR calculator](#) to estimate your savings and see how much money you'll save over time.

Images via [DOE](#) and [Flickr – Giles Douglas](#)



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