



# Powerhouse Designs & TC Legend Homes

Samish Solar Home | Bellingham, WA | TCLegendHomes.com



Photos courtesy of Powerhouse Designs & TC Legend Homes

“This is by far the most efficient, nicest, and most comfortable house we have lived in!” Homeowner



## PROJECT DATA

- **Layout:** 4 bdrm, 3.5 bath, 2 fls, 2,345 ft<sup>2</sup>
- **Climate:** IECC 4C, marine
- **Completed:** June 2023
- **Category:** Custom for Buyer

### MODELED PERFORMANCE DATA

- **HERS Index:** without PV 33; with PV -20
- **Annual Energy Costs:** without PV \$650; with PV \$-300
- **Annual Energy Cost Savings:** (vs typical new homes) without PV \$1,500; with PV \$2,450
- **Annual Energy Savings:** without PV 11,550 kWh; with PV 23,100 kWh
- **Savings in the First 30 Years:** without PV \$62,400; with PV \$101,800

## CONTACT

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## KEY FEATURES

- **Walls:** SIPs, R-29 total: 6.5" graphite EPS SIP with OSB sides. House wrap, fiber cement lap siding. Aerosolized acrylic whole-house air sealing.
- **Roof:** SIP roof, 10.25" R-49 graphite EPS SIP roof, insulated splines. Synthetic underlayment, metal roofing with cool roof index of 32.
- **Attic:** Unvented vaulted ceilings.
- **Foundation:** Slab-on-grade foundation; R-23 ICF stem walls; R-20 closed-cell spray foam under slab.
- **Windows:** Triple-pane, U=0.16-0.18, SHGC=0.32-0.50, low-e3, argon-fill, vinyl-framed. Shading: extended eaves, landscaping for shade, half of sunroom roof is opaque metal.
- **Air Sealing:** 0.27 ACH50, all SIP panel joints sealed with double bead of mastic and tape. Windows and doors are foamed in. Whole house aerosolized acrylic sealant.
- **Ventilation:** HRV, continuous at 30 cfm, humidistat and CO<sub>2</sub> sensed for boost. Also mobile phone alert to IAQ sensors. HRV has HEPA filter.
- **HVAC:** Air-to-water heat pump, 3.92 COP for heating and 6.75 for cooling; 23.02 EER. Radiant floor heat downstairs, fan coil upstairs. Designed for passive heating.
- **Hot Water:** Powered by the same air-to-water heat pump that heats and cools the home.
- **Lighting and Appliances:** LED lighting. ENERGY STAR appliances, induction cooktop.
- **Solar:** 10.8-kWh PV.
- **Energy Management System:** IAQ sensor controls for ventilation.
- **Other:** PV designed for house load + electric vehicle charging.

