

## Loudoun County Public Schools and Moseley Architects ENERGY STAR Success Story



Loudoun County Public Schools (LCPS) and Moseley Architects have worked together to complete 5 Designed to Earn the ENERGY STAR projects from 2011 to 2016, **producing annual energy savings of over \$600,000. Those savings are the equivalent of educating 47 students a year or hiring 12 first-year teachers.**

Moseley and LCPS have done this **while keeping total investment in energy efficiency to 1-2% of the schools' overall construction costs.** These schools not only save the district money on utility bills but **boost student and teacher comfort by prioritizing daylighting and lower expected maintenance costs by making smart choices about mechanical equipment, lighting fixtures, and building envelope materials during design.**

Moseley informs their design process using a wide range of energy and daylight modeling tools, including Sefaira Architecture in early design and more advanced modeling programs such as Carrier HAP and Trane TRACE in later phases.

The district committed to pursuing ENERGY STAR for all new schools after performing a broad study of high performance building standards and practices in 2010. **LCPS found that the ENERGY STAR program is the best available for measuring and validating energy performance, both planned and actual.** If an organization truly wants energy efficiency to be built into a construction job, the Designed to Earn ENERGY STAR process is the best way to do it.

LCPS' energy team receives strong recognition for their work internally and throughout the community. LCPS and Moseley will present their successes at the American Institute of Architects (AIA) 2017 annual convention.

LCPS views ENERGY STAR for design as a "win win": it's straightforward, uncomplicated, and begins with the end (an energy efficient building) in mind. Energy efficiency equals cost savings and reduced environmental impact.

LCPS, Moseley and ENERGY STAR all agree that focusing on the fundamentals (energy efficient design, construction and operation) establishes a strong foundation upon which additional sustainability measures can be built.

**All four of LCPS' Designed to Earn the ENERGY STAR projects that are eligible have gone on to earn ENERGY STAR certification as existing buildings.**

| Loudoun County<br>Public Schools     | Designed to Earn the<br>ENERGY STAR |                 | ENERGY STAR<br>Certification |                  |
|--------------------------------------|-------------------------------------|-----------------|------------------------------|------------------|
|                                      | Year<br>Achieved                    | Design<br>Score | Year<br>Earned               | Current<br>Score |
| Lunsford Middle School               | 2011                                | 82              | 2013, 2015<br>2016           | 77               |
| Discovery Elementary School          | 2012                                | 94              | 2015<br>2016                 | 92               |
| Moorefield Station Elementary School | 2012                                | 94              | 2015<br>2016                 | 93               |
| Trailside Middle School              | 2012                                | 90              | 2016                         | 89               |



**Architect of Record:**  
Moseley Architects

**Building Owner:**  
Loudoun County  
Public Schools

**Average Design Energy  
Rating:** 88

**Average Percent Energy  
and CO<sub>2</sub> Reduction\*:** 35%

**Design Year/ Estimated  
Occupancy Date:**  
2011 – 2017

**Space Type:** K-12 School

**Total Floor Space:**  
> 650,000 sq. ft.

**Estimated Total Annual  
Energy Use:**  
> 25 million kBtu/yr

**Estimated Annual Energy  
Cost:** > \$515,000

**For More Information**  
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\*Percent Energy and CO<sub>2</sub>  
Reductions are based on  
comparison to a median building  
of similar type