



High Performance Project



Wright Residence

Wright Residence



Participant information

SIPsmart Building Systems, Inc.
Michael Morley
700 Mississippi St
Lawrence, KS 66044

Phone: 785-843-7007
Email Address: morley702@gmail.com
Website: www.sipsmart.com

Category
Single Family 'Small House' under 900 sq. ft.
High Performance: Yes

Project information
Wright Residence
684 E 1750 Rd.
Baldwin City, KS 66006

Date Completed: 12/1/2018

Total cost of project (exclusive of land): \$250,000
(we were not GC and not privy to total costs)

Dimensions of building (all floors of multi-story building):
27' x 41' single story

Total sq. ft. of conditioned space: 866 sq ft
Built By (if different than applicant)

Backus Construction Co.
Tony Backus
1736 Louisiana St.
Lawrence, KS 66044
Panels Manufactured By

Company Name (members only): Extreme Panel Technologies, Inc.



Designed By (if different than applicant - SIPA will only recognize members)
SIPsmart Building Systems, Inc.
Michael Morley
same
Lawrence, KS 66044

Wright Residence



Total sq. ft. of conditioned space: 866 sq ft

Describe the end use of the building: primary residence for a young couple

How did SIP construction help you get this job? The owners wanted high energy efficiency and high performance features throughout the home. They found us through our website and reputation for SIP construction

SIP wall thickness and core material: 6 1/2" EPS
SIP roof thickness and core material: 10 1/4" EPS

Describe the benefits of using SIPs on this project. Did SIPs help save time, labor, construction costs, or energy? The shell of the home went up in 4 days. The owners have decided to add a solar PV package to offset costs and a super tight envelope makes the design of the solar system easier

Describe any innovative design elements or structural engineering involved: This is a passive solar home with 24" overhangs to shade the home in the summer and to allow sunlight into the interior of the building in the winter. The building uses clerestory windows to bring light into the interior hallway and North bedrooms. Short roof spans mean simple transverse loading that allows for 8' wide panels and easier installation. The offset rectangles with clerestory roof section add volume through the center of the home that makes the home feel larger than it is.

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:

HERS Index (required only for High Performance Category and recommended for residential projects): -17 (see attachment) rating by

Blower door test results (ACH50) (required only for High Performance Category and recommended for residential projects): 217 CFM at 50 Pa equates to 1.59

Energy use intensity in kBtu/ft² (required only for High Performance Category and recommended for commercial projects):
kBtu/ft²/yr -11.1

Describe the HVAC system used on the project: Mitsubishi minisplit system with 1-MXZ-3C24NAHZ2-U1 24,000 BTU, 19 SEER outdoor unit combined with 1--MSZ-FH15NA wall unit (15,000BTU) and 1-SEZ-KD12NA4R1 ducted unit (12,000BTU)
These units use a DC inverter technology which makes them very energy efficient and the highest rated in class.

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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-10 footing insulation to 30" below grade. R-10 under slab insulation combined with R-5 rigid foam above slab and under flooring. This provides warmer and softer floors. Windows are Andersen A series U value .27 SHGC .190

Please list any energy-efficient products or design features, such as lighting, hot water heating, appliances, passive solar (judged only for High Performance Category): All appliances and fans are top rated Energy Star units. Whole house ventilation provided by programmable Panasonic "Whisper Green" DC fan combined with adjustable balancing intake duct. Most lighting is Power Over Ethernet (POE) low voltage. This system is very energy efficient and gives owners remote control of all lighting. No dish washer is an owner request to save energy. 24' overhangs , siting and clerestory windows are part of the passive solar design.

Were any solar panels installed on the project? If so, indicate the size of the system (judged only for High Performance Category): 18 Sun Power PV panels installed for a 5.9 kW system that produces 8,358 kWh. System uses a 7600 Solar Edge Inverter. Federal tax credit for system is -\$6,626

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): We specified on plans that all air and water details were to be from SIPA approved Builders' Guide by Joe Lstiburek. Exterior finishes are installed using "rainscreen" details. Main siding is LP Smart siding with 50 yr warranty over 1/2" treated plywood strips Rainscreen at West and North elevations were a patented system developed by Jim Guffey using heat treated Ash lumber milled for a patented clip rainscreen system. These details add durability to the home

Any additional comments on the project: The owners, Todd and Jaime Wright, did much of the product research and their choices are based on high energy efficiency and durability of materials and systems.

Wright Residence



Any additional comments on the project:

Our client owned a triplex that was previously located on the property. As he approached retirement, he wanted to reinvent the property, while also providing a home for himself & his wife. As such, he hired us to oversee the demolition of existing building (and harvesting of materials that can either be reused or donated), replatting process to take it from 2 lots to 3 single family lots, variances committees with the City, design and construction of all 3 residences. His vision was that each project would be extremely energy efficient, sustainable, similar in design but still unique. As such, the projects have been dubbed the "3 sisters". The first project to be completed is the home we are applying for- the owner's personal home, the 1st sister. We have just completed construction of the 2nd sister, and negotiations are underway for the sale of the 3rd lot & construction of the home on it.

Homeowner Testimonial (taken from our Houzz page review): "We wanted a green house with about 1500 - 2000 square feet. Ferrier's team turned our dreams into reality. We love our house!"

We appreciated Ferrier's knowledge about green building and his help during the teardown of the existing buildings, the replat of the property and the design of the new house.

Ferrier sets a high standard for his sub-contractors! Subs had to satisfy not only us but the Ferrier Team!

We enjoyed the journey! Building a new house can be a daunting process. You need a professional like Ferrier!"

Exterior front view

Wright Residence



Exterior side view

Wright Residence



Interior kitchen

Wright Residence



Entrance hall

Wright Residence



Interior view

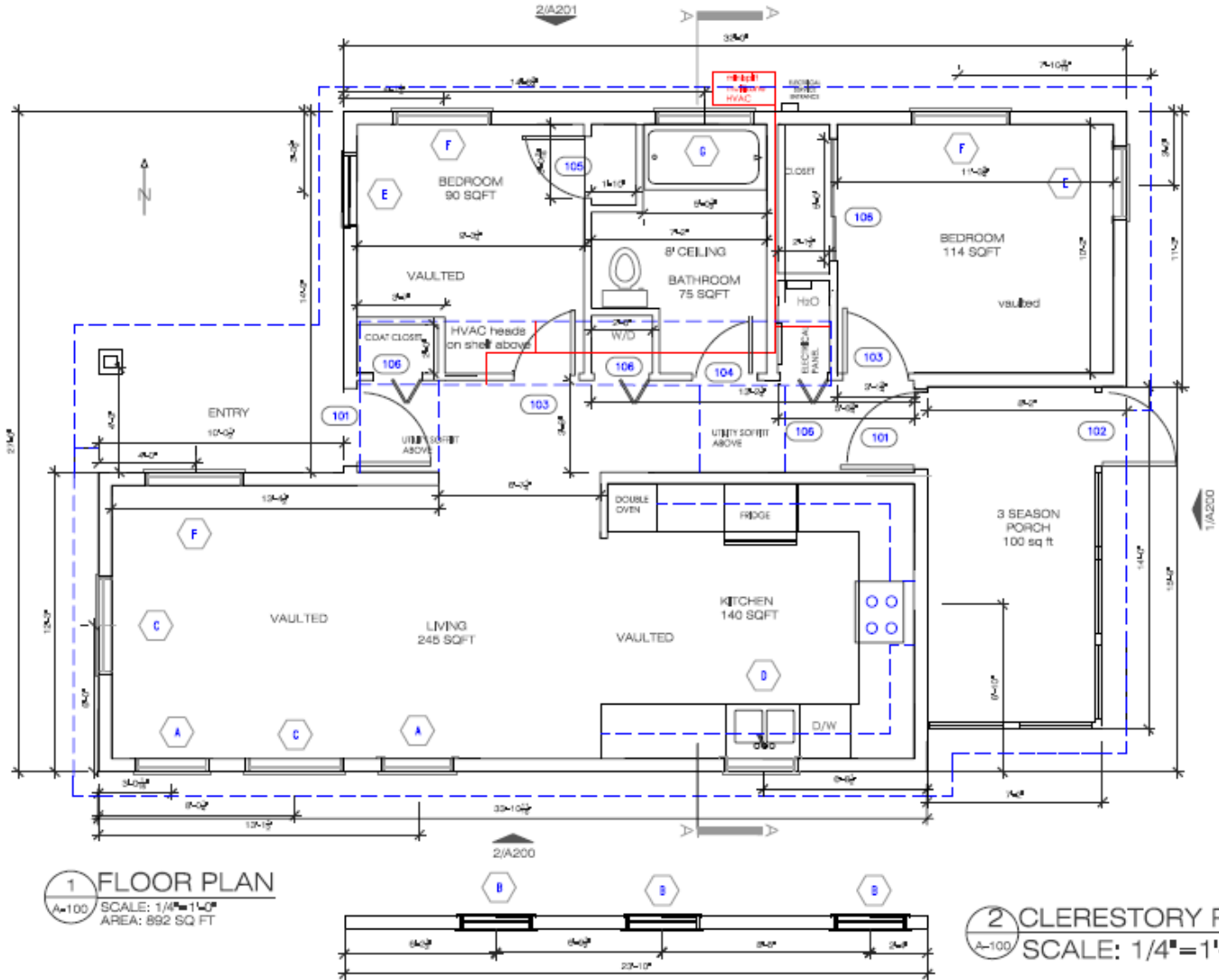
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Floor plan



HERS Rating

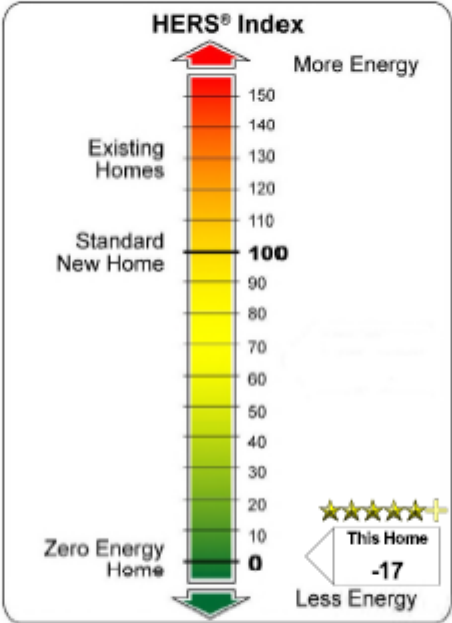
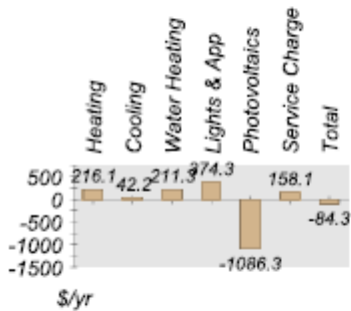
Wright Residence



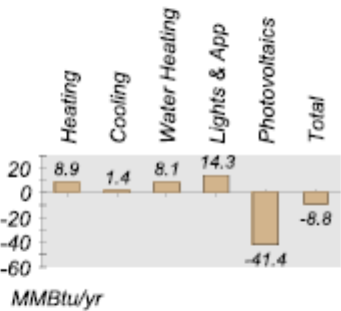
HERS PERFORMANCE
ENERGY RATING CERTIFICATE

Projected Rating: Based on Plans - Field Confirmation Required.

Estimated Annual Energy Cost



Estimated Annual Energy Consumption



Address: 684 E1750 Rd
Baldwin City, KS

House Type: Single-family detached

Cond. Area: 866 sq. ft.

Rating No.:

Issue Date: November 06, 2018

Certification: Verified

Annual Estimates*:
CO2 emissions(Tons): -2
Annual Savings**: \$1775

* Based on standard operating conditions
** Based on a HERS 130 Index Home

Performance Plus Homes
5165 W 198th
Stowell, Ks. 66085

Certified Rater: Bruce Chyka
Rater ID: 7518279
Registry ID:
Rating Date:

Signature: Bruce W Chyka

Digitally signed by: Bruce W Chyka
DN: CN = Bruce W Chyka C = US
O = Performance Plus Homes
Date: 2018.11.06 15:00:10 -0600

REM/Rate - Residential Energy Analysis and Rating Software v15.6.1
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The Home Energy Rating Standard Disclosure for this home is available from the rating provider.