

New school could help set green standard

Brandywine planning on energy-efficient site

BY EDWARD L. KENNEY • THE NEWS JOURNAL • JUNE 21, 2009

Brandywine School District spends \$90,000 a year in wax and other materials to shine the floors in its schools.

It is one expense the district is scrutinizing as it begins to plan for the construction of Brandywood Elementary School, which could become a model for how other schools are built statewide in years to come.

Earlier this year, the Department of Natural Resources and Environmental Control awarded the district a \$950,000 grant to help make Brandywood a Leadership in Energy and Environmental Design, or LEED,

demonstration project. More recently, district officials have begun to plan what that money can buy to help make the school more energy efficient and environmentally friendly when it is built next spring -- including flooring that requires less upkeep.

At least 10 states require that their schools and government buildings receive LEED certification; that is, they receive the required amount of points awarded by the U.S. Green Building Council for each green material, energy-saving technology and environment-saving construction technique that goes into those buildings.

But Delaware is behind the curve when it comes to this kind of construction. Brandywood in Brandywine Hundred would become the state's first LEED-certified public school, and the hope is that there will be more to come, said Philip Cherry, director of policy and planning for DNREC, which teamed with the state's Department of Education to select the school because construction timing and other factors were ideal.

"Buildings use up 70 percent of electricity that is used and account for 40 percent of our greenhouse gas emissions," he said. "And so, to build a school that is smart about its energy use and smart in its construction not only saves money but reduces carbon emissions."

Cherry said research shows that construction that includes such factors as increased daylight in a school building and better air circulation also cuts down on absences and improves student performance.

John Read, Brandywine's construction project manager, also is keenly aware that each dollar the district can save on energy and other costs can go into the classroom.

"Economic times are tough, and if we don't build things efficiently, we're going to be paying for them forever," he said. "The purpose of this school grant is to be a model, to be a test case, that being green and doing the right things hopefully won't cost that much more. They're going to consider whether this is the path forward for future schools."

Because the plan all along was to combine Brandywood Elementary with the new Bush Early Childhood Center, the project is starting out green from the get-go, he said, meaning there will be two boilers instead of four, one parking lot instead of two, and so on.

On the flooring front, design of the \$18.5 million school also could feature rubber instead of vinyl tiles, an innovation that was incorporated in the district's recently renovated P.S. du Pont Elementary School and its soon-to-be-completed Lancashire Elementary School.

The move means no more heavy lifting of furniture to clear the way to strip, wax and buff, Read said. Just mild soap and water should do the trick.

The tiles will not be as shiny -- but they should last a lot longer, as evidenced by the 20-year warranty alongside just 12 months for vinyl tiles.

Although the rubber tiles are three times more expensive, the idea is that they should more than pay for themselves over the long haul.



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John Read, construction project manager for Brandywine School District, walks among the solar panels on the roof of the newly renovated P.S. du Pont Elementary School. The district is considering them for Brandywood Elementary.

Tim Skibicki, an architect and senior project manager with Tetra Tech, which is working on Brandywood and has helped design six LEED-certified schools in other parts of the country, said the school also could include a roof with solar panels like those installed at P.S. du Pont Elementary, or it could include a vegetative roof to reduce heating costs and extend the life of the roof.

The building also could include an energy-recovery system, like the one at P.S. du Pont Elementary, which takes the air that has been heated or cooled and reuses it, said Robert Jordan, project manager with Furlow Associates, the mechanical, electrical and plumbing engineering firm working on Brandywood.

There are certain things contractors know they will have to do during construction to receive certification points.

For instance, materials must be bought from local suppliers to cut down on the cost of gasoline to transport them, Read said, and workers will reduce debris pollution and recycle as many materials as possible to keep them out of landfills.

Other energy-saving factors include proposals to:

- Make parking areas light colored or shaded to reduce the heat.
- Use rainwater or "gray water" from washing machines and dishwashers to flush toilets.
- Designate better parking spaces for staff members who have green cars with low-emission standards.
- Provide bike racks and include showers for staff members who bike to work.
- Landscape a certain amount of naturally growing meadows to cut down on suburban-type grass cutting.
- Install occupancy sensors that pick up heat through infrared technology, shutting lights off when everyone has left the room.
- Focus outdoor lighting so it does not pollute neighboring areas or the night sky above the school.

Read is banking on spending a little more now to save a lot more taxpayer cash in the future, and he has seen the concept work elsewhere.

For instance, P.S. du Pont Elementary, which will become a middle school in the fall, has cut the amount of gas it uses for heating by 50 percent, he said.

The plan calls for the design to be in place by fall.

Once the school is built by July 2011, a new round of work will begin.

"This is a long-term project where we are going to compare the operating costs over a five- or 10-year period with the operating costs of similar buildings," said John Marinucci, the education department's director of finance, who has been working with Cherry to help make the project possible.

"We're doing everything we can to understand how to build energy-efficient schools, and this is one of the steps we're taking," he said.