Single Family Homes over 3,000 sq.ft.

Ford Residence
Ford Residence

Participant information

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

Phone: 304-876-0265
Email Address: annie@panelwrights.com
Website: www.panelwrights.com

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

Project information
Ford Residence
Hedgesville, WV 25427

Date Completed: February 2018

Total cost of project (exclusive of land): $1,000,000

Dimensions of building (all floors of multi-story building):
67' x 51' (First Floor) 67' x 34' (Second Floor)

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

Built By (if different than applicant)
Panelwrights LLC
Al Cobb
808 French Road
Shenandoah Junction, WV 25442

Panels Manufactured By
Company Name (members only): Insulspan
Designed By (if different than applicant - SIPA will only recognize members)
Natural Elements Homes (not a SIPA member)
Panelwrights LLC
808 French Road
Shenandoah Junction, WV 25442

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

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

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.

How did SIP construction help you get this job? 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.

SIP wall thickness and core material: 6.5" EPS
SIP roof thickness and core material: 12.5" EPS

Describe the benefits of using SIPs on this project. Did SIPs help save time, labor, construction costs, or energy? 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 cementatious 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.
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

HERS Index (required only for High Performance Category and recommended for residential projects): 48

Blower door test results (ACH50) (required only for High Performance Category and recommended for residential projects): 1.0 ACH

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

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.

Were any solar panels installed on the project? If so, indicate the size of the system (judged only for High Performance Category): Currently being installed to allow net-zero operations by end of 2019

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):
* 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.

Any additional comments on the project:
Single Family Homes over 3,000 sq.ft.

Panorama

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

Exterior view - rear

Ford Residence
Interior great room

Ford Residence
HERS Index

Ford Residence

HERS PERFORMANCE

ENERGY RATING CERTIFICATE

Address: 14228 Back Creek Valley Road
Hedgesville, WV 25427
House Type: Single-family detached
Cond. Area: 3052 sq. ft.
Rating No.: HESr-0052
Issue Date: December 15, 2016
Certification: Verified

Annual Estimated:
- Electric(kWh): 15632
- CO2 emissions(Tons): 16
- Annual Savings**: $2664

* Based on standard operating conditions
** Based on a HERS 13C Index Home

TITLE
Company
Address
Certified Rater: Randy Swartz
Rater ID: 3413864
Registry ID: 262702814
Rating Date: 12/8/2016
Signature

REM/Rate - Residential Energy Analysis and Rating Software v14.6.4
This information does not constitute any warranty of energy cost or savings. ©1985-2016 NoreSCO, Boulder, Colorado.
The Home Energy Rating Standard Disclosure for this home is available from the rating provider.
Footing detail

Ford Residence

Single Family Homes over 3,000 sq.ft.
Foundation details

**Ford Residence**

**Single Family Homes over 3,000 sq.ft.**

**Interior Wall footing**
- Scale: 3/4” = 1’-0”

**Slab edge typical detail**
- Scale: 3/4” = 1’-0”

Note: 6-1/2” SIPS proposed instead of 4” per architectural plans. Add 2-1/2” to wall thickness and foundation. Refer to SI for foundation dimensions.
First Floor Plan

Ford Residence

Single Family Homes over 3,000 sq.ft.
Second Floor Plan

Ford Residence

Single Family Homes over 3,000 sq.ft.