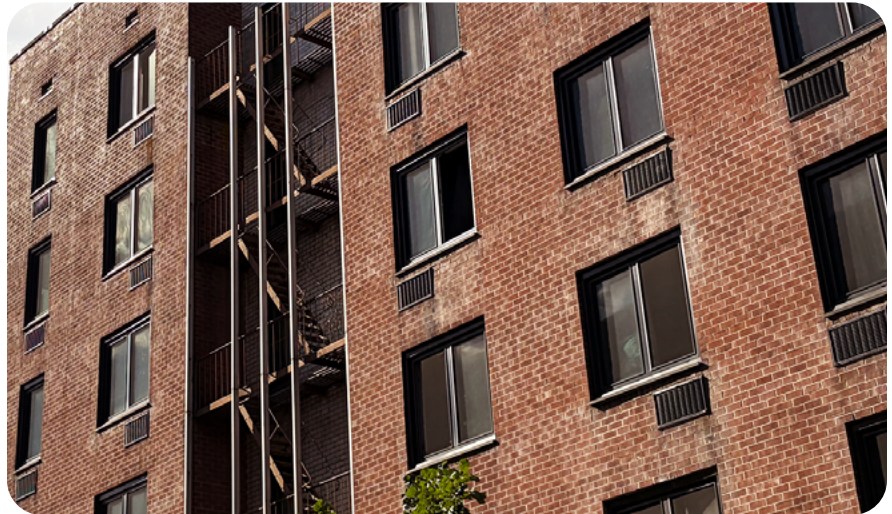


Case Study

Reuse and reduce: Wall heat pumps slash energy in postwar rental

This 65-unit building replaced its existing heating and cooling system with **wall packaged terminal heat pumps**. The existing wall penetrations for air conditioners made a thru-wall heat pump a natural retrofit choice. The property installed new high-performance windows. These upgrades led to an impressive 93 percent reduction in the building heating energy use.



Retrofit snapshot

Before

- 2-pipe steam convector heating
- Thru-the-wall sleeve AC units

After

- Wall heat pumps for heating and cooling
- High-performance windows and air sealing around wall sleeves
- **90+ percent reduction** in energy used for heating

Learn more and see other room heat pump case studies



The building

Built: 1970

Size (SF): 62,986

SF/Unit: 969

Units (#): 65

Type of occupancy:
Rental

Pre-retrofit systems:

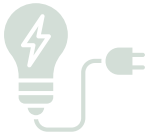
Heating distribution:
2-pipe steam

Heating terminal
units: Convectors

Heating fuel: Gas

Cooling system:
Window/Sleeve AC





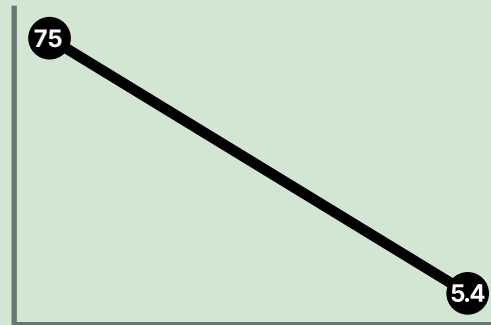
Energy use impacts

Cutting space heating energy is the fastest way for buildings to reduce energy use since space heating typically accounts for more than half of the building's energy use.

93%
Heating EUI
reduction

Pre-retrofit EUI: **75** (kbtu/sf/yr)

Post-retrofit EUI: **5.4** (kbtu/sf/yr)



Retrofit costs

Despite higher costs, wall heat pumps are an attractive option for buildings with existing wall ACs that need to be replaced. New windows also improve resident comfort.



Heat pumps +
installation:

\$18,700
per apartment

High-performance windows

\$6,900
per apartment



Total retrofit cost

\$25,600
per apartment

Notes:

This retrofit took place in the Spring 2023.

The heating energy analysis is based on data through Spring 2026. Heating EUI savings will be updated as new data becomes available.

Epocha (now **INNOVA**) Packaged Terminal Heat Pump units were used for this retrofit.

