

VIRGINIA ENERGY EFFICIENCY LEADERSHIP AWARDS: SAMPLE APPLICATION

Name of project or program being nominated: Arlington County Central Library

Implementing Entity: Arlington County

Innovation: How has the project/program demonstrated an outstanding and/or unique contribution to energy efficiency beyond that which is to be expected? (100 words max)

Arlington County government has made its Central Library a model of efficient performance of an existing building. Since 2000, Arlington cut electricity consumption by 54 percent in this popular, 137,000 sf facility through energy management best practices. A recent boiler replacement further improved overall energy performance, cutting natural gas use 22 percent (normalized for weather). This site has been featured as a U.S. DOE Better Buildings Challenge Showcase Project, and is a key contributor to Arlington's pursuit of a 20 percent reduction in portfolio-wide energy intensity by 2022.

Energy Savings: Please provide the projected or realized energy savings in standard units such as kilowatt hours for electricity and/or British Thermal Units (BTUs) for total energy. (100 words max)

In calendar year 2000, the Central Library consumed 2.80 million kWh. In 2017, the Library used 1.28 million kWh. The 1.52 million kWh reduction represents \$140,000 in avoided annual costs to the library system and County government. [Arlington benchmarks its facilities and has monthly data back to 1999-2000 for most.]

Challenges: What challenges if any were faced to meet efficiency goals? (100 words max)

The biggest challenges were (a) availability of funding for capital improvements, and (b) change management, in terms of gaining collaboration from others to pursue new goals with new ideas. These are common hurdles for energy efficiency practices. Lacking funding, initially, led to pursuit of low-cost tune-ups and scheduling changes, which made significant positive progress. Showing early successes helps overcome institutional inertia for further change. Benchmarking -- paying attention to monthly use and bills -- was essential to show that modest changes could yield substantial savings.

Detailed Summary (200 words or less, third person)

Arlington County government has made its Central Library a model of efficient performance of an existing building. This 137,000 square-foot facility is visited by some 900,000 people each year. It is the anchor and headquarters for the Arlington library system. Since 2000, Arlington has cut electricity consumption there by 54 percent through a variety of energy management best practices. In addition, a recent boiler replacement further improved overall energy performance, cutting natural gas use 22 percent (normalized for weather). Arlington hired its first energy manager in 2000. He saw this building was highly visible, heavily used, and had great potential for savings. The building consumed 2.8 million kWh, and peak electric demand exceeded 500 kW in six months that year. Staff began adjusting schedules, tuning equipment, and retrofitting lighting when funds were available. In 2009, the library used 1.80 million kWh and peak demand exceeded 400 kW in three months. A new chiller plant was installed in 2012-13 with PAYG funding to replace aging equipment. The emergence of LEDs enabled additional lighting retrofits, and total electricity use was down to 1.28 million kWh in 2017. Also, in 2017 peak electric demand did not exceed 385 kW.