Large Residential
Single Family Homes over 3,000 sq.ft.
Ford Residence

Panelwrights LLC
Al Cobb
808 French Road
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2019
High Performance Winner

Structural Insulated Panel Association

PanelWrights
Al Cobb
Ford Residence
Hedgesville, WV.
Large Residential
Single Family Homes over 3,000 sq.ft.

Ford Residence

SIP wall thickness: 6.5" EPS
SIP roof thickness: 12.5" EPS

HERS Index: 48
Blower door: 1.0 ACH50

Project information
Ford Residence
Hedgesville, WV 25427

Date Completed: February 2018

Dimensions of building:
67' x 51' (First Floor)
67' x 34' (Second Floor)

Total sq. ft. of conditioned space: 3052 sq. ft

Built By:
Panelwrights LLC
Al Cobb
808 French Road
Shenandoah Junction, WV 25442

Panels Manufactured By: Insulspan

Designed By:
Natural Elements Homes
Panelwrights LLC
808 French Road
Shenandoah Junction, WV 25442

Describe the end use of the building: Private Residence with Home Office, Workshop, Exercise Room, and extensive entertaining area, located on historic Back Creek in the Eastern Panhandle of West Virginia.

The homeowners' ultimate goal was to be energy independent. They contacted Panelwrights because of our reputation of building low energy and off-grid structures. The homeowners were familiar with SIP construction and wanted to work with an experienced SIP contractor. Achieved a certified ENERGY STAR building.
Describe the benefits of using SIPs on this project.

SIPs were used for maximum energy efficiency and the SIP design met the structural needs of the hybrid timber frame structure. Using SIPs yielded high performance and reduced energy costs on this home. The final HERs score allowed the homeowner to enjoy a tax credit on the home.

Describe any innovative design elements or structural engineering involved:

- A Frost Protected Shallow Foundation vastly improved performance as the entire slab (exposed as finished floor) was insulated from ground contact.
- Perimeter of slab was insulated with Nailbase Panels using cementitious skin as part of the FPSF.
- Passive Solar Design by Panelwrights to maximize solar gain with southern exposure and solar shading with properly sized overhands.

Describe the HVAC system used on the project:

* 4 zoned mini split with SEER-21
* 3 zoned radiant floor - electric to be compatible with solar.
* Whole house ventilation using ERV
* Soap Stone wood oven/stove

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)

- R-50 Frost Protected Shallow Foundation using EPS high density foam with perimeter nailbase and zero contact with ground due to foam detail (see attached)

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 design by Panelwrights to maximize solar gain with southern exposure and solar shading with properly sized and located overhands.
Additionally:
Solar currently being installed to allow net-zero operations by end of 2019

- All interior finishes are low or no VOC.
- Substantial amount of trim details were from locally harvested wood.
- Landscaping includes edible fruit and nut trees native to the area.
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Footing detail

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Foundation details

2. INTERIOR WALL FOOTING
   SCALE: 3/4” = 1'-0"

3. SLAB EDGE TYPICAL DETAIL
   SCALE: 3/4” = 1'-0"  revised
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First Floor Plan
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Second Floor Plan