

## DOWA Architects take sustainability to school

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John Weekes of DOWA Architects

**Valley View Middle School** in Snohomish, Wash., could become one of the first public schools to meet the **Living Building Challenge**.

The **Snohomish School District** wants to replace the existing middle school with one that can meet the stringent energy, water and building materials guidelines of the Living Building Challenge. But before the design process can move forward, the school district must prove to its board of directors that the plan makes sense economically as well as environmentally.

"We are currently studying whether we're going to do it or not," said **Heery International's** Ralph Rohwer, project director and spokesman for the school district. "There are a whole set of analyses going on for utilities, what they cost and what the savings are. We're doing a presentation later this month and then the school board will decide if there's a return on investment."

The project, expected to cost between \$55 million and \$57 million, will include demolishing an existing, outdated school and then building a new, sustainable one. It's being designed by **DOWA Architects** of Portland and **Dykeman** of Everett, Wash. Funding for the replacement comes from a bond passed by voters in 2008, as well as matching state funds.

"The school district adopted a goal to pursue the highest level of sustainability achievable," DOWA principal John Weekes said. "There's a need to balance that goal against the money they have to spend on long-term life-cycle costs, as well as the skills the school district needs to operate the building."

If pursuing the Living Building Challenge for Valley View doesn't pan out financially, the school district won't seek out an alternate rating system, like **Leadership in Energy and Environmental Design**, for the project.

"LEED has a ton of paperwork, and the district is more interested in practical things that provide energy savings," Rowher said. "The building will still use things like geothermal systems, thicker insulation for the walls and roof, and triple-pane windows. We're looking at what makes the best sense to save energy, reduce operational costs, and increase the life of the building. Everything else will follow that."

To meet the Living Building Challenge, a building must achieve **net-zero** energy usage and water usage by fulfilling all of a structure's energy and water needs on-site.

According to the **Alliance to Save Energy**, schools often pay more for their energy use than they pay for textbooks and computers combined due to inefficient systems and a lack of energy conservation training for school staff. Weekes feels that meeting energy requirements while keeping costs down will be the largest hurdle for the design team to clear.

"A school is like a small city," said Weekes. "There are a whole variety of functions. Some run efficiently and some are not easily adaptable to net-zero. You can only design the building to a

certain benchmark in terms of efficiency, and then you have to make it up with active systems.”

Another issue is human behavior. Weekes says that up to 30 percent of energy consumption is based on how occupants use a building. Even if the school were designed to meet net-zero, it would be up to students and school staff to keep the building operating at maximum efficiency.

“That’s always a wild card,” said Weekes. “You’ve got 900 students and 60 or 70 staff members. Somewhere, someone won’t do something they should have. A light will be left on; things will be left plugged in. You can’t get to net-zero without retraining the occupants of a building so that they will use and operate it effectively.”

“The school’s staff and district representatives have been involved in the process along the way,” Rowher said. “We are holding practice meetings to evaluate maintenance and operations costs to see if we can take this on. I’m sure the school is intending to do something to involve kids in this process.”

Design development for the project will be completed in November. By that time, the school district and its architects will have a better idea of whether to pursue the Living Building Challenge, Rowher said.

“It’s been an ongoing process of identification and seeing if these are strategies the district wants to pursue,” Weekes said. “It doesn’t matter what you’re designing, be it a Living Building or anything else. There’s always the possibility you won’t achieve all that is possible.”

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