



Living Stone Lodge

Living Stone Lodge



Participant information
Enercept, Inc.
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Watertown, SD 57201

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

High Performance: No

Project information
Living Stone Lodge
81327D St NW
Halliday, ND 58636

Date Completed: July 2018

Total cost of project (exclusive of land): \$260,000

Dimensions of building (all floors of multi-story building):
52' Diameter (Deca-hexagon / 16 sided)

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

Total sq. ft. of conditioned space:
1,822 sq. ft. on main floor with 610 sq. ft. loft (total sq. ft. 2,432)

Built By (if different than applicant)
Traver Industries
Geordan and Diane Traver
PO Box 1240
Beulah, ND 58523
Panels Manufactured By

Company Name (members only): Enercept, Inc.



Living Stone Lodge



Designed By (if different than applicant - SIPA will only recognize members)

Traver Industries
Geordan and Diane Traver
PO Box 1240
Beulah, ND 58523

Total sq. ft. of conditioned space: 1,822 sq. ft. on main floor with 610 sq. ft. loft (total sq. ft. 2,432)

Describe the end use of the building: This single family home is a prototype for a Native American Housing Development for the three affiliated tribes of the MHA Nation. The home is currently occupied by the Traver Family.

How did SIP construction help you get this job? The core concept of the Living Stone Lodge Project is to move the homeowners and their children above ground, where natural air and light qualities prevail. This meant creating a large volume loft area and positive space for the children. The structural strength of structural insulated roof panels made this easy. The roof system is supported by the exterior walls and center compression ring and requires no interior bearing walls. This feature gives the owners a completely open loft area with plenty of light and space for activities.

SIP wall thickness and core material: ICF wall / 1,690 sq. ft

SIP roof thickness and core material: 12" with expanded polystyrene (EPS) core / 2,560 sq. ft

Describe the benefits of using SIPs on this project. Did SIPs help save time, labor, construction costs, or energy? According to the builder, "The 'cookie-cutter' construction of the structural insulated panels saved over 40% in estimated labor costs."

Describe any innovative design elements or structural engineering involved: The self-supporting roof system with no need of interior walls for support creates a building with multiple possible applications. All of the mechanical elements are in the center of the home. Kitchen and bathrooms butt up against the center mechanical area creating an efficient connection to the water heater. All the heat created from the mechanicals is created in the center of the home, similar to traditional Native custom.

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: n/a

Describe the HVAC system used on the project: The home is heated and cooled with a Weil McLain ECO-70 Boiler / 3-Zone Radiant Floor Heat with Domestic Water Option and a 2-Ton Ductless Daikin Mini-Split. The owner noted that the home is primarily cooled by the sub-ground floor and that the A.C. was not needed during the summer of 2018. The home also has seven ceiling fans to circulate air, and an air exchanger.

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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) Windows used are Northstar Double Pane, Argon filled, Low-E, 366 glass, Energy Star Rated casement and awning windows / U-Value .26

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 appliance are Whirlpool Energy Star rated. All lighting is 100% LED. The water heater is a Weil McLain 35 gallon indirect (heated by the same boiler as the radiant floor heat system).

Were any solar panels installed on the project? If so, indicate the size of the system (judged only for High Performance Category): n/a

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): A 3' Berm was built up around the perimeter of the home to raise the frost-line, and to direct breezes into the open awning windows. The owner reports that this has been very effective in keeping the home cool.

Indigenous plants and healing herbs will be planted in the spring.

Any additional comments on the project: Due to the success of this prototype, the Native Housing Development will be building five additional units in 2019.

This home is a runner up in the 2019 ICF Builders' Awards, the winner will be named in February.

Exterior front view

Living Stone Lodge



Exterior front rendering

Living Stone Lodge





Exterior construction view

Living Stone Lodge





Interior great room

Living Stone Lodge



Final Plans

Living Stone Lodge



- CONSTRUCTION NOTES**
- 1. SEE SHEET 1 FOR GENERAL NOTES.
 - 2. SEE SHEET 2 FOR GENERAL NOTES.
 - 3. SEE SHEET 3 FOR GENERAL NOTES.
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