

## **Project #51 – High Performance**



# **Van Hees-Hurtig Residence**

## Van Hees-Hurtig Residence



Participant Information:  
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Category: Single Family Homes under 3,000 sq. ft. - High Performance

Project Information:  
Van Hees-Hurtig Residence / 'House in a Hollow'  
1505 Huntley Road  
Bellingham, WA 98226

Date completed: 11/15/2021

Total cost of project: \$659,287 (& BARN \$123,860)

Dimensions:  
1st floor: 42 ft x 20 ft / 2nd floor: 42 ft x 14 ft  
(+ 24 ft x 24 ft stick frame garage & a detached Barn)

Total sq. ft.: 1,950 sq ft / 19,309 cubic ft.

Built by:  
TC Legend Homes  
Ted Clifton  
2515 ST Paul St  
Bellingham, WA 98226  
360-220-2119

Panels Manufactured by: Premier Building Systems LLC



Designed by:  
TC Legend Homes  
Ted Clifton  
2515 ST Paul St  
Bellingham, WA 98226  
360-220-2119

Building use:  
Measuring 1950 square feet, this Department-of-Energy certified Net Zero clerestory design has a central kitchen and a 1st floor aging-in-place floorplan. Designed for an Alaskan couple whose love of the outdoors demanded a house that fully engaged with the landscape, plenty of daylight is admitted & access to outdoor living is easy..



## Van Hees-Hurtig Residence

How did SIP construction help you get this job?

SIPS were the walls & roofing for the house.

The energy-shell is formed using the system: 6.5" SIPs walls, 10.25" SIPs roof, with 4" slab-on-grade concrete-mass insulated from below with 4" of R20 foam.

SIP wall thickness: 6.5"

SIP roof thickness: 10.25"

The benefits of using SIPs on this project:

TC Legend built this net-zero house through the winter of 2020/ 2021. With SIPs, we were able to build mid winter. SIPs roof panels swung in on a crane through the blowing snow! SIPs saves us on build time, labor and construction costs. The tight energy envelope also helps our clients save on energy costs, and to achieve high efficiency building certifications/ awards.

Additional innovative design elements:

Passive solar design, basic features installed.

The energy-shell is formed using the system: 6.5" SIPs walls, 10.25" SIPs roof, with 4" slab-on-grade concrete-mass insulated from below with 4" of R20 foam. The openings are plugged with Vinytek triple pane Boreal windows & Thermatrue fiberglass doors.

Certifications the project received:

5-STAR Built Green & Department-of-Energy certified Net Zero

HERS Index: -23

Blower door test results: 0.54 ACH50

HVAC System:

Advances in TC's mechanical systems determined that the radiant tubes embedded in the 4" concrete slab will serve as a back-up heating system to handle abrupt cold snaps, with the day-to-day heat & cool being delivered via the Zehnder Comfopost, a heating/ cooling coil that sits in the ventilation delivery ducts. The Comfopost coil is driven by the Chilltrix CX34 heatpump, along with a further fancoil heat/ cool unit located in the 2nd floor rec-room.

Air-source heat pump, Electric, 3.5 COP.

Air-source heat pump, Electric, 23.0 EER.

Additional energy-saving materials used in the building envelope:

Window: U-Value: 0.170, SHGC: 0.330

Slab: R-20.0 Edge, R-20.0 Under

Above Grade Walls R-29.0

Ventilation System Balanced: HRV, 81 cfm, 32.0 watts.

Additional energy-efficient products or design features, such as lighting, hot water heating, appliances:

Air-source heat pump, Electric, 23.0 EER.

Water Heating: Heat pump, Electric, 3.10 EF, 50.0 Gal.

ENERGY STAR exhaust fan vented to outside - Zehnder Comfoair 550

Interior Floor Lighting (%) 0.0

Range/Oven- Electric

Interior LED Lighting (%) 100.0

Clothes Dryer - Electric

Refrigerator (kWh/yr) 596

Clothes Dryer CEF 3.94

Dishwasher (kWh/yr) 270

Solar panels installed:

Yes. NET-POSITIVE 10.56 kW

Solar Panels:

-Manufacturer: Panasonic

-Model: 320w

-Qty: 33

Inverter:

-Manufacturer: Solar Edge

-Qty: 1

Total kw: 10.56

Additional sustainable materials or design features:

Cabinets: SOLID WOOD W/ LOW-VOC SEAL &

Used low- or non-VOC and non-toxic interior paints and finishes on large surface areas



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