

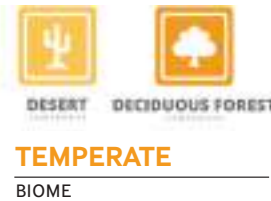
# Alice West Fleet Elementary School

Arlington Public Schools

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## Design For Energy

> Fleet maximizes south-facing roofscape for photovoltaics, provides deep shading to south-facing windows and minimizes east/west exposure.



**IMPROVED BUILDING ENVELOPE** including added insulation, increased airtightness, thermally-broken frames and improved glazing



**DEDICATED OUTDOOR AIR SYSTEM** with heat recovery and demand control decouples ventilation from heating/cooling and provides fresh air



**OPERABLE WINDOWS** encourage occupants to engage with the building and open up when weather conditions permit



**HLR SYSTEM** removes CO2, VOCs and other contaminants from the air, improving IAQ while reducing outside air demand



**EFFICIENT LIGHTING**, primarily from daylight and complemented by LED fixtures, results in a 76% reduction in lighting power density



**SENSOR NETWORK** monitors occupancy, light levels, and CO2 levels to maintain optimal conditions while limiting energy use



**GEOTHERMAL ENERGY** connected to water-source heat pumps deliver low-maintenance, low-energy heating, cooling, and domestic hot water



**ALL ELECTRIC KITCHEN** eliminates on-site combustion and fryers and means fresher, healthier food



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**2014**

57.7% IMPERVIOUS



**2019**

59.3% IMPERVIOUS



**Building Data**

Site Area: 4.84  
 Gross conditioned floor area: 111,634 gsf  
 Gross unconditioned floor area: 100,611 gsf  
 Total built area: 212,245 gsf  
 GMP: \$46,750,000  
 Cost per SF: \$220/sf (approx. \$338/sf conditioned)  
 Parking in underground garage: 216 spots  
 Date of occupancy: September 2019  
 Energy code: 90.1 (2010)  
 Predicted EUI: 18-21

Capacity of PV system: 582.2 kW  
 Number of PV panels: 1,532  
 Predicted annual PV production: 728,900 kWh  
 Geothermal: 72 wells, 560' deep  
 Water-to-Air Heat Pumps: 68 zones  
 CO2 setpoint that triggers extra ventilation: 800ppm  
 Light Power Density: 0.36 W/sf  
 Effective R-value of typical wall assembly: 33  
 U-value of glazing: 0.23  
 Solar Heat Gain Coefficient: 0.26



Gymnasium



Learning Commons



Elementary Balcony



Power Pole



Outdoor Classroom



Early Learner Playground



Sports Field