

Project #55 – High Performance



Lewis ADU

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Participant Information:

Premier Building Systems LLC
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Category: Single Family Homes under 900 sq. ft. "Small House" - High Performance

Project Information:

Lewis ADU
43916 Washburn Dr
Three Rivers, CA 93271

Date completed: 07/15/21

Dimensions: 24' x 24'

Total cost of project: \$95,000

Total sq. ft.: 550 sq ft

Built by:

Christian Lewis, Robert Molloy, Jeremy Weikel
43916 Washburn Dr
Three Rivers, CA 93271
202-309-6008

Panels Manufactured by: Premier Building Systems LLC

Designed by:

Christian Lewis & Aaron Zerlang
43916 Washburn Dr
Three Rivers, CA 93271
202-309-6008



Building use:

The building is an accessory dwelling unit, a secondary housing unit on a single-family residential lot. It is a one bedroom, one bathroom freestanding home.

How did SIP construction help you get this job?

We wanted to build our home ourselves with a sustainability high energy efficiency level. SIPs allowed us to build this unit ourselves, at a quick pace and at a high level of construction. With higher R-Values than stick building, it also gave our building high and efficient insulation levels, reducing energy costs and increasing indoor air quality.

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SIP wall thickness: 6 1/2" in - EPS Insulation
SIP roof thickness: 10 1/4" in - EPS Insulation

Describe the benefits of using SIPs on this project:

Given that we used SIP panels on all exterior walls and roof panels, it saved us time, labor, construction costs, especially with the rising constructions materials, and lastly also is saving us energy with a tight sealed energy efficient building. It also allowed us to have a safer indoor environment with lower pollutants and higher air quality.

Certifications the project received:

No official certifications but qualified for LEED platinum.

HERS Index:

Not measured but should be under 20 HERS score as Tesla Solar Panels and Powerwall battery generated and store more energy than we can consume on most days.

Blower door test results:

Not measured but definitely below 5.

Energy use intensity in kBtu/ft²:

Not measured but the whole unit is heated and cooled by a 18,000 BTU Daikin mini-split.

HVAC System:

8,000 BTU Daikin mini-split

Additional energy-saving materials used in the building envelope:

Windows have a U-Factor of 0.3, solar heat gain coefficient of 0.21, and air leakage of less than 0.3.

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

- All lighting is energy efficient LED lighting
- Hot water heater is a tankless electric water heater
- All appliances are energy star rated
- Low flow faucets
- All coverings are not drywall but all FSC Certified Purebond plywood wall coverings with 100% natural wood bonded with a food-grade soy-based adhesive that does not emit toxic air contaminants - High Efficiency 18,000 BTU min split unit
- Radiant flooring in bathroom

Solar panels installed:

4.08 kW Tesla Solar Panel System with a Powerwall 2 battery with a 13.5 kWh capacity.

Additional sustainable materials or design features:

Finished concrete floor sealed and finished with a Lithium Densifier NOT sealers.

All paint and sealers were low or no VOC finishes.

The stains used were mineral stains with no VOC.

All landscaping was made to divert water from the base of the house but still allow it to seep into the land surrounding the project.

The home was also built with a pad that was dug 4ft into the ground for further energy efficiency and a lower profile in the neighborhood.

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