



NEW

High Performance Consideration



Glenwood Area Fisheries

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Participant information

Extreme Panel Technologies, Inc.
Perry Penske
500 Lafayette Road
Cottonwood, MN 56229
Phone: 800-977-2635
Email Address: perry@extremepanel.com
Website: www.extremepanel.com

Category: Commercial/Industrial/Institutional Buildings under 10,000 sq. ft.

High Performance: Yes

Project information

Glenwood Area Fisheries Minnesota DNR
23070 North Lakeshore Drive
Glenwood, MN 56334

Date Completed: 2017

Dimensions of building (all floors of multi-story building): 9,407 sqft two story facility

Total sq. ft. of conditioned space: 9,407 sqft two story facility

Built By (if different than applicant)

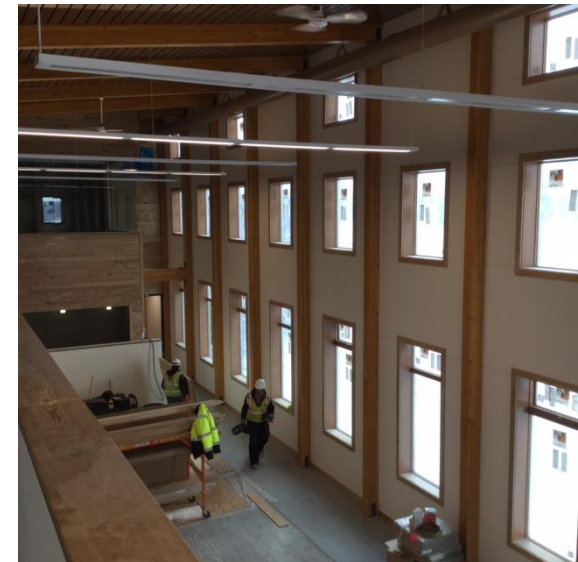
Kraus-Anderson Construction Company
Duane Kaiser
206 Beltrami Avenue
Bemidji, MN 56601

Panels Manufactured By: Extreme Panel Technologies, Inc.

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

Minnesota DNR
Jancis Curiskis
500 Lafayette Road
St. Paul, MN 55105

Total sq. ft. of conditioned space: 9,407 sqft two story facility



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Describe the end use of the building:

This new 9,407 sq. ft, two-story facility for the Minnesota Department of Natural Resources was constructed on the Glenwood Hatchery site, which produces walleye to be stocked in area fishing lakes. The building houses new offices and a research lab that evaluates stocking, artificial spawning habitat and genetic performance. The hatchery also monitors invasive species. The DNR- designed facility is built with a zero energy design.

How did SIP construction help you get this job?

The state of Minnesota loves SIPs, however it does not like our industry. They have used several SIP manufactures and have had several issues on their past projects. This was a make it or break it job for SIPs with the state of Minnesota. If it went well they will continue to specify SIPs, if not they were going to find another way to build. It was a hit, all went great! SIPs made the project on schedule while fighting adverse weather and torrential rains all throughout the build. Plus the tested product goes to prove that this building was tight with a .36ACH@50.

SIP wall thickness and core material: 10" walls - expanded polystyrene foam

SIP roof thickness and core material: 12" roof - expanded polystyrene foam

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

All of the above. This is a net zero positive building, definitely saving energy!

Getting this built out of SIPs was the only way this building could have been on schedule with the adverse weather conditions.

Labor was saved as the precise cut SIPs saved a ton of time during the erection process.

Project came on budget due to the accuracy and time saving of the SIPs.

Perry from Extreme Panel got to train a very large contractor (Kraus Anderson) in erecting panels, now they are not afraid of putting up SIPs from Extreme Panel.

Describe any innovative design elements or structural engineering involved:

Heavy Glu-lam timber posts and ridge beams were used for the main structural elements of the build. The Glu-lams were delayed 6 weeks, but Extreme gave the go ahead to put the panels up without the posts. The contractor was going to delay the build 6 weeks, but allowing them to move forward and put up the rest of the walls did not hold up the build process like the contractor originally thought. Having weekly meetings with the project superintendent and being on site when critical decisions needed to be made aided in the project finishing on time.

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:

LEED Gold Certification

Minnesota Sustainable Building Guilders (B3) 2017 best of B3 2030 award

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Blower door test results (ACH50) (required only for High Performance Category and recommended for residential projects): 0.36
Energy use intensity in kBtu/ft2 (required only for High Performance Category and recommended for commercial projects): 10.10

Describe the HVAC system used on the project:

Geo-thermal ground-source heat pump, solar panel system with single central air handling for HVAC. including supply fan, return/ relief fan, chilled water coil, and heating water coil. Air to be distributed via VAV boxes linked with temperature sensors. Windows will be operable. The systems will be tested and balanced to provide the proper air/water flows.

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)

- 1 Provide a LEED Gold/ B3 certified zero energy building that utilizes natural daylighting and maximizes the use of Geothermal and solar potential.
- 2 Provide functional, durable and flexible spaces for offices and meeting spaces, with both indoor and outdoor components.
- 3 Provide a welcoming environment for visitors with clean comfortable restrooms, and information.
- 4 Provide a secure facility to serve as the 'main entrance' to the Hatchery site, with suitable parking access.

High Performance windows were used with proper SHGC and U-values to take advantage of solar gain to assist in the building performing like should have.

Triple glazed windows

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 plumbing fixtures will be low-water-usage fixtures. Electric service voltage for this building will be 120/208-volt 3-phase, 4 wire power. The main service panel will be a 400 amp distribution panel board. A meter will be provided and integrated with the BAS for energy use tracking and measurement verification. All lighting systems will be LED source fixtures.

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):

Sustainable building design reduces energy expenditures, enhances health, well-being and productivity of occupants, improves the quality of the natural environment, and can contribute significantly to higher-performing new State buildings with lower life cycle costs

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Any additional comments on the project:

The DNR office in Glenwood is a 9407 SF co-located area headquarters that was designed to promote and highlight sustainability in Minnesota. The team met early in the process and continued close coordination throughout. Starting with the "Lowest hanging fruit" ideal the team began picking the strategies that would provide the most impact.

First was a tight well insulated envelope to minimize energy needs. Second was how to generate the energy needed. Geo-thermal in tandem with Photovoltaic panels proved to be the best choice for this site. Civil worked with Mechanical to locate the Geo- thermal field under the parking area to minimize site disruption. Mechanical and Structural worked to ensure ducts were sized to fit within the structural framing to minimize the floor to floor height, thus reducing the overall building envelope.

Architectural and Electrical worked to eliminate wiring chases / outlets from the exterior SIP panel walls. Many of the building materials specified took advantage of locally sourced products available from the state. The base of the building utilized Granite from local quarries. Thermally treated ash wood siding harvested and milled in Minnesota was used due to its minimal maintenance requirements and life span.

Concrete, vapor barriers, counter tops, carpeting, ceilings to name a few were all specified based on their meeting both B3 and LEED sustainability requirements. All the materials and details were specified to provide a building that requires minimal maintenance while being durable enough to last generations rather than years. Durability and longevity were given weight as a part of our sustainable plan. The building was set on the area once occupied by the old farm house/ office as an effort to minimize the disruption of undeveloped land.

The use of pervious pavers in the parking area was utilized in coordination with retention ponds and native plants to replace much of the lawn areas as a way to reintroduce a more sustainable native habitat.

Front view

Glenwood Area Fisheries



Main entrance

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Rear view

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Interior and exterior views

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