

Wakefield High School

GREEN BUILDING INFORMATION



LEED GOLD CERTIFIED, 2013

Wakefield High School was designed to earn LEED (Leadership in Energy and Environmental Design) Gold certification from the US Green Building Council, recognizing the achievements in environmental design and construction of the school. Building designers use the LEED rating system as a guide to build high performance buildings, evaluating energy and water efficiency, site development, indoor air quality, and building materials for high environmental performance. Arlington Public Schools is committed to building facilities that reduce costs through energy and water efficiency, provide healthy environments for the community, and reduce our impact on the environment.

Learn more about Arlington's Green Building Program at freshaireva.us/green-building.



Arlington Initiative to Rethink Energy



Wakefield High School

1325 South Dinwiddie Street, Arlington, VA 22206

Printed on at least 30% recycled paper. 9/2013

Welcome to Wakefield High School!

Wakefield has been designed to earn the prestigious LEED Gold certification from the US Green Building Council. LEED schools are better places to learn. Studies show that LEED schools with daylighting and high indoor air quality correlate to higher test scores, better health, reduced absenteeism, and higher teacher retention. You will find signs throughout the building that point out specific green building features, and this brochure highlights some of the hard-to-see benefits of the school's green design and construction. To arrange a guided tour please call 703-228-0628.



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CONSTRUCTION WASTE RECYCLING

During demolition and construction, over seventy-five percent (75%) of scrap materials were recycled, including concrete, metal, wood and dry-wall. This significantly reduced the amount of waste sent to the landfill.



RECYCLED CONTENT

Using construction materials that contain recycled content keeps useful materials out of the landfill and preserves our natural resources. Many of the building materials at Wakefield are made with at least thirty percent (30%) recycled content, including the outdoor tables and benches, doors, ceiling tiles, carpet, and more.



Outdoor furniture contains recycled materials



ENERGY EFFICIENCY

Burning fossil fuels like coal to generate electricity causes air and water pollution and destroys valuable habitat. To save energy, the building's lighting is thirty-three percent (33%) more efficient than standard lighting. Occupancy sensors automatically turn lights off in



The sunroof provides daylighting

unoccupied rooms and daylight sensors dim lights on sunny days for additional energy savings.

High efficiency windows and increased insulation in the walls and roof help keep inside air warm in the winter and cool in the summer, reducing energy needed for heating and cooling. Solar shades on the south-facing side of the building block the heat of direct sun in the summer, reducing the demand for air conditioning,

and allow the sun to shine in during the winter, reducing the need for heating.

A geothermal heating system uses the consistent temperature of the earth to heat and cool the building. In the winter, heat is transferred into the building from deep wells underneath the athletic fields, and in the summer the process is reversed.



Exterior solar shading



RENEWABLE ENERGY A solar thermal system located on the roof heats all of the building's hot water, except for the pool water. Also, 90 kW of solar photovoltaic panels on the roof provide approximately 115,000 kWh of electricity in a typical year. Together these systems supply almost 5% of the energy use of the building.



Solar panels create clean electricity



Solar hot water tubes heat water



STORMWATER MANAGEMENT AND WATER EFFICIENCY

Rain washes pesticides, oil from roads and parking lots, and other pollution into local streams like Four Mile Run and eventually into the Chesapeake Bay. To protect our local waterways, rain that falls on the school's parking lot is collected and used to flush toilets in the school. The irrigation system for the athletic fields collects and uses rain that falls on the roof and condensation from the air conditioning system. Landscaped areas like the rain garden by the school's entrance slow down, cool, and filter stormwater.



Raingarden cools and filters stormwater



Underground cistern collects and stores stormwater

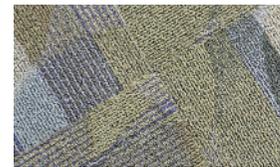
Wakefield was designed to use water very efficiently. Dual-flush toilets, low-flow urinals, and faucet aerators in the restrooms use less water than standard plumbing fixtures. Plants selected for the landscaping and grass on the athletic fields are adapted to need little water. The combination of rainwater reuse and water efficiency saves an estimated 3.5 million gallons of Arlington's valuable drinking water every year.



FRESH AIR MONITORING High carbon dioxide (CO₂) levels in the air (caused by people breathing) are unhealthy and make you feel tired. Carbon dioxide sensors in classrooms and meeting rooms provide fresh air whenever CO₂ levels get too high. These sensors also save energy by powering down heating and air conditioning when the rooms are empty.



LOW-EMITTING MATERIALS Inhaling chemicals called Volatile Organic Compounds (VOCs) can cause health problems ranging from headaches to liver damage. Low-VOC paints, sealants, adhesives, and carpet help keep the air in this building clean.



Low VOC carpet



REGIONAL MATERIALS Using building materials manufactured close to the construction site reduces pollution caused by transporting these items over long distances. Over 10 percent (10%) of the materials used to build the school came from within 500 miles of Arlington.



OPEN SPACE A variety of outdoor spaces encourage students and visitors to connect with the outdoors and supports health and well-being. Woodland areas were preserved and additional forest was restored to provide habitat for birds and pollinators like bees and butterflies.



HEAT ISLAND REDUCTION The *Urban Heat Island Effect* occurs when parking lots, roads, building roofs and other dark surfaces absorb heat during the day. Higher temperatures increase the need for air conditioning, resulting in more air pollution. Hotter days can also cause health problems such as asthma attacks in sensitive people. The ENERGY STAR white roof and the landscaped areas have a cooling effect, reducing the heat island impacts on the community.



ALTERNATIVE TRANSPORTATION Alternative transportation reduces pollution caused by single occupant vehicles and promotes a healthier lifestyle. Arlington Public Schools offers a financial incentive to employees who use Metro, walk, or bike to work. Bike parking and showers encourage cycling. The school can also be reached by public transit via the Metro 25 and 16 and the ART 75 bus lines.