

Sustainability Profile:

One Rogers Street



Property name: One Rogers Street

Location: Cambridge, Massachusetts

Building type: Class A Office

Building size: 293,524 sq. ft.

Constructed: 1989

Acquired: 2005

Property manager: JLL



Property Overview

Located in the heart of East Cambridge Market, One Rogers Street is a 293,524-square-foot office building next to One Charles Park. The property features panoramic views of the Charles River. Built in 1989, One Rogers Street is home to a number of R&D and technology firms, including IBM, Pegasystems Inc., and The MIT Press. Principal Real Estate Investors acquired One Rogers Street in 2005, and JLL currently manages the property. One Rogers Street and its innovative neighbors support the Cambridge Compact for a Sustainable Future.

Improving Sustainability

Seeking opportunities for continual improvement, the team at One Rogers Street identified opportunities with the greatest potential for return. They investigated all opportunities, from no-cost/low-cost to capital expenditures. The property team focused on capital upgrades that would improve the building's energy performance.

Following a study in 2014, the team decided to replace the property's 525-ton water-cooled chillers, which used R-11 (CFC) refrigerant. Smaller, high-efficiency R-134 (HFC) refrigerant models replaced the 25-year-old original equipment. The result was a reduction of energy use and maintenance costs, allowing for efficiency improvements in an area typically considered economically unfeasible. The change from CFC to HFC refrigerant lowered the building's impact on the ozone and aligned with the property's pursuit of LEED certification to meet the requirements of Energy and Atmosphere prerequisite 3, Fundamental Refrigerant Management.

The chiller-replacement project also included rebuilding and upgrading the two boilers, which provide hot water for space heating. This project involved re-tubing the boilers and installing a new control system. The added system is capable of analyzing flue-gas emissions and making internal adjustments. Analyzing flue gases ensures that the equipment is operating at peak efficiency by maintaining optimal air-to-gas ratios. The team also added new circulation pumps with VFD controls based on differential pressure.

Additionally, the team at One Rogers Street installed dampers in the elevator machine rooms to mitigate stack effect. Stack effect is the movement of air in and out of a building because of a difference between indoor and outdoor temperatures. The dampers are controlled through the fire alarm system to ensure proper damper operations during emergencies. Mitigating stack effect reduces HVAC system energy consumption and costs by limiting the amount of conditioned air that exits the building. Newly installed vent hoods near the damper openings prevent rain and snow from entering the space and damaging the new equipment.

Together, the property team's improvements helped reduce the property's energy use by 13.2% over the most recent 12-months. In turn, the efforts garnered the ENERGY STAR label in 2016. In addition to the energy and water conservation efforts, the One Rogers Street property team employs a robust program of tenant engagement and education. By working together, the property team and tenant achieved Gold Certification under the U.S. Green Building Council's LEED for Existing Buildings: Operations & Maintenance rating system in 2015. Achieving LEED Gold certification demonstrates the collective commitment by the owner, property team, and tenants to be among the most sustainable buildings in the United States.

Key Facts, Awards, and Recognition:

- Current ENERGY STAR score: 81
- ENERGY STAR Certification: 2016, 2012, 2010
- LEED EBOM Gold
- Completed ASHRAE Level II audit (2014)
- Energy-use reduction 1-Year: 13.2%
- Energy-use reduction from baseline: 20.1%
- Water-use reduction 1-Year: 7.6%

Sustainability Initiatives:

The property team utilized the following strategies to reduce energy, water, and waste, and to improve the environmental impact of One Rogers Street:

- Reduced occupants' conventional commuting trips by 68% through utilization of public transportation
- Reduced storm water runoff and mitigated 18% of the site's rainfall through the installation of vegetation in the courtyard
- Reduced indoor water consumption by 33% compared to standard plumbing fixtures
- Replaced old R-11 chillers with new R-134 chillers
- Conducted an ASHRAE Level II energy audit and implemented low-cost and no-cost energy measures
- Purchased renewable energy certificates and carbon offsets to cover 62.5% of the building's energy consumption for two years
- Met the sustainable purchasing requirements for 80% of the office furniture purchased by the tenants during the performance period
- Purchased low-mercury, long-life lamps to reduce the overall average mercury content in lamps to less than 70 picograms/lumen-hour
- Recycled 1,154 pounds of electronic waste
- Provided 30% more outdoor air ventilation than required by ASHRAE 62.1-2007 minimum
- Implemented a high-performance green cleaning program for all janitorial needs
- Implemented an integrated pest management (IPM) program for indoor and outdoor pest control
- Conducted monthly nighttime building walkthroughs
- Installed VFDs on chilled water pumps and installed a differential pressure sensor
- Upgraded the natural gas-fired boilers and replaced the heat exchangers
- Installed dampers in the openings of the elevator machine room to reduce stack effect and decrease HVAC energy usage



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