SHOWCASE PROJECT: CASCAP: HARVARD PLACE

SOLUTION OVERVIEW

Cascap, Inc. purchased Harvard Place, at the time a dilapidated nursing home, in 1999. Cascap substantially renovated the building, removing the 1960s façade to reveal the historic 19th century mansard architecture. The company also constructed an addition to the rear of the building, more than doubling its size. Although industry best practices were followed at the time, the renovation did not specifically include green building practices or technology.

In 2011, Cascap enacted a new policy to improve the energy and water performance of its portfolio by targeting individual buildings for green retrofits as they aged. Cascap applied to Massachusetts' LEAN Multifamily program (Low-income Energy Affordability Network) and obtained funding and a consultant to support a portion of the portfolio-wide modernization effort. Harvard Place's heating system was nearing the end of its useful life in 2012, making the historic building a prime candidate for modernization.

Harvard Place received federal, state, local, and private funding for the renovation, and operates under the U.S. Department of Housing and Urban Development's (HUD) Section 202 supportive housing program for low-income seniors. The 22-unit building is within walking distance of multiple services and amenities located in Central Square in Cambridge.

SECTOR TYPE

Multifamily

LOCATION

Cambridge, Massachusetts

PROJECT SIZE

30,000 Square Feet

SOLUTIONS

Through the LEAN program, New Ecology Inc. (NEI) performed an energy audit on Harvard Place and recommended the most effective energy conservation measures, which guided Cascap's building retrofits. NEI worked with manufacturer representatives and contractors to define the scope

of work, hold a bidder's conference, and select the winning bid. Some of the energy- and water-efficient improvements at Harvard Place included:

- Replacing three modular boilers with two condensing boilers;
- Replacing a 115-gallon storage tank with a 114-gallon indirect hot water tank;
- Replacing common area fluorescent lighting with LED bi-level fixtures, which increase light level from 1W to 20W when mounted occupancy sensors are activated;
- Converting emergency exit signs to LED bulbs;
- Replacing circulating pumps with variable speed pumps, which adjust their flowrate in response to the number of apartments requesting heat, resulting in approximately 60 percent energy savings;
- Installing low-flow aerators in kitchen and bathroom sinks and showers; and
- Installing controls on heating units.

As units turn over in the future, Cascap plans to implement additional building performance improvements recommended in the energy audit such as:

- Unit electrical upgrades;
- In-line monitoring of water consumption figures by unit;
- Solar PV installation (after roof replacement); and
- Expanded tenant education programming.

OTHER BENEFITS

In addition to improving Harvard Place's energy and water performance, Cascap ensured that the retrofit maintained or improved indoor air quality as it tightened the building envelope. At the conclusion of the renovation, Cascap prohibited smoking on the property to decrease building maintenance costs and improve indoor air quality and resident health.

Annual Energy Use
(Source EUI)

Baseline(2013)
85 kBtu/sq.ft.

Actual(2016)
63 kBtu/sq.ft.

Energy Savings
26%

Annual Energy Cost

Baseline(2013)
$25,400

Actual(2016)
$23,300

Cost Savings
$2,100

Front of Harvard Place

Cascap installed both energy and water efficient upgrades

Alternate view of Harvard Place Entrance