

# PROJECT PROFILE



**SUSSEX SCHOOL**  
1800 SOUTH 2ND STREET WEST  
MISSOULA, MONTANA

**29.1%** energy cost savings

**54.6%** water use savings

**38%** stormwater runoff reduction

## LEED® Facts

Sussex School  
Missoula, Montana

LEED for Schools 2007  
Certification awarded September 2011

**Gold** 45\*

Sustainable Sites 10/16

Water Efficiency 4/7

Energy & Atmosphere 11/17

Materials & Resources 4/13

Indoor Environmental  
Quality 11/21

Innovation & Design 5/6

\*Out of a possible 80 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 its unique design, construction, operation, and maintenance. Energy efficiency and sustainable results will vary.

## SUSSEX SCHOOL CLASSROOM ADDITION

## Classrooms Support Sustainable Education

Sussex is the first school in Montana to achieve LEED Certification

## PROJECT BACKGROUND

Sussex School is a non-profit kindergarten through eighth grade elementary school founded in 1971. The mission from the beginning has been to provide challenging, progressive curriculum in a nurturing environment so that students can become confident, enthusiastic leaders in their community. Students are taught to respect the natural world, and environmental education both in and outside the classroom is a hallmark of the Sussex curriculum. In order to meet their goals for education and growth, Sussex has embarked on a multi-year program to add classroom space, science lab and expanding athletic facilities. This classroom addition project is the first phase, and it made sense to the school founder, Bente Wilson, the staff, parents and teachers to demonstrate sustainability in their new facility. The result is a LEED Gold Certified classroom facility, the first school in Montana to achieve any level of LEED Certification.

## STRATEGIES AND RESULTS

**Site:** The Sussex site is located in an established mixed use neighborhood within walking distance from numerous public transit lines. Bike racks were added to encourage students and staff to bike to Sussex. The campus master plan calls for preserving 15,860 sf of vegetated open space for the life of the facility. Native landscaping and restoration on the site provide educational opportunities for the students, and was also part of the strategy for reducing storm water runoff by over 38%. The project started with deconstruction of the existing old Zip classroom building. Materials were salvaged, donated to Home Resource or reused in the new construction. For example, the old asphalt shingles were ground up and used as backfill.

**Water:** Native landscaping and efficient drip irrigation systems will reduce potable water use by over 69%. And efficient flow and flush plumbing fixtures inside the building will save over 54% compared to the current National standards for water-efficiency.

**Energy:** The design team included an energy modeler at the early stages of design. Due to the tight budget, it was important to find the most cost effective strategies to yield savings in utility bills and reduce energy use. Energy efficiency measures include highly insulated structural insulated panels (SIP) for the walls (R-32) and roof (R-45), high performance low-e wood frame windows, natural ventilation via operable windows, natural cooling, high efficiency boiler (93% AFUE), radiant floor heating, and air-to-air heat exchange for spaces that required mechanical ventilation. The buildings were oriented with the long faces to the south and north, maximizing the potential for natural daylight and for south-facing roofs for active solar panels. The project has a 5 kW solar electric array that is expected to provide at least 8% of the annual electrical use of the classroom addition. With all of these measures, the building will cost 29% less to operate and use at least 17% less energy compared to a code-compliant design.

**Materials:** The contractor was able to divert over 76% of demolition and new construction waste from landfill and toward recycling, reuse and salvage. For example, wood floor was saved from the old Zip building and re-installed in the math classroom. The average recycled content for new materials used on the project is over 10% and regional materials average is over 15%. The windows, for example, include recycled aluminum on the exterior and locally-harvested larch on the interior.

**Indoor Environmental Quality:** The classrooms are naturally ventilated and cooled with the operable windows, enabling the students to have plenty of fresh air and views to the outside. The project received additional LEED credit for providing 30% more outside air ventilation than code requires. The interior materials were carefully selected to be low-emitting and low-odor to protect indoor air quality.

**Innovation and Curriculum:** Sussex was awarded Innovation credits for doubling open space preservation, achieving over 40% water efficiency, meeting bike network requirements and developing a 'School as Teaching Tool' curriculum that will give every student at least 10 hours per year of instruction that connects the buildings to local and global sustainability issues.

“As a school that is really interested in teaching our kids about sustainable communities, we need to match our ideals.”

Robyn Reed Gaddy  
Sussex School Director



Owner: Sussex School  
Architect: OZ Architects  
Interior Design: Intaglio Design  
LEED Consultant: Design Balance LLC  
Contractor: Gaddy Construction & Ayers Construction  
Commissioning Agent: DC Engineering  
Energy Modeler: DC Engineering  
MEP Engineer: DC Engineering  
Structural Engineer: Beaudette Consulting  
Landscape Architect: OZ Architects  
Civil Engineer: WGM Group  
Project Building: 7,930 square feet  
Project Site: 26,361 square feet  
Construction Cost: \$1.4 million

Photographs Courtesy of: Sussex School and OZ Architects

## OUR MISSION

The USGBC Montana Chapter promotes balanced social, economic and environmental stewardship in Montana by leading and educating about green building practices that will create health and sustainable communities in which to live, work and play.



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