

## ENERGY STAR Design Profile

Brookland Area Elementary School  
Henrico, VA 23228



The new Brookland Area Elementary School is a collaboration between Moseley Architects and Henrico County Public Schools (HCPS). As the architect of record, Moseley Architects worked closely with HCPS to deliver a “**Designed to Earn the ENERGY STAR**” (DEES) certified building that demonstrates good stewardship of both the environment and taxpayer dollars.

The school was awarded DEES certification in January 2021 with an **ENERGY STAR Design Score of 87**. This score signifies that the energy efficiency of the design is in the top 13% of K-12 schools nationwide.

Moseley Architects performed an energy benchmarking study in early design to determine the EUI targets that would need to be met to achieve DEES certification for the new design. This benchmarking study was followed up by an **Integrative Design Process** with HCPS to identify the energy efficiency strategies that resulted in the best financial payback and the most environmental benefit.

The resulting design solution for Brookland Area Elementary School uses an **all-electric design** to capitalize on the continued improvements to the region’s electric grid as utilities move towards cleaner, renewable energy sources and away from fossil fuels.

The building will also be equipped with a **200 kW rooftop solar PV array** that is projected to generate 30% of the school’s annual energy needs, resulting in a net Energy Use Intensity (EUI) from the grid of only **26.3 kBtu/SF/yr**. This solar PV array is being procured by HCPS through a Power Purchase Agreement (PPA) to install solar for zero upfront cost while also benefitting from a lower cost of electricity for the 25-year contract term.

Other energy efficiency strategies included in the design include the following:

- **Envelope:** spectrally-selective insulated 1” low-e glazing, whole-building air-barrier system with continuous insulation
- **HVAC:** variable refrigerant flow (VRF) mechanical system with dedicated outside air units (DOAU) and air-side energy recovery
- **Lighting:** LED interior and exterior light fixtures throughout the entire school with daylight sensors in daylight spaces



### Architect of Record:

Moseley Architects

### Engineering Firm:

Moseley Architects

### Building Owner:

Henrico County Public Schools (VA)

**ENERGY STAR Design Score: 87**

**Percent Energy and CO<sub>2</sub> Reduction\*:** 35.7%

**Design Year/ Estimated Occupancy Date:** 2021

**Space Type:** K-12 School

**Floor Space:** 89,270 SF

**Estimated Energy Use Intensity:**  
37.3 kBtu/SF/yr (site)

**Estimated Total Annual Energy Use:** 3,330,176 kBtu (site)

**Estimated Annual Energy Cost:**  
\$55,880

### 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.