



High Performance Project



Bellingham Residence

Single Family Homes less than 3,000 sq.ft.

Bellingham Residence



Participant information
Premier Building Systems
Becky Susan
Puyallup, WA 98375

Phone: 253.225.1617
Email Address: becky.susan@premiersips.com
Website: www.premiersips.com

Category
Single Family under 3,000 sq. ft.

High Performance: Yes

Project information
Bellingham Residence
Bellingham, WA

Date Completed: May 2018

Total cost of project (exclusive of land): not available

Dimensions of building (all floors of multi-story building):
20'x26' First Floor
20'x26' Second Floor

Asking price/purchase price (Affordable Housing only):n/a

Total sq. ft. of conditioned space: 1,040 sq ft

Built By (if different than applicant)
TC Legend Homes
Ted Clifton Jr.
702 Kentucky Street #339
Bellingham, WA 98225

Panels Manufactured By
Company Name (members only): Premier Building Systems



Bellingham Residence



Describe the end use of the building: Residential Single Family Positive Energy Home

How did SIP construction help you get this job? TC Legend Homes was selected as the builder for this project. TCL coordinated all aspects of the project from design through construction and has developed a "positive energy" system that relies on the energy efficient components that SIPs offer.

SIP wall thickness and core material: 6" GPS Core - R29

SIP roof thickness and core material: 10" GPS Core - R48

Describe the benefits of using SIPs on this project. Did SIPs help save time, labor, construction costs, or energy? Absolutely to all! Install time is days, not weeks which equates to a reduction in framing and other trade labor. The use of SIPs did not equate to reduced construction material costs, however the costs are comparable if not less expensive overall for the options available on a net-zero/positive energy project.

Describe any innovative design elements or structural engineering involved: The entire project was engineered to be positive energy, so that it would be able to produce more energy than it needs to operate. This required planning from the start to ensure all systems complimented and optimized. While there is considerable up front planning to achieve this operating status, the construction period flies with components being pre-planned for execution. TC Legend homes is well considered the foremost expert on positive-energy homes and has constructed dozens in Washington State.

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:

Energy Star Certified New Home

Washington Built Green - Highest 5-Star Status

EPA Indoor AirPLUS Qualified Home

HERS Index (required only for High Performance Category and recommended for residential projects): -25

Blower door test results (ACH50) (required only for High Performance Category and recommended for residential projects): ACH 0.57.
SEE full HERS & DOE Energy Data attached.

Energy use intensity in kBtu/ft² (required only for High Performance Category and recommended for commercial projects): Estimated energy use annually -10.5 MMBtu

Describe the HVAC system used on the project: Electric air source heat pump, high efficiency mini-split/Electric Htg.: 14.2 HSPF. Clg: 33.0 SEER Ventilation: Exhaust only: 50 cfm, 33.0 watts
Thermostat: Programmable heating and cooling

Bellingham Residence



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: 0.180, SHGC: 0.300 Solar Array

Under Slab Insulation, R-20 under & R-20 Edge Slab

Please list any energy-efficient products or design features, such as lighting, hot water heating, appliances, passive solar (judged only for High Performance Category): Passive Solar Orientation

Water heating via heat pump/electric, 2.7 EF, 50 Gal Radiant flooring

Were any solar panels installed on the project? If so, indicate the size of the system (judged only for High Performance Category): Yes, photovoltaics estimated at an annual energy consumption of -27.2 MMBTu/yr (or -\$675.00)

Front view

Bellingham Residence



Front view

Bellingham Residence



Front view

Bellingham Residence



Kitchen view

Bellingham Residence





Blower door results

Bellingham Residence



ENERGY STAR

CERTIFIED
NEW HOME

Address:

3127 Bennett Dr
Bellingham, WA

Built by:

TC Legend Homes

Verified by:

Elizabeth Coe

Date:

5/21/18

ENERGY STAR® for Homes Version Number:

Version 3.1

Optional information:

HERS Index: -25

This home has been independently verified to meet EPA's strict guidelines for energy efficiency.

Learn more at energystar.gov



eCoe Company
• Residential Energy Modeling •

Building Envelope Air Leakage Testing Data

Date:	05/17/2018
Builder:	TC Legend Homes
Property Address:	3127 Bennett Dr, Bellingham
Test Pass or Fail:	Pass
ACH 50:	0.57
Conditioned Square Feet/Volume:	1040/10218
CFM @ 50 Pa:	98
Technician:	Elizabeth Coe
Notes:	



Indoor airPLUS Qualified Home

This home built at
3127 Bennett Dr
Bellingham, WA 98225
was verified by
Elizabeth Coe

to meet Indoor airPLUS construction
specifications as established
by the
U.S. Environmental Protection Agency.



Indoor airPLUS qualified homes are
designed to contribute to improved
indoor air quality.

5/21/18



Indoor airPLUS Features

- Moisture and Mold Control
- Radon Resistant Construction
- Pest Barriers
- Effective Heating, Ventilating, and Air-Conditioning Systems
- Safe Combustion
- Healthier Building Materials

Not all features are required in all cases. To learn more about indoor air quality features in your home, ask your builder to review the Indoor airPLUS verification checklist with you, or visit www.epa.gov/indoorairplus.

Energy Rating

Bellingham Residence



Home Energy Rating Certificate

Property

Toomes/Eisenberg
3127 Bennett Dr
Bellingham, WA 98225

HERS

Rating Type: Confirmed
Rating Date: 5/21/18
Registry ID: 813841878

Certified Energy Rater: Elizabeth Coe
Rating Number:

HERS Index: -25

General Information

Conditioned Area	1040 sq. ft.	House Type	Single-family detached
Conditioned Volume	10218 cubic ft.	Foundation	Slab
Bedrooms	2		

Mechanical Systems Features

Air-source heat pump:	Electric, Htg: 14.2 HSPF, Clg: 33.0 SEER.
Water Heating:	Heat pump, Electric, 2.70 EF, 50.0 Gal.
Duct Leakage to Outside	NA
Ventilation System	Exhaust Only: 50 cfm, 33.0 watts.
Programmable Thermostat	Heat=Yes; Cool=Yes

Building Shell Features

Ceiling Flat	NA	Slab	R-20.0 Edge, R-20.0 Under
Sealed Attic	NA	Exposed Floor	NA
Vaulted Ceiling	R-48.0	Window Type	U-Value: 0.180, SHGC: 0.300
Above Grade Walls	R-29.0	Infiltration Rate	Htg: 0.57 Clg: 0.57 ACH50
Foundation Walls	NA	Method	Blower door test

Lights and Appliance Features

Percent Interior Lighting	100.00	Range/Oven Fuel	Electric
Percent Garage Lighting	100.00	Clothes Dryer Fuel	Electric
Refrigerator (kWh/yr)	452	Clothes Dryer CEF	3.42
Dishwasher (kWh/yr)	269	Ceiling Fan (cfm/Watt)	0.00

Estimated Annual Energy Cost

Use	MMBtu	Cost	Percent
Heating	2.2	\$55	-31%
Cooling	0.1	\$3	-2%
Hot Water	2.4	\$58	-33%
Lights/Appliances	12.1	\$300	-170%
Photovoltaics	-27.2	\$-675	384%
Service Charges		\$84	-48%
Total	-10.5	\$-176	100%

Criteria

This home meets or exceeds the minimum criteria for the following:

TITLE

Company

Address

City, State, Zip

Phone #

Fax #

REM/Rate - Residential Energy Analysis and Rating Software v15.4.2

This information does not constitute any warranty of energy cost or savings. © 1985-2017 Noreasco, Boulder, Colorado.

The Home Energy Rating Standard Disclosure for this home is available from the rating provider.

EPA Certification

Bellingham Residence



The EPA Indoor airPLUS logo, featuring a large blue 'A' with a wavy line through it, and the text 'EPA Indoor airPLUS' and 'QUALIFIED HOME'.

Built by:

TC Legend Homes

Verified by:

Elizabeth Coe

Date:

5/21/18

New homes that are Indoor airPLUS qualified meet U.S. Environmental Protection Agency guidelines for improved indoor air quality.

www.epa.gov/indoorairplus





Certificate of Merit

THIS IS TO CERTIFY THAT THE PROJECT AT
3127 Bennett Drive, Bellingham, WA 98225

has qualified for a rating of **5-Star** in the Built Green program. Built Green certification signifies that a holistic, environmentally friendly approach was utilized in creating this home.




T.C. Legend Homes


Built Green Program Manager


Date

July 10, 2018
Date

ID# 2018SF243
builtgreen.net

In Partnership with:



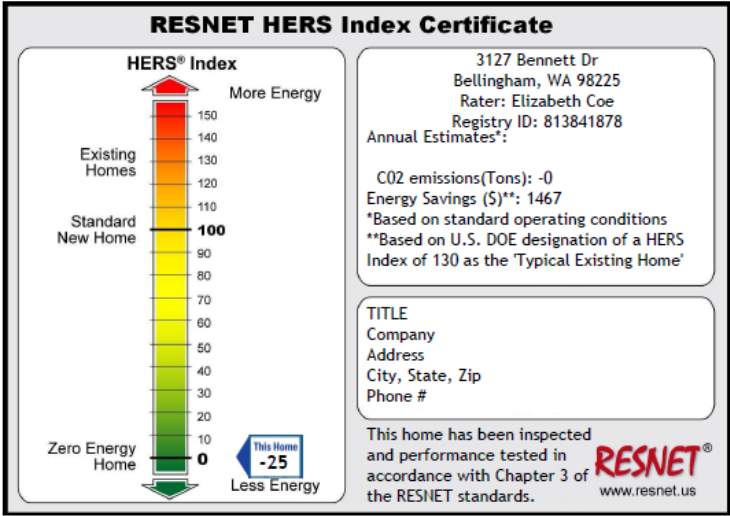
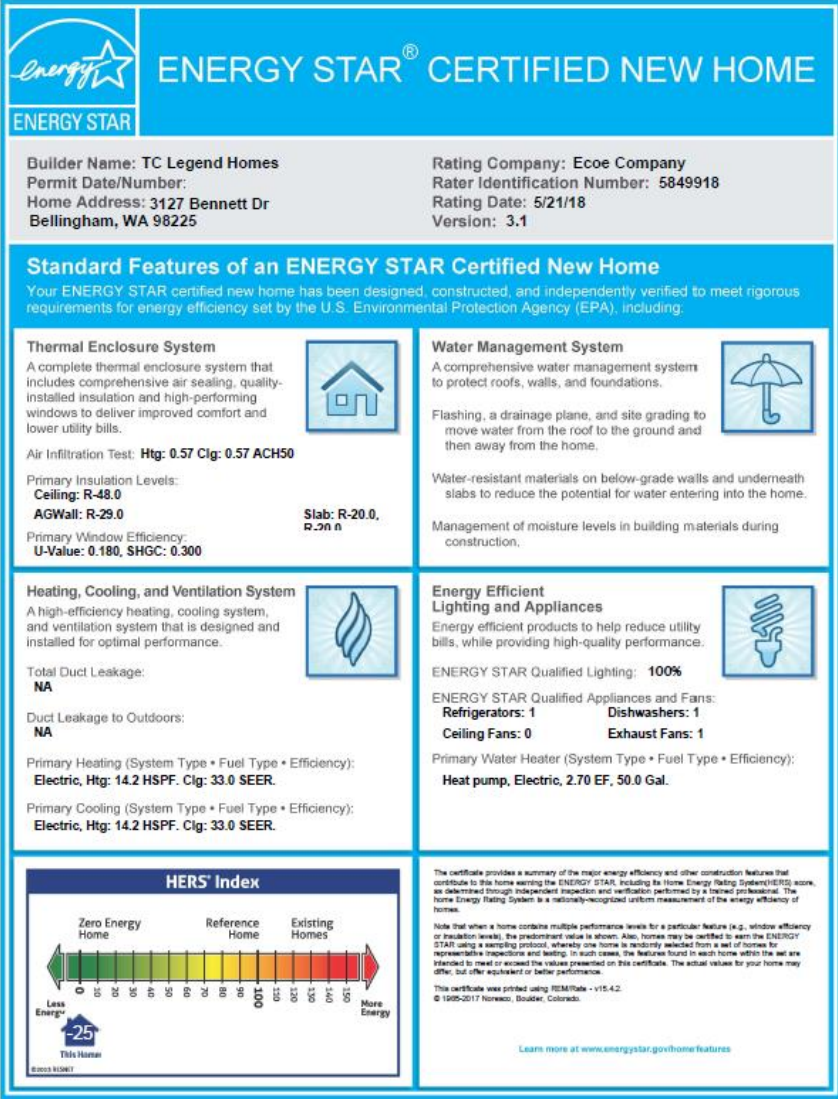
Electrical and Plumbing

Bellingham Residence



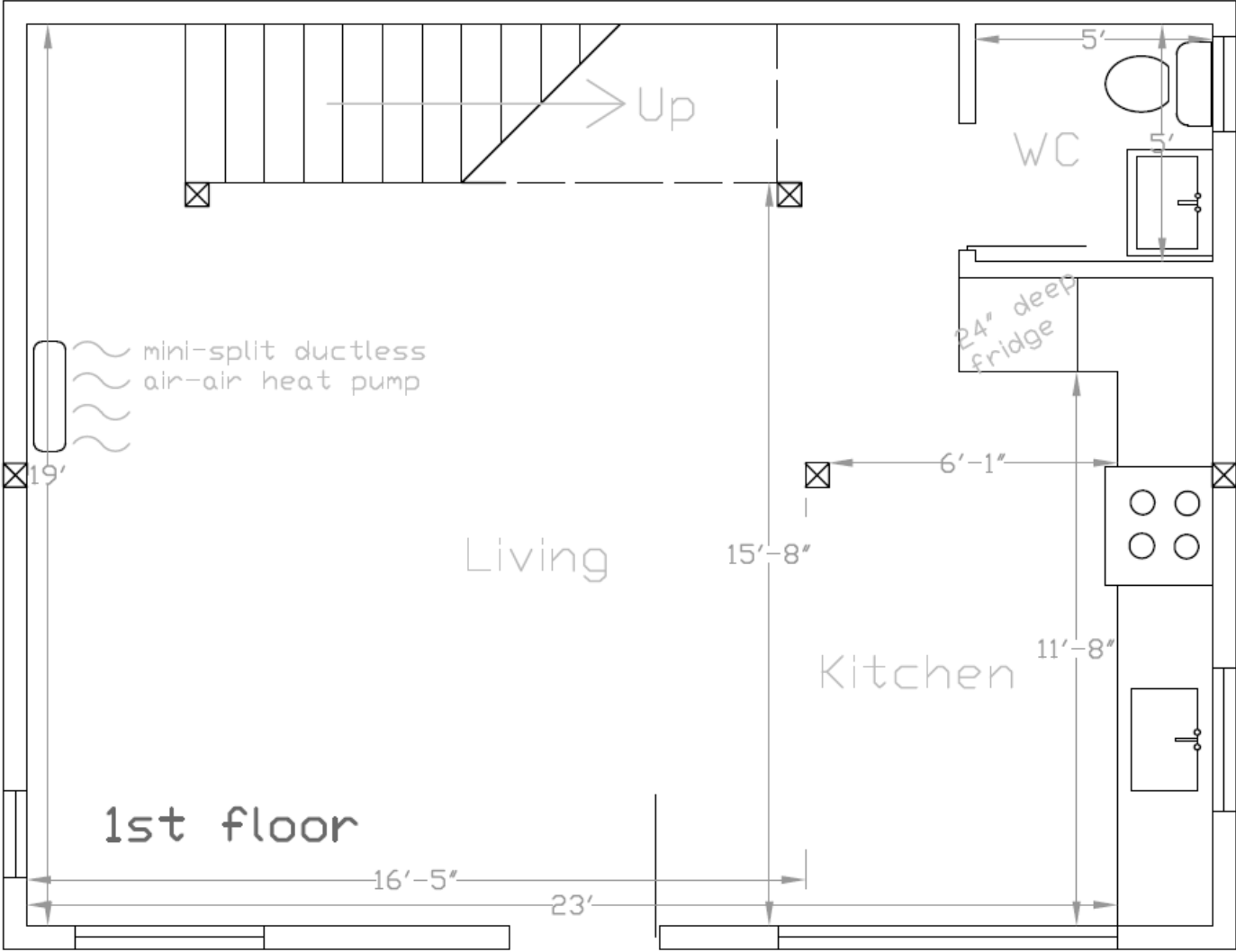
Certificates

Bellingham Residence



Floor Plan

Bellingham Residence



Floor Plan

Bellingham Residence

