

## Using Energy Benchmarking to Reap Cost Savings:

- Benchmarking is helping some school districts reduce energy consumption, thereby gaining energy savings. It may be just the tool your district needs.
- Savings from \$2.04 per square foot in 2005 to \$1.31 in 2014.
- Reduced sound levels in classrooms to NC 30 or quieter.
- One school specifically, Falmouth Elementary, is saving \$70,000 on energy costs with the VRF technology.
- “This is impressive when you think that we increased the building area by 20% or 13,000 square feet.”
- Building ventilation was increased by more than 200% to comply with the current ventilation code as well.

## Stafford County Public Schools

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For full article by Ellen Kollie [www.webSPM.com](http://www.webSPM.com)

Administrators at Stafford County Public Schools (SCPS) in Virginia, who educate approximately 27,000 students, are also benchmarking. “We are tracking our energy consumption with the idea to reduce it through time through a variety of different tools,” says Scott Horan, assistant superintendent for Operations. “We know where we started about 10 years ago from an energy consumption point of view in all our schools.”

The district has entered into two energy performance contracts that address energy control measures, such as installing occupancy sensors, changing lights, reducing water usage and installing variable frequency drives. Also, in the last 10 years, as roofs have been replaced, they’ve been replaced with reflective roof coatings to reduce heat load. “That’s one reason we’ve seen energy consumption cost per square foot come down,” Horan confirms.

Another tool the district has recently used is installing Variable Refrigerant Flow (VRF) zoning (HVAC systems) when renovating their concrete/cinder block schools. The VRF technology has proven ideal in buildings unable to accommodate ductwork because of tongue and groove, pre-stressed precast concrete construction.

“With the VRF zoning system, we were able to keep the original ceiling and planned suspended ceiling heights, improve lighting levels, reduce sound levels in classrooms to NC 30 (Noise Criterion) or quieter, and improve student comfort,” says Bruce E. Beddow, PE, CEM, president of b2E Consulting Engineers in Leesburg, Va.

One school specifically, Falmouth Elementary, is saving \$70,000 on energy costs with the VRF technology. For a utility bill comparison, Horan estimates a 25- 30-percent average reduction in energy use. “This is impressive when you think that we increased the building area by about 20 percent or 13,000 square feet,” he observes.

In addition, administrators are retro commissioning older schools, tackling one per year in the last six years. “This involves looking at the original design and seeing if the equipment is performing as designed,” says Horan, “as well as what we’ve done to it through the years to throw it out of performance and correcting it.”

The results are there. “We have gone from spending \$2.04 per square foot for energy in 2005 to \$1.31 in 2014,” says Horan, “and that includes adding six new schools in that time.”

Are you ready to start benchmarking to determine the energy saving potential of your school system? Start with the Energy Star Website and use the Target Finder tool to compare building performance. Beddow recommends using a certified energy manager to calculate an energy utilization index so yearly comparisons can be made. With that knowledge, “You’ll get an idea of how your buildings are performing and be in a position to make upgrades in a way that will make a big difference,” he says.

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