

\$23,000
IN
ANNUAL SAVINGS

SUSTAINABLE CPC: A STUDY IN SAVINGS

Classic Energy Retrofit | Multifamily Walkup



BUILDING PROFILE

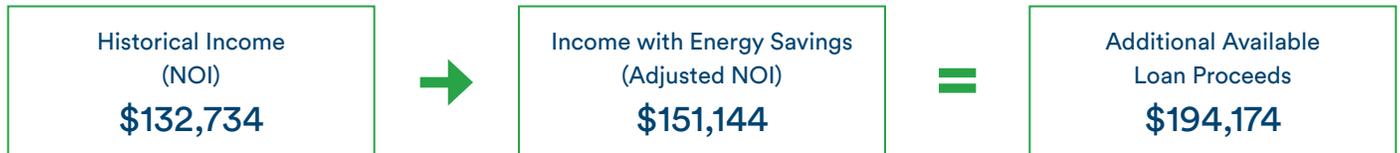
Year Constructed	1920
Size	6 Floors, 35 Apartments, 132 Rooms, 34,600 Gross Square Feet
HVAC System	Oil-Fired, Steam Boiler, 1-Pipe Distribution
Utilities Provided by Owner	Heat, Hot Water, Water & Sewer

By 2009, this building was in poor physical condition and relied on outdated heating and distribution systems. Working with our city and state government partners, CPC provided a construction loan for rehabilitation and efficiency upgrades that included roof replacement, low-flow water fixtures, envelope insulation, and a new boiler.

PROJECT PROFILE

Loan Type	Construction and Permanent Loan
Loan Offering	\$1.4 million

ADDITIONAL LOAN PROCEEDS SUPPORT ENERGY AND WATER EFFICIENCY



SAVINGS SNAPSHOT

As a result of the comprehensive energy retrofit this building went through, the property reduced its gas bill by \$700 per dwelling unit and saved 32% on the total annual utility cost, as reflected in the table below. As part of the renovation, additional lighting fixtures were added to common areas,

increasing the electricity load and cost. The scope also included replacement of all the building plumbing fixtures, driving down the amount of water used every day. Since this building is billed on a flat rate for water, cost savings from the water retrofit were not included in the analysis.

UTILITY	ANNUAL EXPENSE BEFORE (\$/APARTMENT)	ANNUAL EXPENSE AFTER (\$/APARTMENT)	EXPENSE DIFFERENCE
Heating	\$1,400	\$760	-46%
Hot Water	\$670	\$610	-9%
Electricity Baseload	\$140	\$170	+12%
Water	305 gal day	216 gal day	-29%
Total	\$2,210	\$1,540	-30%

UPGRADE COST AND SAVINGS

The graphic below outlines the cost and potential savings associated with upgrading certain components to new, energy efficient models. Use this graphic to help you estimate the cost savings of installing similar upgrades in your building.

KEY

- Per Building
- Per Apartment



HEAT

EXISTING CONDITION 75% efficiency for existing boiler burning #4 oil	
UPGRADE OPTION Heating system upgrade: new boiler (87% efficiency, #2 oil), pipe insulation; new control, radiator valves	
INSTALLATION COST \$105,000	ESTIMATED ANNUAL SAVINGS \$5,950
SIMPLE PAYBACK (YRS) 17.7	RETURN ON INVESTMENT (ROI) 5.7%



HOT WATER

EXISTING CONDITION Hot water provided by heating boiler year-round	
UPGRADE OPTION Separate hot water heater, pipe insulation, temperature adjustment	
INSTALLATION COST \$22,050	ESTIMATED ANNUAL SAVINGS \$3,500
SIMPLE PAYBACK (YRS) 6.3	RETURN ON INVESTMENT (ROI) 15.9%



ROOF

EXISTING CONDITION Flat, built-up roofing system	
UPGRADE OPTION New roof sealing leaks; 12" insulation	
INSTALLATION COST \$52,850	ESTIMATED ANNUAL SAVINGS \$3,850
SIMPLE PAYBACK (YRS) 13.7	RETURN ON INVESTMENT (ROI) 7.3%



WINDOWS

EXISTING CONDITION Standard double-pane windows	
UPGRADE OPTION Low-e coated windows in apartments and common area	
INSTALLATION COST \$70,000	ESTIMATED ANNUAL SAVINGS \$10,150
SIMPLE PAYBACK (YRS) 6.9	RETURN ON INVESTMENT (ROI) 14.5%



LIGHTING

EXISTING CONDITION Incandescent and T12 fluorescent bulbs	
UPGRADE OPTION Efficient light bulbs, lighting fixtures, and rewiring in apartments and common areas	
INSTALLATION COST \$1,000	ESTIMATED ANNUAL SAVINGS \$110
SIMPLE PAYBACK (YRS) 9.1	RETURN ON INVESTMENT (ROI) 11.0%



FIXTURES

EXISTING CONDITION Standard-flow fixtures	
UPGRADE OPTION Low-flow showerheads and faucets in kitchen and bathrooms	
INSTALLATION COST \$20	ESTIMATED ANNUAL SAVINGS \$10
SIMPLE PAYBACK (YRS) 2.0	RETURN ON INVESTMENT (ROI) 50.0%



REFRIGERATORS

EXISTING CONDITION Existing refrigerators using 800 kWh/yr each	
UPGRADE OPTION ENERGY STAR refrigerators, 386 kWh/yr each	
INSTALLATION COST \$610	ESTIMATED ANNUAL SAVINGS \$110
SIMPLE PAYBACK (YRS) 5.6	RETURN ON INVESTMENT (ROI) 18.0%

FEATURED UPGRADE BOILER AND HEATING CONTROLS

Boilers lose efficiency and reliability as they age, and after decades of service they can be up to 25% less efficient. Upgrading a boiler is also a great opportunity to improve outdated controls and fix inefficiencies in the distribution system, which can have a great impact on energy use, comfort, and costs. Heating savings of at least 10% are typical from boiler or control replacements.

IS THIS UPGRADE RIGHT FOR YOU? If any of the following apply, then yes!

- ✓ Central steam or hydronic (hot water) heating systems
- ✓ Overheating and resident discomfort
- ✓ Aging boilers due for replacement
- ✓ Old, analog heating system controls
- ✓ Oil used as heating fuel; interested in converting to natural gas