

## Project Profile



**Headwaters Camp**  
**93 Lower Cedarview Drive**  
**Big Sky, Montana**

**41%** of construction waste diverted

**70%** permeable lot

**73%** better envelope than energy star standards



### LEED® Facts Headwaters Camp Big Sky, Montana

LEED for Homes  
Certification awarded 10/15/08

**Platinum** **115\***

Sustainable Sites 16.5/22

Water Efficiency 7/15

Energy & Atmosphere 25.5/38

Materials & Resources 13.5/16

Indoor Environmental Quality 13/21

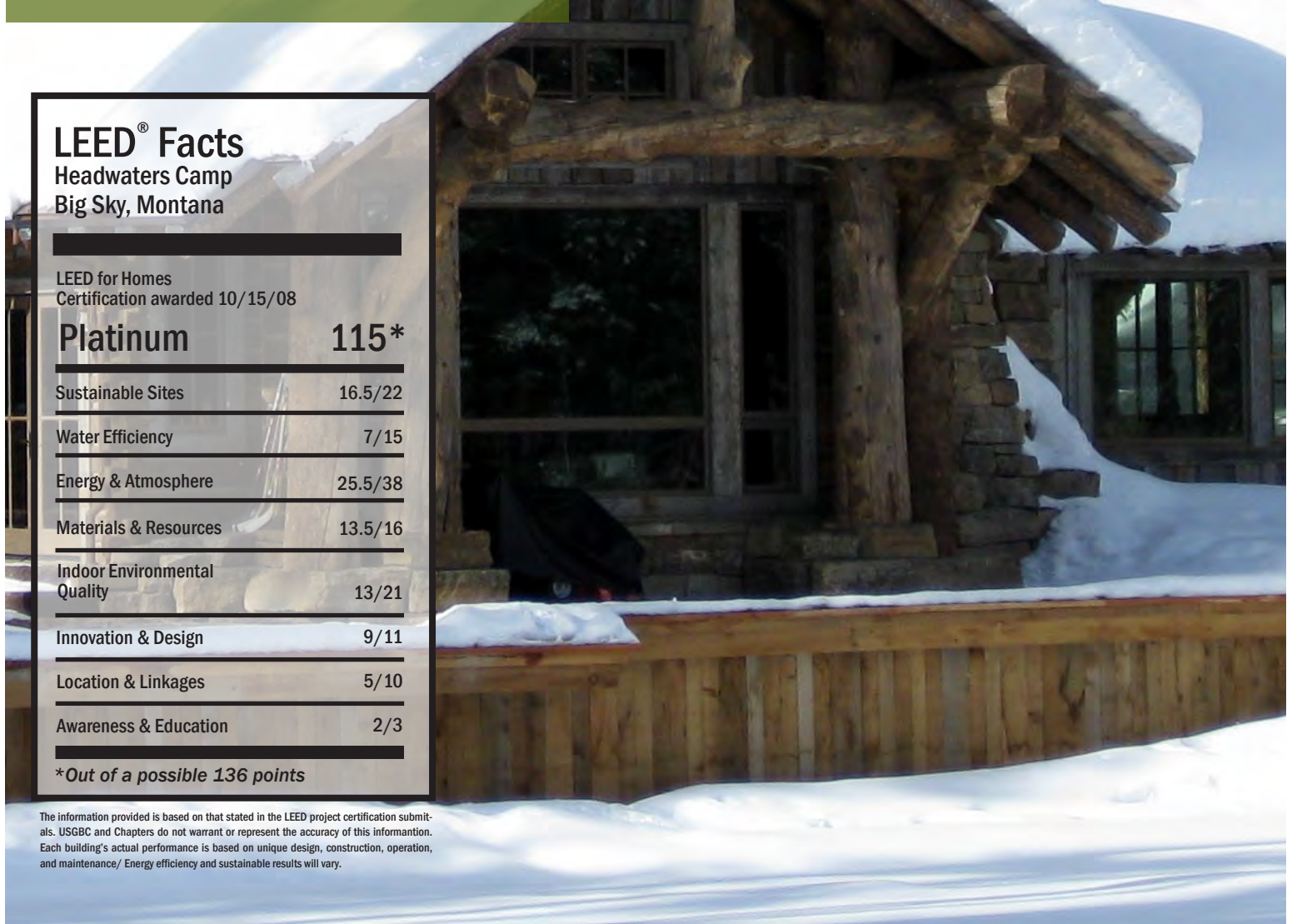
Innovation & Design 9/11

Location & Linkages 5/10

Awareness & Education 2/3

*\*Out of a possible 136 points*

The information provided is based on that stated in the LEED project certification submittals. USGBC and Chapters do not warrant or represent the accuracy of this information. Each building's actual performance is based on unique design, construction, operation, and maintenance/ Energy efficiency and sustainable results will vary.



### Headwaters Camp – Big Sky

# Sustainable in Big Sky Country

## Combination of Systems and Envelope provide Plastic Decrease in Energy Consumption

### PROJECT BACKGROUND

The primary ambition of the project was to preserve and protect the natural environment of the site while tastefully introducing rustic structures in a sustainable manner. The site is a 22-acre wooded parcel with a 1900 square foot cabin, aquatic development, and a trail system connecting to existing trails for horseback riding, mountain biking and hiking.

### STRATEGIES AND RESULTS

The combination of alternative energy systems and a very efficient building envelope decrease the project's carbon footprint while producing dramatic energy savings. A 2-kW solar array provides electricity for the site and any remaining is sold directly to the local electric company. The aquatic development ponds are designed for aesthetics, recreational activities such as ice skating and fly fishing, and energy production, serving as the thermal mass required for the geothermal heating system, producing all of the heat necessary to keep the cabin's occupants cozy on the coldest Montana nights. Triple glazed windows, super insulation with R-values exceeding 49 in the roof and 25 in the exterior walls, and an insulated conditioned crawl space collectively contribute to the extremely tight building envelope, surpassing the Energy Star for Homes standard by 73%.

A waste reduction strategy encompassing proactive planning, recycling and innovative uses of project waste allowed the diversion of 41% of construction waste and 100% of the site tree clearing from landfills. This strategy was implemented early with efficient takeoffs and framing concepts designed to reduce waste by 10% before construction even began. Five thousand one hundred eighty pounds of cardboard and steel were recycled, and 290 tons of chipped trees were taken to a nearby agricultural facility to provide fuel for the plant's electricity demands. Additional trees taken down within the building envelope and for fire mitigation efforts were used as a unique log skin roof with the remainder donated to local families to heat their homes.

The lot is over 70% permeable and only native and drought tolerant plants have been introduced to the site decreasing the demand for irrigation. The home is outfitted with dual flush toilets, very efficient water fixtures and a grey-water reuse system which will be used to further decrease the landscape irrigation demand. The appliances are all Energy Star rated. Local, reclaimed and recycled materials are utilized throughout and low VOC finishes contribute to the home's high indoor air quality. Constant fresh air is provided by the homes air exchange system, ensuring clean Montana air to breathe.

**“As a builder focused on superior quality homes constructed with sustainable building practices, it is extremely gratifying to see our dedication pay off in a Platinum Certification for Headwaters Camp. Increasingly we are finding that building “green” is about building smart, not about building more expensively.”**

Todd Thesing, Managing Partner, Highline Partners, Ltd.

**“Many of our subcontractors had never worked on a LEED certified project before. Yet, as you might expect from the talent and environmental focus of our community, they immediately saw how sensible the approach was and showed incredible commitment to the project.”**

Rob McRae, Managing Partner, Highline Partners, Ltd.



Architect: Dan Joseph Architects  
Commissioning Agent: Randy Hansell, Earth Advantage Institute  
Contractor: Highline Partners, Ltd.  
Interior Designer: Carol Sisson Designs  
LEED Consultant: Kath Williams & Associates  
Owner: Todd and Melissa Thomson  
Structural Engineer: Bridger Engineering

Project Size: 1900 square feet

