



View of Frog's Hollow: Cedar shakes and siding, timbers and floor planks were sourced locally.

1. and 2. Hybrid photovoltaic (PV)/wind energy system:
- 8 BP Solar BP-85 LGBG (Laser Grooved, Buried Grid) PV modules totaling 510W
 - 1 South West Wind Power Whisper 175 wind turbine, 15' blade span, max output 3000W
 - 24 Surrette S-530 batteries, 6V 530Ah each
 - Xantrex control and monitoring equipment including SW4048 sinewave inverter
- The system receives a charge from the PV modules and the wind generator. Energy is stored in the batteries and converted to household voltage levels on demand by the inverter.

Solar Water Heating System

- Thermodynamics Solar Boiler SB-64 including 64 sq feet of collection. The SHW system contributes to both domestic hot water (for showers, drinking, etc.) and to the radiant in-floor heating system. It works in conjunction with a propane fired combi-boiler and a wood fired masonry heater using an external tube-in-shell heat exchanger.



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3. A wood-fired high-efficiency masonry heater supplements radiant in-floor heat system; Natural light floods into the interior.
4. Post-and-Beam construction using reclaimed barn timbers, with a lime plaster interior finish.
5. View of South-facing wall, and Solar Hot Water panels on the roof.



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FROG'S HOLLOW

In the words of the Owner:

It has taken a number of years, loads of magazines, hours on the internet and lots of helpful discussions, however the land and the things that have been added all feel right and I think this is what makes people feel at peace here. I bought a plowed field but in my minds eye I could see what it could become. I didn't start off to build a timber frame house, but I did set out to build a house that was old & settled! Being off grid evolved as a moral and financial decision and to rise to a challenge.

With the help of numerous people who have given their enthusiasm, skills and input to an unusual project we have succeeded in creating a fully integrated, functional timber frame home of 2700sq ft using reclaimed materials and modern technology. The result is a home that is still evolving and will not be finished until it is. The answers to what to do in a given situation show themselves when ready.

By designing the house as a package, although we have less hydro, we need very little and we lack for nothing. Such heat we generate, we hold on to and there is not so much heat build up in summer that cannot be dissipated by the natural breezes.

In living in such a home, one is more attuned to natural events. When the flag is whipping the extra wind will power extra laundry or just leave all the porch lights on for the evening! The rain will fill the tanks and rain water is lovely and soft to wash in. Sunny days, summer or winter mean long hot showers - for free! Light the sauna, put on the snowshoes tramp through the bush and when you return tired and snow covered, head for the sauna. Then relax in front of the fire with a glass of something tasty, a riveting book, lovely music and good friends.

What more does one want?

SUSTAINABLE FEATURES

- **Reduced Building Area:**
The house was designed with large, interconnected rooms facing south within efficient timber frame structural bays, with smaller service rooms on the north side.
- **Sustainable Landscaping:**
The landscaping is largely minimal and indigenous to the site; additional features include a stormwater retention pond and a large enclosed vegetable garden adjacent to the kitchen.
- **Water Efficiency:**
Barrels are used to harvest rainwater for irrigation and washing.
- **Recycled and Renewable Materials:**
Reclaimed floor planking was installed and barn timbers were used for the post and beam construction;

Cedar shakes and siding were sourced locally;

A durable standing seam metal roof is made from 100% recyclable steel.
- **Natural Ventilation + Daylighting:**
The South glazed wall was designed with operable windows high and low to create a natural stack ventilation system. The open-concept and glazed south wall and overhangs were designed to maximise the daylighting year-round. Interior walls were finished with lime plaster to eliminate off-gasing.
- **Waste Reduction, and Elimination:**
Modular systems (stressed-skin panels) and an efficient structural concept reduced construction waste.
- **Innovative Design + Energy Efficiency:**
Hybrid photovoltaic (PV)/wind energy system;

Solar Water Heating System;

All systems have automatic controls to regulate consumption.

Frog's Hollow
Passive Solar, Off-Grid, Post & Beam House

Area: 2,700 ft2
Status: Completed Fall, 2003

Key People: Paul Dowsett
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Generation Solar
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