

# Balancing the budget.

Many schools are having to do more and more, on less and less. Overall budgets are dropping in some areas, even though attendance and needs are increasing. As a result, school boards are looking at alternate ways of reducing costs – and many are starting to consider renewable energy sources.

When École du Tournant (Saint-Constant, Québec) was being designed, the school board's director of the technical services was approaching retirement. As his legacy, he wanted to create a “green” school that would use renewable energy sources wisely, helping the environment while helping to balance the budget. Completed in 2002, this alternative type school (28,000 ft<sup>2</sup>) has won numerous awards, including an AHSRAE award for ecological excellence. By combining solar panels, a geothermal system, heat collectors and intelligent lighting, this model building consumes only one-quarter the energy of a conventional school, without releasing greenhouse gases into the atmosphere.

Laurier Nichols, lead consultant from Dessau Soprin, the engineering and consulting firm that produced the mechanical design for this school, says, “One of the major constraints, as is the case with most schools, was the standard budget for construction. So, they didn't want too many fancy features, whether PV or wind power, or anything else, because it would have been too expensive and the costs would not have justified their use – the payback wouldn't have been great enough to include them. Some of the energy savings devices also required architectural features (chimneys, etc.) to make the other technologies work. Nothing special was needed with



*SolarWall®. We just got the energy and cost savings. The SolarWall system results in 40,000 - 50,000 kWh savings per year. And this project is repeatable – you could do the same project with respect to standard budget for any school.”*

## “Boat” look banished, books bought and gym heated for free.

In British Columbia, the Coquitlam School Board's decision to choose SolarWall had as much to do with aesthetics as it did with savings. Jim Domina, Manager of Projects explains, “The area is more prone to major earthquakes than others, so we had to do a seismic upgrade to the high school gymnasium. At the same time we built a new gym. We put a fiberglass wrap on the entire building. When it was first put on the brick, the school looked like the inside of a boat. It looked awful. The wrap had to be protected from UV rays, so I got the idea to put metal paneling on it. Then someone told me about SolarWall. I checked it out and saw that it made sense and that it would look the same as regular metal panels. So now I use the SolarWall [system] to preheat

*the intake air which heats the new gym. It's great; we've added a great big double gym, but our energy costs have remained the same!”*

Other schools share similar cost savings stories, but for many educators and school trustees, the best thing about saving money on energy costs is that it frees up funds for other, “more interesting” educational purchases – or to help them keep on extra teachers.

## Support for Solar Schools.

The commitment to create solar-fueled schools is gaining strength and in many places around the world there are grants and rebate programs to help offset the cost of incorporating SolarWall panels into a new or retrofit design. For schools taking advantage of these programs, the savings can start even sooner.

## Staying awake in school.

Teachers already know that kids aren't always alert and attentive in class – and as the 3:30 bell gets closer

and closer, the squirming, chatting and daydreaming can reach unbearable levels. In many schools, there's a very good reason for this – one that has nothing to do with the caliber of classroom content.

When air flow and ventilation fall below optimal levels, it can lead to drowsiness, inattention – and that's not just on the part of the students! Schools need to have 15 cfm (25 m<sup>3</sup>/h) of air flow per student, which means that fresh air must be let in continuously. For gymnasiums and auditoriums, this can mean a lot of fresh outside air. In colder climates, this can cause heating bills to rise substantially. SolarWall can help – substantially.

The SolarWall heater system lets in more fresh air than just about anything other than an open window – but unlike the window, it pre-heats the air, using free energy from the sun, before it reaches the ventilation system. Schools get good, fresh air flow at low cost – and students stay alert! Says one Grade 10 teacher, *“Over the years I've had a lot of teenage boys in my classes, and I can always tell when the air is stale. Tempers flare, concentration disappears and the whole atmosphere of the class is affected... when you fix the air, you fix the rest of the problems. It's amazing how a little fresh air can cure a fresh mouth!”*



## Hands-on learning.

When an operational solar heating system such as the SolarWall is installed in a school, it gives students a hands-on way to see how energy use can be reduced, and gives teachers a great tool to use for covering several curriculum components. For instance, in Minneapolis, Minnesota, the downtown multicultural learning center which serves the nine Minnesota school districts constituting the West Metro Education Program (WMEP), 2,115 ft<sup>2</sup> (200 m<sup>2</sup>) of SolarWall paneling were installed to cost effectively improve ventilation; today the SolarWall panels are being used as part of the school's Solar Education Program.

At Weledeh Catholic School in Yellowknife, Northwest Territories, students learn that their solar air heater reduces greenhouse gas emissions by 26 tons each year and talk about the impact this will have on the environment.

The school's principal adds, *“Knowing that we're doing something like that is important. Teachers use it in their energy units. When the kids go outside and look at the SolarWall, they're surprised that something as plain and simple as that can do what it does. The students that know it's there are proud of it.”*

## Why wouldn't you?!

In short, choosing to install a SolarWall heating system sets a great example for students and provides a unique teaching tool while helping to create a healthier and more energy-filled environment. When you add in lowering energy costs and helping to stretch ever-tightening budgets, it's clear that installing a SolarWall system makes sense on so many fronts. Or, in the words of one advocate, *“Why wouldn't you do it?!”*

For more information on how to incorporate a SolarWall system into your new school design or retrofit construction plans, please call us or visit our website.



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