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As green as can be

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As green as can be



Even well before it was built, the new visitor center at the George W. Mead Wildlife Area southwest of Mosinee had something special going on. The non-profit Friends of the Mead group at this popular hiking, bicycling, bird watching and hunting area sought to raise just \$125,000 for the strictly utilitarian facility. In the end they raised \$1.5 million and had a stunning, architecturally elegant structure built around a conservation ethos befitting “The Mead.”

When it comes to state-owned buildings, they simply don’t come any greener-built than this new education and visitor center. The 6,208-square-foot building will use no petroleum directly to provide heat. Though it’s far from the nearest natural gas line, the telltale propane tank out in back is absent. And though it’s also far from any moving water, its builders can still technically claim hydroelectric power as one of its six renewable energy sources.

The center will run primarily on wind and solar powered electricity, use solar-heated hot water and heat pumps that produce more energy than they consume in electricity, and get winter heat from a central masonry woodburner. The hydroelectric power is kind of an inside joke, says Stevens Point architect Tom Brown who specializes in green construction. You know those automated water faucets you find newer bathrooms? Those valves and sensors that know when someone’s hands are “asking” for water need electricity. At the Mead center, flowing water from the taps spins a tiny generator. That generator charges the small batteries that power the sensors.

If the building had turned out as first planned — that is, ordinary — visitors would have come for the nature first and to the building for secondary reasons. With this building, some visitors will be more interested in what’s inside rather than what’s outside.

The Mead is known for wildlife. Thanks to some vision and extraordinary fundraising, it also will be known as the future of energy-efficient construction.

“There’s no other state building like this,” says Brown, who designed it. “It might be the greenest state building ever.” It also will house offices for the wildlife area’s four, year-round employees, provide meeting rooms and space for visiting school groups and will showcase renewable energy systems. And after the higher initial costs are recovered, Brown predicts it will save money for Wisconsin taxpayers. He sees it as an example to state leaders as the right way to put up buildings that will be less expensive to maintain over decades of use.

The building has been five years in the making and has produced some surprises along the way. Perhaps the biggest surprise came when the Friends of the Mead support group set out to raise \$125,000 needed to add classroom space to a proposed \$611,000 utilitarian headquarters building the state planned to build. That building plan finally received funding after years of pushing from former State Sen. Kevin Shibilski, D-Stevens Point.

Instead of coming up with the \$125,000 in cash and in-kind donations, though, the Friends group kept going and raised \$1.5 million. Much of that came from a source that initially seemed like it wasn’t going to yield even a small donation. Brown made a pilgrimage to Wausau Homes, along with Kent Hall of Stevens Point, the lead fundraiser, and Tom Meier, who manages the wildlife area for the Department of Natural Resources. They left their meeting with the poker-faced company owner, Marv Schuette, thinking, “Nice try.” He

had listened politely, but gave no hint of enthusiasm.

The three men didn’t even bother to call Schuette back, but about two months later, Schuette called them and basically said, “Do you want the money or what?” He had not been idle. He talked with his wife, Ruth (nickname Rudie), and she went down to what’s usually just called “the Mead” to learn more about the property and facilities. Then Schuette asked people in his office and plant what they knew about the Mead and whether it is an important place for them. He got a strong signal that this area of 30,000 acres of mixed wetlands is indeed worth some attention.

The Schuettes and Wausau Homes originally planned to provide the entire building, minus all the specialized energy systems and wiring. The state had agreed to provide the building’s foundation. The state, though, balked over approving the foundation on what technically was only a promise from Wausau Homes. The Schuettes’ reaction to that was to go around the state and simply put in the foundation, too. The value of the building alone was put at \$750,000 and the foundation pushed the total to the \$1 million neighborhood.

Much of the Schuettes’ conviction that this was a worthwhile project stemmed from a visit Rudie made one day when a school group was visiting the Mead. The students were in an unheated machine shed sitting on carpet squares. How much better, she thought, if the students were comfortable in more of a classroom setting.

“We’re not going to change a generation that way,” she says. “We decided we’d do the building personally, but also on behalf of our employees and our customers.”

She’s a believer in the value of getting kids outdoors. “I grew up out in the woods, so my heart has always been there. It was on the Peshtigo River and I did a little hunting, fishing and trapping, like kids do.”

Rudie, who spoke at the dedication of the building last week, had to come up with a message for a hardwood plaque that tells visitors who the largest donors are. The etched words are “Each generation must care for the creation it is given. This is our turn.”

She says it means something different to her now. “I was thinking of my and Marv’s turn, but it really applies to all of us.”

Environmental educator Cindy Damrow says Rudie is a classic example of the values a person picks up from childhood experiences. Rudie’s time along the Peshtigo River made a lasting impression. Damrow, who is the director at the school forest in the D.C. Everest School District, says research shows that children who have positive outdoorsy experiences grow up to become adults who have more respect for the environment. “We see that in the great naturalists,” Damrow says.

It gets to be a practical matter, too, she says, of considering what a youngster will learn during a field trip. If the student is made to sit on a cold floor in a drafty, poorly lit shed, that might well become the lasting memory. If the same student is comfortable, the memory might be about the importance of sprawling wetlands to the reproduction of waterfowl like the splashy wood duck.

Or it would be OK with Brown if one of the lasting memories was of how the heat

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from a football-field-sized network of pipes buried 8 feet deep can be used to heat the floor of a building without any pollution. Maybe that young person would grow up to be an architect who, like Brown, says, "This is the dream for me. This is what I do. This is the perfect project. I've devoted myself to changing the way buildings are built."

Brown has been immersed in the project for five years and he's not done yet because of all the paperwork needed to get a rating on what is essentially a national honor roll of energy efficiency. He's a member of the Friends of the Mead, hooked, along with his wife, after coming out for a bike ride on the Mead's seven-mile loop. He got on a committee planning the building, but had to compete along with other state architects to get the job of designing it. He was happy to be chosen. "They wanted something special, something that would tread lightly on the environment and would educate people about sustainability."

To that end, one of the building's unusual features will be an electronic display panel that will show how much energy is being gained from the various systems. Last Friday, for example, the wind was blowing at nine mph — not much more than a breeze, but enough to generate 3,000 watts of electricity for the building. That's enough for 30 100-watt light bulbs. Any extra electricity is sold back to the electric utility.

Prominent in the building's lobby and display area is a massive masonry wood-burner/fireplace designed by the builders at Gimme Shelter. On cold days it can be fired up using wood from the property and the concrete and stone will both radiate heat directly and send heat out through pipes of the in-floor heating system.

The building's design provides for windows that are visible from 90% of the interior, so on a normal day, hardly any electricity is used for lighting. Windows at normal height provide the view and additional windows up near the ceiling provide more light. Soffits are painted an off-white so they'll reflect more light in through those high windows, especially in winter when there's snow on the ground.

Toilets in the women's restroom have two buttons atop the tank. One provides half a flush and the other provides a full flush, "for No. 1 and No. 2 basically," Brown says.

Interior roof beams of yellow pine are manufactured with boards from small trees laminated together. Fewer large trees had to die that way. Next to the restrooms is a mechanical room that will be part of most tours. It has eight heat pumps. Four are to provide hot water for washing and radiant floor heat. Four additional pumps heat water that is used in winter as a hot-air heating system and in summer as an air conditioner. Two conventional water heaters were required because of state codes, but Brown is hoping their only use will be as efficiently insulated storage tanks for water heated either by the solar system or the heat pumps.

Those pumps draw energy from the ground — warm compared to frigid winter temperatures and cool relative to hot sum-

mer days. That energy is drawn from a large area, so at a depth of 8 feet to the east of the building there are 32 pipes each 600 feet long, picking up the moderate underground temperature. In the winter, the water in those pipes is further heated for the hydronic floor system to 100 degrees, which heats the floor to 75 to 80 degrees. Expressed as a co-efficient of performance, the heat pumps return three to four times as much energy as it takes to run them. The very best natural gas furnace would have a co-efficient of performance of 0.9 compared to 3 or 4 for the heat pumps.

The main water heater in the mechanical room will rarely come on because of the solar panels. The second one will be on only when really hot water is needed for the dishwasher. Brown goes on about the building's features. An air-to-air heat exchanger brings in fresh air without cooling it off in winter. A complex computer-based system keeps track of and controls all the systems. Special tiles in entryways have spaces for drainage of melting snow. The two janitor rooms and a copier room have negative air pressure so fumes from cleaners and toners don't seep out into the occupied rooms. The whole building is oriented on an east-west axis for the greatest

passive solar heat gain. Even some of the materials are extra-green. Counter surfaces and tops of desks are made from Dakota Burl, a commercial product made from sunflower hulls held together with plastic resins. Furniture is refurbished from a specialized dealer.

Brown says Rudie had much to say about the building's interior. When selecting wood for the cabinets for example, she made sure the doors were of hickory, not something cheaper and less durable. "That's what I have in my house, so that's what I want in this building," she says.

Rudie took advantage of things that happened when she visited the Mead. One day they were banding ducks, something she had never done, so she asked if she could help. Another day they were securing a silt trap on an incline. Rudie grabbed a shovel.

Mead technician Brian Peters says the employees will have more overall office space and two rooms for meetings. He expects even more student groups. Last May 2,000 students visited. He likes the idea of those students being able to take in more than the single display case that's in the old office building. "We're still amazed. It wouldn't have happened without the donors. There were more than 200 donors."

As Brown looks back over the past years of work on the project, he says the quest to make the building something out of the ordinary was what made the task of fundraising easier for the group led by Kent Hall, who is also active in the Stevens Point chapter of the Audubon Society. Ironically, it might have been harder to raise less money for a ho-hum, conventional building. Like Schuettes, companies such as Wausau Tile, Kolbe and Kolbe and County Materials wanted to be part of the project. Each of the three donated about \$40,000 worth of, respectively, tile, windows and concrete.

"The vision was very clear and forward-thinking. The idea was captivating. We weren't asking for any old building. We wanted to build something special," Brown says.

The final challenge — and one the Friends of the Mead hope the building will help them with — is finding enough additional money to hire a full-time environmental educator. Existing staffers have plenty to do already, Brown says, and teachers like D.C. Everest's Damrow are now going to be even more inclined to bring classes there. They have already received an initial grant to look into what it would take to put together a curriculum and build up programs that would take advantage of the building as a learning tool.

Damrow sees the value. "What other chances are there for them to see such a vast wetland and see it up close?" Her district's school forest has a small wetland area, but the Mead is big-time. Visits there can teach them how to manage all aspects of a wild area that includes wetlands. ■



Architect Tom Brown of Stevens Point: "It might be the greenest state building ever."

Open house and info

Visitors to the George W. Mead Wildlife Area Saturday, Oct. 22, can learn about the new visitor center, the wildlife area and about who might have lived there prior to the arrival of the European settlers.

The open house at the Stanton W. Mead Education and Visitor Center will run from 10 am to 3 pm. Lunch will be sold on site. Scheduled programs are:

- 11:30 am — Features of building with emphasis on renewable energy.
- 12:00 — Talk by Mike Gross, a retired professor, on "People of the Little Eau Pleine River."
- 1:30 pm — Second tour showing features of building with emphasis on renewable energy.
- 2 pm — Mike Gross speaks again on early residents.

The Mead is located on the Little Eau Pleine River between Wausau and Stevens Point (about 30 miles from Wausau, 20 miles from Stevens Point). From Hwy. 51/39, take the CTH 34 exit at Knowlton and head south. At Dancy, go right on CTH C and head west all the way to CTH S, then drop due south and look for it on left.

Brian Peters, a technician at the Mead, says the George W. Mead Wildlife Area was named after the founder of Consolidated Papers in Wisconsin Rapids. When established in 1959, the property took in 20,000 acres donated by George W.'s son Stanton. That's why the new building is named the Stanton W. Mead Education and Visitor Center.