

Carrington Way Apartments

Location: Newark, DE • *Size:* 15 Buildings comprised of 165 units •
Owner: The Capital Realty Group

PROJECT BACKGROUND

Carrington Way is an affordable, 165-unit multifamily apartment complex located in Newark, Delaware. By 2020, the nearly 50 year-old development was showing its age and in desperate need of some energy efficient upgrades. The owner, Capital Realty Group, enrolled the complex in the Existing Building pathway of the Energize Delaware Affordable Multifamily Housing Program, an initiative of the Delaware Sustainable Energy Utility (DESEU). Their goal was to identify cost-effective energy and water efficiency upgrades and evaluate feasible renewable and clean energy systems, while reducing maintenance requirements.

SITE ENERGY SAVINGS

ENERGY & WATER SAVINGS

- Electricity penalty: 4,821 kWh per year*
- Natural gas: 71,538 therms per year
- Water: 3,766,000 gallons per year

PERCENTAGE SAVINGS

- 52% greenhouse gas emissions
- 57% energy
- 42% water
- 31% energy utility costs
- 38% water utility costs

ANNUAL COST SAVINGS

- Electric and gas: \$80,000
- Water: \$43,000
- Total: \$123,000

* heating fuel switched from gas to electricity



As the administrator of the program, New Ecology, Inc. (NEI) conducted an ASHRAE level II energy audit to identify upgrade and savings opportunities, which were then implemented through the Program. Throughout the process, NEI provided project management, which included: project scoping and bidding management, contractor submittals, technical assistance, construction support and oversight, and post-construction on-site staff training.

Thanks to the Energize Delaware program, the cost of upgrading multiple energy and water consuming systems in the apartment complex was subsidized by a \$445,000 rebate to the owners. The upgrade and rebate assistance through DESEU were a major factor in enabling their ability to extend the affordability status of the complex, as they recently submitted a twenty-year extension to their Housing Assistance Payments Contract (HAP) contract with the US Department of Housing and Urban Development (HUD).

The subsidies for energy and water efficiency upgrades, which greatly lowered operating costs, fostered the ability to extend affordability and retain HUD status for another 20 years.

Solutions and Features

- End-of-life gas-fired central boilers with DHW (domestic hot water) coils were removed, and replaced with new in-unit high-efficiency air source heat pumps which distribute ducted heating and cooling via EC fan motors. The variable speed split systems achieve up to 19 SEER and 11 HSPF.
- New high-efficiency gas-fired condensing storage hot water heaters and thermostatic mixing valves were installed to serve each building with domestic hot water, and existing piping was insulated.
- Attic air sealing and insulating, along with in-unit air sealing, were performed to reduce drafts, and new bathroom exhaust fans, ducting and dampers were installed to promote improved indoor air quality.
- New LED lighting was installed in each unit, and occupancy controls were installed in common areas which already utilized LED fixtures.
- New ultra low-flow toilets and water-conserving aerators and showerheads were installed throughout the residential buildings.

BEFORE



AFTER



BEFORE AND AFTER: Aging condensing units were replaced with exterior, wall-mounted heat pumps. The abandoned wall penetrations were fully insulated and finished with brick.

