

Duplin County's Schools and Communities Continue to Thrive Thanks to Performance Contracting

Challenge

Duplin County is located in the Coastal Plain region of eastern North Carolina. The County enjoys a friendly, rural environment as well as ready access to the beaches of the Atlantic and some of North Carolina's major cities. Residents there are proud of many things about their community, and they are especially proud of their outstanding Duplin County Schools (DCS).

True to the community-centered focus in Duplin County, the school system's mission is to "work collaboratively with the community to prepare all students for career, college, and life success." DCS carries out its mission at 13 schools including eight elementary/middle schools, one junior/senior high school, three traditional high schools, and one early college high school.

The schools and administration buildings in the DCS system range in age from 17 to 65 years. In 2011, the administration began compiling a list of repairs and upgrades

*Total
Projected
Savings:
Over
\$6.1 million*



needed throughout their DCS system. The administration was able to build a prioritized list of needs with the help of the facility manager at each building. The list included major overhauls of numerous HVAC and other mechanical systems that were failing to provide the indoor environment needed for students to best learn. Energy-inefficient equipment was also widespread, resulting in unnecessarily high operational costs.

The DCS administration wanted to make the needed improvements but, as with many other school systems, declining state and local revenues was the biggest barrier to making it happen. The administration knew they needed to find a creative solution to fund the work.

Solution

DCS used the State's procurement process to solicit proposals from pre-qualified firms. The project was awarded to Brady based on their technical expertise and their experience successfully helping other school systems complete needed upgrades cost-effectively. Brady recommended Performance Contracting as a way for DCS to self-fund the needed upgrades. Brady thoroughly explained to the administration how such a guaranteed energy savings approach would provide enough savings in operating costs to cover the cost of the project.

Brady worked closely with the DPS Director of Facilities and building managers to design the best system and select the appropriate components for each specific building. The guaranteed energy savings project will provide \$6,462,452 in savings over the first 15 years of operation,

which well exceeds the project cost of \$4,620,641.

The construction work kicked off in late 2012 and included the following high-efficiency upgrades:

- Installation of high-efficiency lighting systems and controls
- Installation of power-level controls on all computers
- Weatherization of roofs, walls, and doors.
- Installation of direct digital control (DDC) systems
- Upgrading of plumbing systems with water-conserving components
- Delamping of vending machines to conserve energy
- Replacement of HVAC systems and controls at East Duplin High School
- Installation of new water-source heat pumps at Kenansville Elementary School

As the work proceeded at each building, Brady worked with the maintenance manager to fine-tune the upgrades to perfectly fit the needs of that building. The project installation was completed in October 2013. The project upgrades are now providing state-of-the-art HVAC and mechanical systems, building control systems, and energy savings to 1,211,058 square feet of building space in the Duplin County Schools system.

Results

The project's first operational year was



2013–2014. Since then, the students and teachers have been enjoying a consistently comfortable indoor environment in terms of both temperature and lighting. Noise levels from the mechanical equipment have also been reduced, adding to the better classroom environment.

The project guaranteed an energy savings of \$1,493,330 over operational Years 1–4. At the conclusion of Year 4, the actual energy savings was verified to be \$1,640,102. Add to that the \$70,611 of savings in O&M time and costs, and total Years 1–4 savings has been \$1,710,713—15% higher than anticipated. Based on the savings realized in Years 1–4, the projected total savings for the 15-year contract period is more than \$6.1 million. This will easily cover the project installation cost of \$4.6 million while also helping Duplin County Schools to cover project financing fees.

The environmental stewardship outlook of these savings is equally impressive:

- Electricity: 12,946,136 kWh
- Water: 14,879,373 gallons
- Fuel oil: 115,143 gallons

Brady—helping communities thrive!

