

## Healthy, High- Performance, Green Schools

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### Why are we here?

It is essential that we design, build, renovate, operate, and maintain healthy, high-performance, green schools to:

**1.help increase the academic success of our youth** by providing the best possible learning environment, and

**1.use our schools as teaching tools** so that students understand the energy strategies and renewable energy technologies in their school buildings.

**“Just the facts, ma’am.”** — *Sgt. Joe Friday*

- Today there are more than 134,000 public and private schools in the U.S.
- There are 55 million students and 5 million faculty in our K-12 schools.
- One-fifth of the nation's population spends their day in school buildings.
- Average school is 43 years old.
- Asthma accounts for almost 20% of absences.
- The average cost per student for energy is \$155 per year (doesn't include water, sewer, or trash). The range is from about \$90 to more than \$300.



### **Healthy, High-Performance, Green Schools:**

- Maximize energy efficiency and comfort.
- Have a positive influence on student health and academic achievement.
- Are safe, have comfortable and healthy environments, and are structurally sound and resource-efficient.
- The investment is worth it. **Over the life of a school building, taxpayers pay 10 times the cost of construction in operation and maintenance.**



**Energy-efficient improvements can cut school utility bills by up to 25%.**

- These potential savings in K-12 school buildings in the U.S. could fund up to 35,000 new teachers, or buy 40 million new textbooks.
- As energy costs continue to increase, the savings become even more significant.



**High energy costs are not fixed.**

- Many U.S. school districts, large and small, have lowered energy costs by 5 to 20 percent or even more through improved operations and maintenance and other behavioral changes.
- Energy costs are a school district's second-highest expenditure after personnel, but these expenses can be controlled.



**Little things add up.**

- The cost to run a soft drink machine is up to \$300/year.
- One leaking faucet at 20 drips per minute costs \$3.15/year.
- Waterless urinals can reduce water/sewer/maintenance costs by approximately \$450 annually.
- The cost to run a computer 24 hours a day is one to three cents per hour.
- A copy machine left on all day and night costs more than \$150 a year.

**Use schools as “Teaching Tools”.**

- Studies of schools repeatedly find that the administrators, teachers and staff need more knowledge of the proper use of the energy-efficiency features and strategies in the building (e.g., when to use blinds, which lights to turn on, what equipment to unplug).

### It's easy to get smarter about energy.

- **Behavioral changes can greatly affect energy use.** Turn off one computer at night on weekends and save more than \$30 annually
- **Operations and Maintenance Improvements provide substantial savings at little cost.** A school district in Idaho saves \$20,000 annually by turning down thermostats over winter holiday breaks
- **Building renovations or retrofits offer huge savings potential.** A geothermal heating and cooling system in a Tennessee high school saves \$82,000 annually



### Compare the lighting in these side-by-side classrooms.



### Bluffsview Elementary School in Worthington, Ohio

- A 2-kW photovoltaic system was installed.
- Ohio Proficiency Test scores improved
  - Math scores grade 6: 13% increase
  - Math scores grade 4: 25% increase



### Powersmiths' Windows on the World



**Our job is to:**

- Incorporate the technologies into the curriculum.
- Raise awareness of the benefits of operating the school correctly.
- Share information with staff and parents.



**We need to take a holistic approach**

- The concepts of energy efficiency, renewable energy, and the wise use of energy can have the same impact that was achieved by educational efforts on recycling or the use of car seat belts.



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**Is this the right time to make America's schools healthy, high-performing, and energy efficient AND to educate our future leaders and decision makers?**

"The time is always right  
to do the right thing."

*Martin Luther King, Jr.*

