

The York County School Division energy management team uses an aggressive two-pronged approach to reduce pollution and decrease energy waste. First, we began by implementing energy-saving and sustainable building design strategies and practices such as installing geothermal heating and cooling systems, heat wheel energy recovery systems, and occupancy sensors for classroom lighting. Second, a plan was instituted to educate employees, students and the community by promoting environmental initiatives such as Earth Day and the Energy Star's *Change-a-Light* campaign. Since 2004, the school division has reduced its energy consumption by more than 48,000 MMBTU's resulting in over \$1,000,000 in total savings. Average annual savings are 12,000 MMBTU/year and our banner year was FY07, in which we reduced our energy consumption by 17,000 MMBTU's. The energy intensity for the School Division's geothermal buildings in 2007 ranged between 27.8 and 37.4 kBtu/sqft.

Geothermal Heating and Cooling - In September, 2000, the York County School Division completed its first geothermal school renovation. The subsequent energy savings achieved prompted similar renovations throughout the School Division. Today, one third of the school buildings in the Division have been converted to geothermal heating and cooling systems. These renovations have reduced site energy consumption by up to 40%.

Direct Digital Building Automation System - The Division uses an enhanced building automation system (BAS) that is installed in all of the division's buildings. This system incorporates a wide array of software tools to manage building and equipment operation and reduce energy consumption which include:

- Setting back temperatures and shutting down equipment during unoccupied hours
- Controlling peak electrical demand through optimized start/stop and load shedding
- Room by room automated facilities scheduling
- Permanently installed monitoring equipment to ensure proper indoor air quality

Lighting Upgrades - The York County School Division has upgraded light fixtures in every classroom, office and hallway from T12 fluorescent to T8 fluorescent, reducing lighting costs by nearly 40%. In the past year, seven of our school gymnasiums and two cafeterias received lighting upgrades from HID fixtures to more efficient high-bay T5 fixtures.

Energy Recovery Units - The School Division uses heat wheel style energy recovery units. These units cut building electrical consumption by drastically reducing the amount of energy needed to condition fresh air entering the building.

Occupancy sensors - Most classroom, office, cafeteria and gymnasium lights are controlled by occupancy sensors which save energy by automatically turning off lights when the areas are unoccupied. In many schools the sensors also shift heating & cooling setpoints.

Energy Management Team - The York County School Division employs a three-person energy management team covering all facets of our energy conservation program.

- The *Supervisor of Resource and Security Control* is a Certified Energy Manger (CEM), a Certified Building Commissioning Professional (CBCP), and a member of the Association of Energy Engineers. His duties include:
 - Directing engineers in the design of HVAC systems, building automation systems and lighting in new construction and renovations
 - Overseeing the installation and programming of the building automation system
- *Building Automation and Security Analyst*
 - Installs, programs and monitors the building automation system (BAS)
 - Develops control strategies to achieve the most efficient operation of equipment
- *Energy Educator*
 - Monitors all school division utility bills and tracks consumption using Energy Star's Portfolio Manager and Energy Cap software
 - Performs regular daytime, nighttime and holiday energy audits of all buildings
 - Educates school faculty and staff on good energy conservation practices