

Christopher Residence  
1500 Franklin & Pierce  
Port Townsend, WA 98368



SW Facing Wall (E-Tubes)



SE Facing Roof (Flat Plate)



Boiler/Mechanical Room

### SOLAR THERMAL SYSTEM – Domestic Hot Water & Auxiliary Space Heat

- (3) Heliodyne Gobi 406 Solar Flat Plate Collectors
- (40) Thermomax Mazdon Evacuated Tube Collectors (with 2 TMA600-20 Manifolds)
- Heliodyne Helio-Pak (Pump Station), HPAK 16 (16,000 BTUs per hour)
- Heliodyne External Heat Exchanger, Closed Loop (50/50 propylene glycol/distilled H<sub>2</sub>O)
- Heliodyne Delta T Pro Controller, with BTU monitoring
- Heat Transfer Products SuperStor stainless steel tank, SSU-60SB, 60 gallon, dual coil
- Thermosiphon Loop (copper piping, between tanks)
- Conventional Electric Hot Water Heater, 80 gallon

The southeast (SE) facing 12/12 roof was selected as site of an array of flat plate collectors – good for the hot water system, while the southwest facing (SW) vertical was selected as site of a series of 40 evacuated tube thermal collectors – good for the spring and fall heating. The two thermal arrays are piped in series. Though over capacity, the unique orientation and pitch of the collector locations allow for significant thermal collection beyond the time between the spring and fall equinox, supporting the goal of a large solar domestic hot water system with capability to provide auxiliary heat for the (radiant floor) space heat system. Annual production should be over 17M BTUs (5,000 KWh). The ridge of the main roof is set aside for a future 4000+ Watt PV array.

The solar thermal system (domestic hot water and space heating preheat system) was developed by **Olympic Energy Systems, Inc.** The builder (**L.D. Richert**) installed the thermal collectors. **Bob Brown Plumbing** (of Port Townsend) installed the heating loop and equipment. **Sunrise Heating** installed the heating system. Olympic Energy Systems emphasizes energy awareness, conservation, and efficiency measures first and foremost.



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