

Rebuild America EnergySmart Schools Success Stories highlight schools and school districts that are making smart choices about energy, reducing energy and raising awareness of energy issues.

- New Building Design
- Existing Building Improvement
- Operations and Maintenance
- Renewable Energy Technologies
- Financing Building Improvements
- Energy Education



## Wake County Public School System

### *Saving on Energy, Educating Children in North Carolina*

The Wake County Public School System (WCPSS) in North Carolina is saving more money each year as it retrofits buildings with energy-efficiency equipment and promotes energy-saving behavior by students.

#### The Challenge

The Wake County Public School System, in the Raleigh area, has 125 schools and a capital budget of \$160 million per year. It has been growing rapidly as North Carolina's Triangle region booms. WCPSS expects to complete the construction of 14 new schools and the renovation of 96 existing schools during 2000-2004. Annual energy costs for the system were topping \$10 million in the mid-1990s. That level of expense combined with so much growth created the prospect of increasingly burdensome energy costs.

#### The Solution

The school system decided on a program of extensive retrofits and renovations, new design guidelines, use of renewable energy and, for employees and students, widespread energy education and behavior modification. The energy education and behavior modification program, EnergySavers, started July 1, 1996, and has received national recognition.

For existing buildings, some dating to the 1950s, the full array of energy-saving improvements has been introduced through replacements and upgrades for heating and air conditioning, mechanical systems, lighting and other technologies. As an example, all schools have either replaced their T-12 fluorescent lights with T-8s or are moving toward doing so. More use is made of daylighting, with the help of light shelves added to windows and roof monitors. An exclusive beverage vending contract with Pepsi involved delamping the machines in the teacher lounges and installing VendingMiser power-reduction technology in every Pepsi machine.

Recent restorations at two elementary schools and one middle school were so extensive that only the facades were saved, which meant that the introduced energy-saving technologies could go as far as new insulation in the walls.

For new schools, all design guidelines incorporate energy efficiency. The school system's design guidelines include high-performance guidelines based on the LEED™ (Leadership in Energy and Environmental Design) Green Building Rating System, but

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# Partnership Facts:

**Name of Partnership:**

Wake County Public School System

**Targeted Buildings:**

K-12 school buildings

**Space Improved/Completed:**

14.8 million square feet

**Wake County Public School System:**

Number of schools: 125

Enrollment: 105,000 students

Energy costs prior to projects:

\$10 million per year

Annual Energy Savings: \$1.4 million

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For more information about energy-saving technologies, visit the Business Partners section of the Rebuild America Web site: [www.rebuild.gov](http://www.rebuild.gov) or contact Rebuild America at: 252-459-4664.

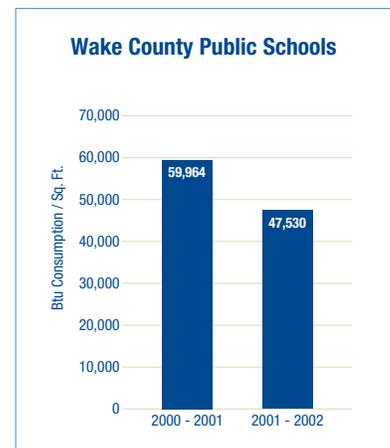
they are custom-tailored to the Triangle region of North Carolina. The high-performance guidelines can be downloaded from the Triangle "J" Council of Governments' Web site at [www.tjcog.dst.nc.us](http://www.tjcog.dst.nc.us).

The school system has been able to keep its energy costs at 88 cents per square foot on average for five years in a row, despite the surges in fuel prices - especially natural gas - in recent years.

Behavior modification and operational changes, like technology, are integral to saving energy. Students in Wake County schools participate in EnergySavers, an ongoing partnership with the NEED (National Energy Education Development) Project, a Rebuild America Strategic Partner. The students not only learn in the classroom but take part in "energy patrols" to identify and minimize energy waste in the schools

The Wake County Public School System became a Rebuild America partnership in October 2002. The 240 staff members in WCPSS' facilities and maintenance departments have benefitted from the use of the Energy Design Guidelines for High Performance Schools, produced by the U.S. Department of Energy.

Quantifiable results of the Wake County efforts include savings on energy costs of \$1.4 million annually, and a reduction in energy consumption per square foot of 21 percent, to 47,530 Btu/sq. ft. from 59,964 Btu/sq. ft.



To learn more visit: [www.eere.energy.gov](http://www.eere.energy.gov)

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