



Using ENERGY STAR for Effective Energy Management

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Loudoun County Public Schools
The Governor's Conference on Energy
Richmond, VA – October 14th, 2010



Guidelines for Energy Management:

- The guidelines reinforce the current activity in each area of our program.
- Provide LCPS with a focus on the process of energy management.



Portfolio Manager:

- LCPS started utilizing this tool in the spring of 2008
- Currently has data for all LCPS facilities and a history of energy use going back to 1993.



[Home](#) > My Portfolio

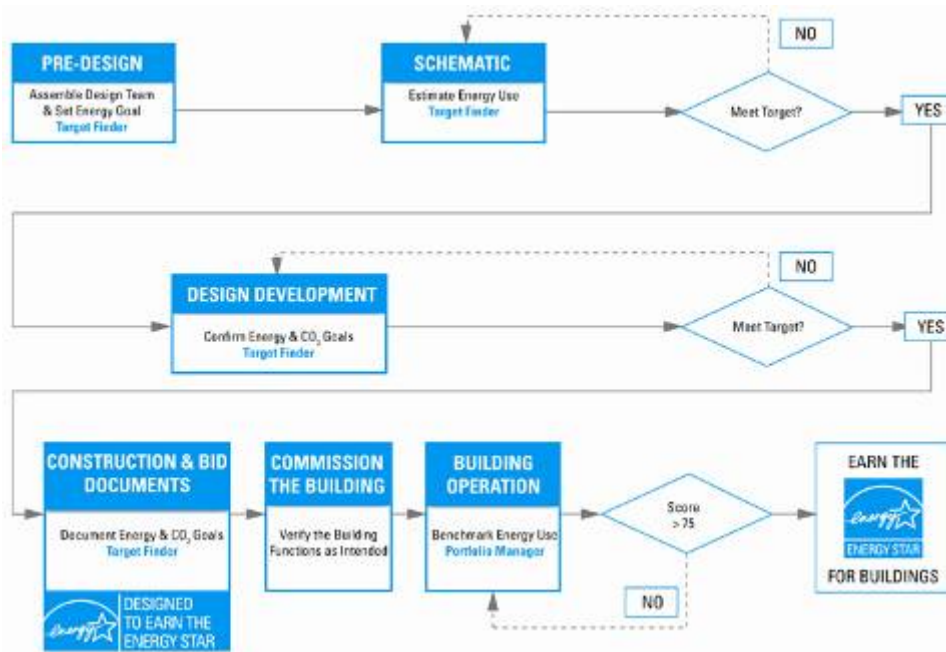
Portfolio Averages	
Baseline Rating: 56 Facilities Included: 80	Current Rating: 73 Facilities Included: 80
Change from Baseline: Portfolio Adjusted Percent Energy Use (%): -11.3% Facilities Included: 83	
Averages are weighted by Total Floor Space. More about Baselines More about Change from Baseline: Adjusted Energy Use	

ENERGY STAR Label:

- LCPS has 37 buildings that have earned the ENERGY STAR Label.
- The ENERGY STAR Label is a powerful tool to inspire building administrators.




New Building Design Guidance:



- The processes outlined in the New Building Design Guidance are utilized by LCPS.
- The inclusion of energy consumption and efficiency as a part of building designs is an integral part of ensuring that new buildings are constructed in accordance with School Board Policy 6-41.





Target Finder:

- Current prototypes are undergoing significant changes.
- Each of the prototype school plans will go through the Target Finder process as part of their evolution.



TARGET FINDER

Return to ENERGY STAR Web site > Target Energy Performance Results

 PRINT
  FREQUENTLY ASKED QUESTIONS
  CONTACT US
  HELP

Target Energy Performance Results

The design **achieved** a rating of 75 or higher.

NOTE: Values are 100% electricity and 0% other energy source. The Target & Top 10% energy use for this facility are calculated based on fuel mix of input estimated energy use.

Target Energy Performance Results (estimated)			
Energy	Design	Target	Top 10%
Energy Performance Rating (1-100)	84	90	90
Energy Reduction (%)	31	39	39
Source Energy Use Intensity (kBtu/Sq. Ft./yr)	115.1	100.9	100.9
Site Energy Use Intensity (kBtu/Sq. Ft./yr)	34.4	30.2	30.2
Total Annual Source Energy (kBtu)	20,625,309.3	18,080,856.2	18,080,856.2
Total Annual Site Energy (kBtu)	6,175,242.3	5,413,430.0	5,413,430.0
Total Annual Energy Cost (\$)	\$ 123,975	\$ 108,681	\$ 108,681
Pollution Emissions			
CO2 Emissions (tons/year)	1,040.2	912.0	912.0
CO2 Emissions Reduction (%)	31%	39%	39%

Facility Information Edit

LCMS Prototype
 South Riding, VA 20152
 United States

Facility Characteristics Edit		Estimated Design Energy Edit			
Space Type	Gross Floor Area (Sq. Ft.)	Energy Source	Units	Estimated Total Annual Energy Use	Energy Rate (\$/Unit)
Parking*		Electricity	kWh	1,809,860	\$ 0.069/kWh
K-12 School	179,270	Source: Data adapted from DOE-EIA. See EPA Technical Description.			
Total Gross Floor Area	179,270				

* not included in total

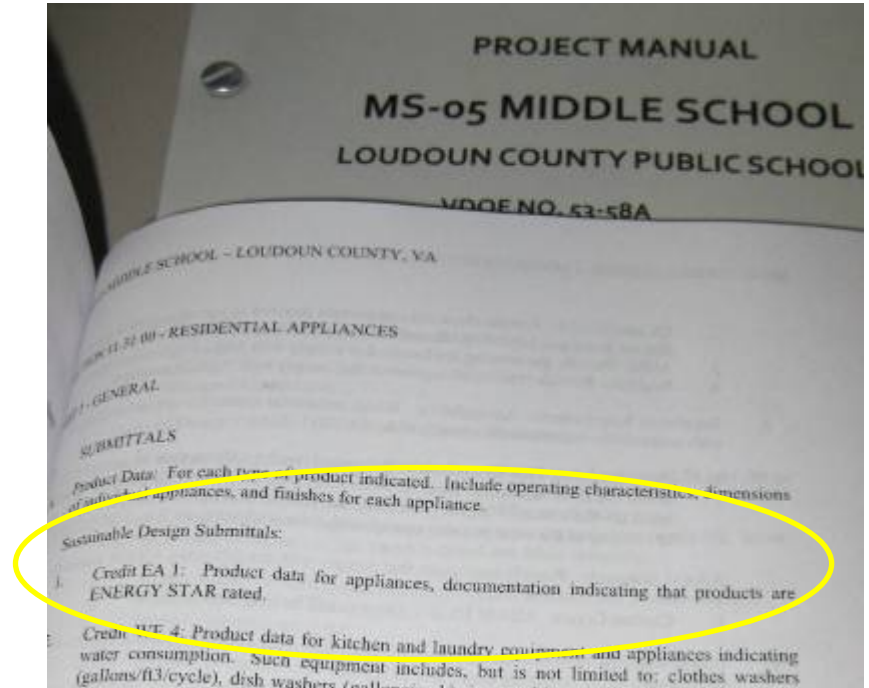
Designed to Earn the ENERGY STAR:

- All new LCPS prototype plans will be required to meet the Designed to Earn the ENERGY STAR Standard.



ENERGY STAR Qualified Products and Procurement:

- LCPS currently has a practice of purchasing ENERGY STAR appliances whenever they can fulfill the program requirement for that application.
- This is currently listed in design specifications.




ENERGY STAR Online Training:


- LCPS participated in the ENERGY STAR procurement, Target Finder, and Partner of the Year application online webinars.


Network Recording Player - Recognizing Success: Expanding your Energy Management Program with ENERGY STAR

Meeting Number: 713.253.471 | Date: Tuesday, March 30, 2010 | Time: 2:02 PM, Local Time (GMT -05:00)



Established in 1870

ENERGY STAR PROGRAM
Implementation in
Loudoun County Public Schools
March 30th, 2010

 Energy Education™
Empowering Your Vision.

 ENERGY STAR
AWARD
2010
PARTNER OF THE YEAR

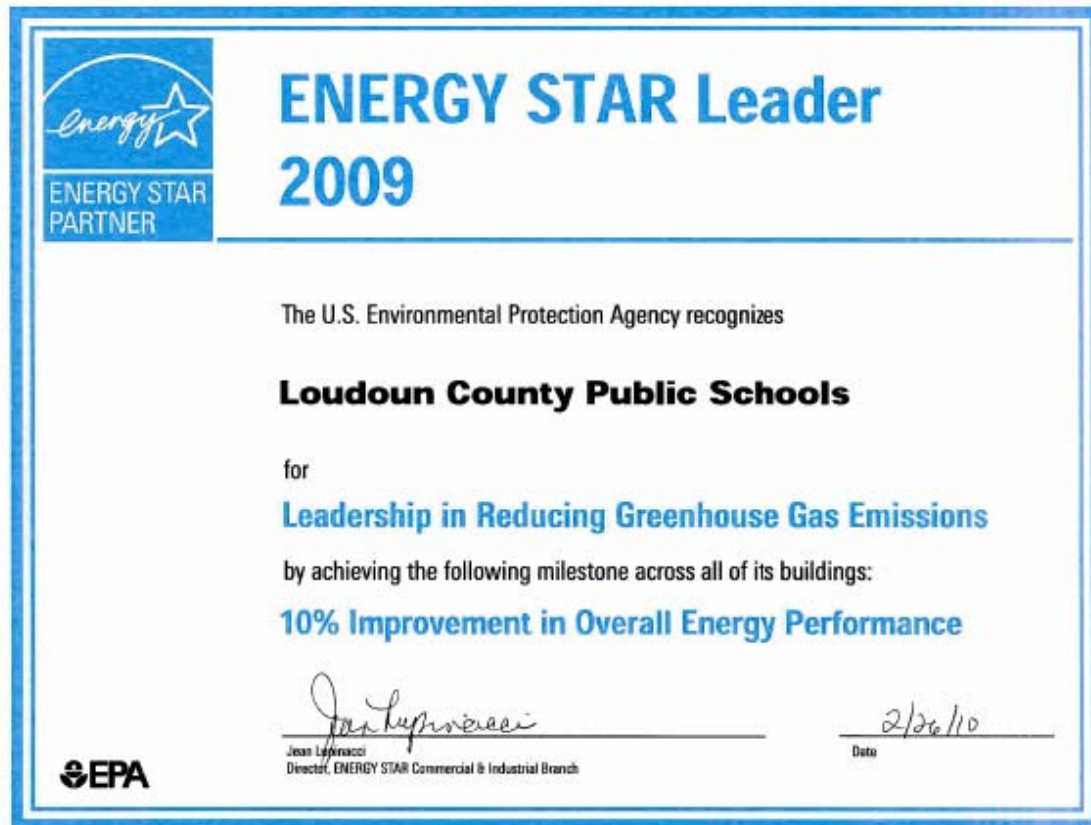
Michael Barancewicz & John Lord
The Loudoun County Public Schools
Energy Education Team



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ENERGY STAR Leaders:

- The ability to track year-to-year progress in the leaders account has been motivational and has inspired the school system to strive for even greater future gains.




Building Profiles & Leaders' Stories:

- Building profiles & stories for ENERGY STAR labeled facilities allow LCPS to consider approaches taken by other schools systems.

The screenshot shows a web browser window displaying the ENERGY STAR Labeled Building Profile for Middleburg ES. The browser's address bar shows the URL: http://www.energystar.gov/index.cfm?fuseaction=LABELED_BUILDINGS.showProfile&profile_id=1009376. The page features a navigation bar with "Find more Facilities" and "Facility Profile" buttons. The main content area includes the following information:

ENERGY STAR Labeled Building Profile
MIDDLEBURG ES
101 N. Madison Street
Middleburg, VA 20118
[Map It!](#)

 A goal of Loudoun County Public Schools is to reduce energy usage and ensure efficient and effective stewardship of public resources without impacting the educational environment. This energy use philosophy began in 1993, when the district's Superintendent, along with the Loudoun County Public School Board, started a formal Energy Conservation Program. In 1998, LCPS became an ENERGY STAR partner. Through this partnership, LCPS accessed ENERGY STAR resources and incorporated new technologies into HVAC improvement and lighting retrofit projects planned for Middleburg Elementary School (ES). Middleburg ES was originally constructed in 1911. By 1960, the school had two additions that brought the square footage up to 15,129. By the end of the summer in 2006, Middleburg ES had the necessary upgrades to maintain maximum comfort for the learning environment while improving energy performance. These upgrades, combined with a partnership with Energy Education, set the stage for this school to earn the ENERGY STAR in 2009. Efficient building systems combined with the building occupants' efforts to reduce daily energy use resulted in a "climate for success." At Middleburg ES, students, faculty, and staff all do their part to help the environment by taking individual action to reduce energy use. Their teamwork and attention to detail are a major factor in keeping the energy use to minimum.

Over the years, numerous projects to reduce energy use were implemented. Converting the building's boilers from oil to gas heat, replacing the roof and insulating, maintaining a HVAC filter replacement program, installing programmable thermostats in individual classrooms, retrofitting to LED EXIT lights, and replacing T-12 to T-8 fixtures and lamps all helped to provide the occupants with a building capable of attaining the ENERGY STAR. Middleburg ES exemplifies a strategic point in the Loudoun County Schools approach to sustainability. It can only be achieved through concerted effort in two major areas. Energy efficiency relates to all that can be done to provide a building with the capacity to minimize energy waste. Energy conservation is necessary to assure that the facility users are doing all they can to reduce energy use while maintaining safety and security, education, and productivity.

Communications:

Building Owner:*
Loudoun County Public Schools

Property Manager:*
Energy Education Incorporated (EEI)

Year(s) Labeled (Rating):
2009 (82)

Facility Type: K-12 School

Total Floorspace: 15279 sf

Year Constructed: 1911

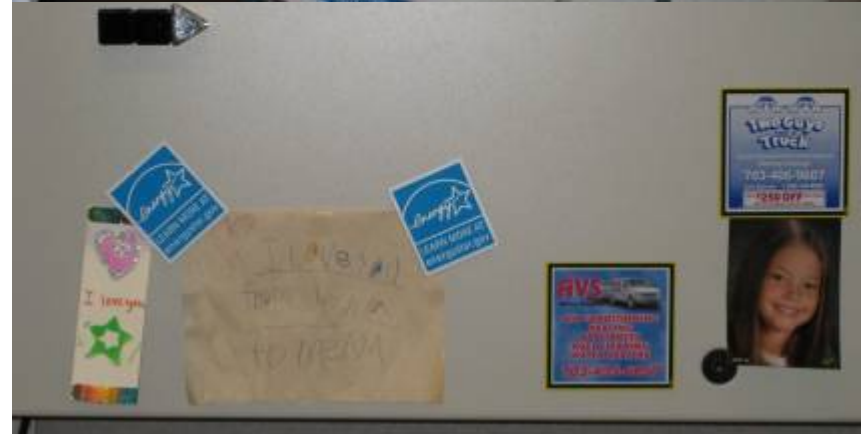
Energy Intensity: 90.2 kBtu/sf/yr

Contract Type: Internal Resources

Technologies Used:
Stage 1-Commissioning
+ Air Systems Tune-up (including Ventilation)
+ Boiler Tune-up
+ Calibrate Thermostats
+ Employee/Tenant Energy Education Program
Stage 2-Lighting
+ LED Exit Signs

ENERGY STAR Publications:

- ENERGY STAR materials are used within LCPS to communicate the ENERGY STAR program, inspire participation, and spark interest in learning more.



ENERGY STAR Partner of the

Year:

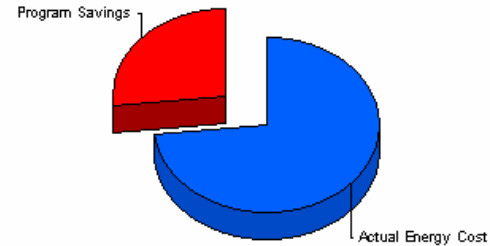
To be recognized as a leader amongst peers on a national level is a very powerful statement of commitment to cost containment and environmental stewardship.



Cost Containment & Environmental Impact

Cumulative Cost Savings

Expected Energy Costs	\$132,167,800
Actual Energy Cost	\$97,072,253
Program Savings	\$35,095,547
Savings Percent	26.55%

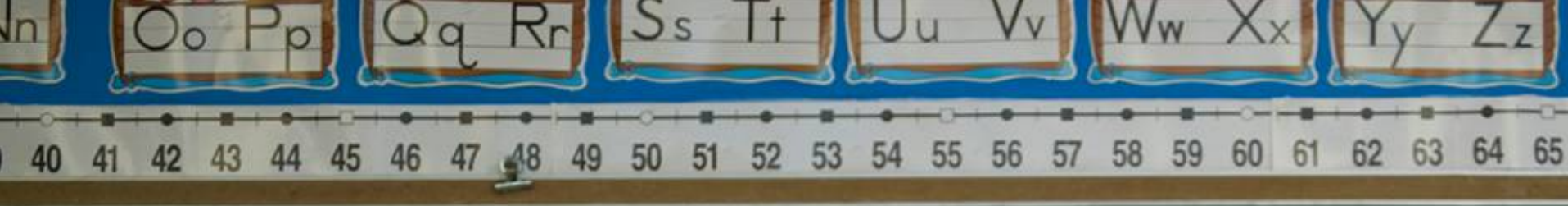


Cumulative Greenhouse Gas Reduction

Energy Reduction Impact: 2,040,435 MMBTU 641,417 equiv. metric tons of CO2

This is equivalent to the following:

Passenger cars not driven for one year:	115,126
Tree seedlings grown for 10 years:	16,406,176



Why is this important to the Citizens of Loudoun County?



\$35 million would allow LCPS to hire 585 teachers for 1 year based on the FY2010 average salary of \$59,734.

Why is this important to the Citizens of Loudoun County?



\$35 million would allow LCPS to teach 2917 students for 1 year based on the FY2010 cost per pupil of \$11,997.

Why is this important to the Citizens of Loudoun County?



- The \$35 million is enough to cover all the costs of building J. Michael Lunsford Middle School.
- It does not cover the entire turn-key project costs, but it does cover the "sticks and bricks."

STEWARDSHIP STATEMENT



Loudoun County Public School's commitment to the environment is expressed through the actions we have taken over the years. For a school system to achieve this level of action during times of unprecedented growth is unique. We believe that having a commitment to healthy, safe, and environmentally friendly schools is an essential part of achieving...

A CLIMATE FOR SUCCESS.