

**Participant information**

TC Legend Homes  
Thad Johnson  
1606 Carolina St  
Bellingham, WA 98229

Phone: 619-884-2916

Email Address: office@tclegendhomes.com

Website: 1606 Carolina St

**Category**

Single Family Homes (over 3,000 sq. ft.)

**High Performance:** Yes

**Project information**

Semiahmoo Net Zero  
5317 Canvasback Rd  
Blaine, WA 98230

**Date Completed:** 11/26/2019

Total cost of project (exclusive of land): \$920,000 (cost to buyer)

**Dimensions of building (all floors of multi-story building):** FL1: (no garage): 1056 sq ft. (33' x 32')

FL1: (garage and unconditioned shop): 960 sq. ft. (24'x40')

FL2: 1885 sq ft. (59'x~22') + (57'x~10')

**Asking price/purchase price (Affordable Housing only):**

**Total sq. ft. of conditioned space:** 2941

**Built By** (*if different than applicant*)

TC Legend Homes  
Thad Johnson  
1606 Carolina St  
Bellingham, WA 98229

**Panels Manufactured By**

**Company Name (members only):** Premier SIPs

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**Designed By (if different than applicant - SIPA will only recognize members)**

Zero-Energy Home Plans in coordination w/ TC Legend Homes  
Thad Johnson, TC Legend Homes  
1606 Carolina St  
Bellingham, WA 98229

**Total sq. ft. of conditioned space:** 2941

**Please answer each question with as much detail as possible to help in the judging process.**

**Describe the end use of the building:** Single Family Residential. Semiahmoo Net Positive is a "forever home" for a family retiring to the Pacific Northwest.

**How did SIP construction help you get this job?** Our clients were seeking a net zero home - one that would produce at least as much energy as it would consume. SIPs were the logical choice for creating the highly insulated, air-tight envelope needed to achieve net zero in the Pacific Northwest.

**SIP wall thickness and core material:** 6.5" Graphite Polystyrene Core (Premier GPS)

**SIP roof thickness and core material:** 10.25" Graphite Polystyrene Core (Premier GPS)

**Describe the benefits of using SIPs on this project. Did SIPs help save time, labor, construction costs, or energy?** SIPs always make for a more efficient build, in terms of saving time on labor during construction and saving energy for the client, once the home is ready to occupy.

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**Describe any innovative design elements or structural engineering involved:** This home features:

- A Tatami room, bringing an element of the Far East into this otherwise Western-style home. This will serve as a simple gathering space or a place for meditation.
- An elevator to facilitate aging-in-place
- A simple rectangular design to minimize exposed surface area
- Orientation and window placement to optimize active and passive solar
- Slab on grade with 4" foam under-slab insulation
- Insulated concrete forms
- Triple-pane windows
- High-efficiency air-source mini-split heat pumps (5 heads) for heating/cooling
- High-efficiency heat pump hot water heater

**Please list any certifications the project received, such as ENERGY STAR, LEED, National Green Building Standard, WELL, Passive House, Green Globes or local green building programs. Only list certifications that are completed:** - Department of Energy Zero Energy Ready Home

- ENERGY STAR v.3.2
- EPA Indoor airPLUS
- Built Green 5-Star

**HERS Index (required only for High Performance Category and recommended for residential projects):** -3

**Blower door test results (ACH50) (required only for High Performance Category and recommended for residential projects):** .35

**Energy use intensity in kBtu/ft2 (required only for High Performance Category and recommended for commercial projects):** .374

**Describe the HVAC system used on the project:** Heating and Cooling:

2 Fujitsu Multi Zone Air Source Heat Pumps

- One 24K BTU with three heads // 9.5 HSPF. Cooling: 18.0 SEER

- One 18K BTU with two heads // 9.3 HSPF. Cooling: 18.0 SEER

Ventilation: Zhender 350 Heat Recovery Ventilator/120 cfm, 20.0 watts with MERV 13 air filter for superior air quality

**Describe any other energy-saving materials used in the building envelope other than SIPs. List U-values of windows used and the U or R-value of any insulation materials. (judged only for High Performance Category)** - Triple-pane

windows: U-Value/0.140, SHGC/0.440

- Insulated Concreted Forms: R-20.0

- Underslab insulation: R-20.0

- Aerobarrier air sealing

- Triple-bead mastic between all SIPs panels

**Please list any energy-efficient products or design features, such as lighting, hot water heating, appliances, passive solar (judged only for High Performance Category):** - Orientation and window placement to optimize active and passive solar

- 100% interior LED lighting

- Rheem high efficiency heat pump hot water heater

**Were any solar panels installed on the project? If so, indicate the size of the system (judged only for High Performance Category):** Yes; 9.15kw

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**Please list any sustainable materials or design features not listed above, such as recycled materials, low-VOC finishes, landscaping, etc. (judged only for High Performance Category):** - Zero-VOC paint throughout

- Two electric car charging stations

**Any additional comments on the project:** This was the first home in Blaine, WA and Semiahmoo to have a net metering installed. We are proud to have incorporated SIPs into this trail-blazing net zero home for this community.