

Ensemble® Feature Article



With the help of Benjamin Moore & Co.'s EcoSpec® paints, an independent elementary school in central New Jersey embraces the green building movement as an integral component in the students' learning experience.

Lessons & Landscape at The Willow School



Inspired by a curriculum dedicated to teaching responsibility and respect, The Willow School in Gladstone, New Jersey, has created an environment that models these virtues in its buildings and grounds. Cofounders Mark and Gretchen Biedron realized that constructing green – or environmentally sensitive – classrooms was part of teaching children to become environmental stewards and concerned citizens.

The Biedrons' vision culminated in the first independent elementary school building to be gold certified under the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED®) Program. The result is a campus "where children love to come to school and teachers want to teach," says Mark Biedron. The school's name reflects the fact that "a willow tree, if given the right environment, absolutely flourishes," says Gretchen. "It's the same with children; given the right environment, they thrive."

Opened in 2003, the school has 41 students in kindergarten through second grade. It plans to expand to 216 students in eight grades, adding one grade each year.

Joyful Learning



The Willow School's genesis was the Biedrons' search for a school for their children that combined academic excellence with the joy of learning. Unable to find this balance, they designed their own school, bringing their individual strengths and backgrounds to the project.

Gretchen Biedron combined her love of languages and experience working with dyslexic children to shape a mission focused on mastery of the English language. She combined this language emphasis with a rigorous academic program that promotes "joyful learning."

This approach weaves together different elements of the curriculum to create rich academic experiences. "For instance," says Gretchen, "when third graders visit the pond, they're multiplying fly nymphs. In music, they listen to Handel's water music, and in movement class, they do the Dragonfly Dance."

To counteract what they saw as society's inadequate attention to developing caring citizens, the Biedrons selected Mary Beth Klee's Core Virtues Program as the lens through which all subjects are taught.

Students examine such virtues as gratitude, diligence and responsibility in readings and discussions across the curriculum.

Environmental Stewards



Mark Biedron's construction background proved useful as he explored how the physical surroundings could help children understand their connection to the natural world. He previously directed marketing for Con-Lux, his family's industrial coatings company. His current business, Solid Wood Construction, specializes in reconstructing old barns as homes.

"We wanted to teach an ethical approach to life, and we had a 34-acre wooded site," says Mark. "That started us thinking about being stewards of our environment and building a green building." The LEED® program matched their goals.

Although the school's architectural firm – Princeton-based Ford Farewell Mills & Gatsch – had completed nearly three-fourths of the construction drawings, the Biedrons asked them to take a two-month break to consider how the classroom building might become a gold-certified LEED® facility.

Both Mark and one of the architects became LEED® Accredited Professionals™, ready to lead the team effort through their tested knowledge of green building practices and principles and their familiarity with LEED® criteria.

Learning Environment



The school property is an old farm, complete with an 1840s farmhouse and barn. Three-fourths is wooded, with a third being wetland on which nothing will ever be built. By preserving the natural beauty of the grounds, the school both protects the environment and provides natural learning spaces.

To understand their surroundings, school planners began with a site analysis that studied the property's soil, trees and water quality, as well as the region's geological, cultural and economic history. "You use this historical data as a teaching tool to connect whatever you're teaching to what happened right here," says Mark.

The architects designed a 15,000-square-foot classroom building that draws elements from the area's farming roots. Its 30-foot high cathedral ceilings are reminiscent of a barn's interior. The building is sited along an east/west access to harvest as much daylight as possible.

Following LEED® direction, the architects used recycled and rapidly-renewable resource materials. The roof is stainless steel, and the exterior stone walls came from barns that were being demolished in Pennsylvania. The deconstructed Diamond Toothpick Factory in Maine supplied the roof rafters, while the structural supports were recycled from a South Carolina cotton mill. The Douglas Fir interior trim was created from 40-foot-diameter wooden vats purchased from an old Heinz Ketchup factory.

Rainwater Recycling



Mark is especially proud of the building's waste water management system. Rainwater that falls on the roof is transported to a tank under the parking lot. From there it is pumped into the barn basement, disinfected and returned to the building to be used to flush the toilets.

The waste water is then pumped into the ground where a constructive wetland filters the water, as microbes in the plant root zone feed off pollutants. "As a result, we are putting very clean water back in the ground," says Mark.

Clean Air Classrooms



Each classroom features floor-to-ceiling windows and a door to the outside. Students work at desks made from trees cut down to clear the space. The architects used plant-based linoleum on the floors and Benjamin Moore & Co.'s EcoSpec® paint on the walls.

"Indoor air quality was a big part of this building," says Mark. "EcoSpec® paint created an atmosphere that feels good. Its low VOCs [volatile organic compounds] create a healthy environment and don't contribute to lower level ozone."

Gretchen selected the interior walls' pastel color palette. The colors of nature inspired her choices. "The hallways are the acidic green of willow leaves in early spring," she says, "with robin's egg blue where the conference room and science center cut across the space."

Gretchen is especially pleased with the selection of Fresh Dew 435, which was used in most of the classrooms. "It looks like a different color based on the shape of the room and the changing light," she says.

Attention to air quality extends to the school's pre-existing buildings. The farmhouse serves as the administration building. "Color affects people's moods," says Gretchen, who chose yellow for the music and faculty rooms. "It's a happy color, and I wanted the faculty to feel harmonious working together."

The barn houses the school's physical plant systems to help reduce classroom noise and maintain healthy air quality. It includes the computer, telecommunications and radiant heat systems.

This attention to environmental concerns – from existing structures and new classrooms to the curriculum and the school property itself – teaches children that their actions have consequences now and in the future, maintain the Biedrons.

"Learning is about understanding patterns, connections and relationships," says Mark. "We're not training kids to join Greenpeace. We're equipping them to be successful and make decisions that are good for the whole."

Benjamin Moore® EcoSpec® Paint Colors Used at The Willow School

The Willow School joins 27 other facilities as a gold-certified building under the U.S. Green Building Council's (USGBC's) LEED® Green Building Rating System®.

USGBC awards credits for how well projects perform in the categories of sustainable sites, energy and atmosphere, water efficiency, indoor environmental quality, materials and resources, and innovation in design. Buildings receive four progressive levels of certification: certified, silver, gold or platinum. Although the Council does not identify LEED®-certified products, applicants receive indoor environmental quality credits for using low-emitting materials such as Benjamin Moore® EcoSpec® paint.

The color palette selected for The Willow School is:

- 526 Chameleon
- 435 Fresh Dew
- AC-22 Nantucket Fog
- HC-1 Castleton Mist
- 680 Opal Essence
- 918 White Rock
- 673 Iced Green
- HC-4 Hawthorne Yellow
- INTERIOR RM. Cameo White

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