MULTIFAMILY ENERGY EFFICIENCY
Moderate Renovation

Cost: $1,000-$8,000/unit
Save: Energy 10-40%; Water 15-40%

Upgrading major systems and key building components produces long-term cost savings and improves comfort. Using mortgage proceeds to finance these investments allows owners to obtain low-cost capital and spread payments over a much longer time than would be possible with non-mortgage loans.

OVERVIEW

When a building owner is considering a moderate renovation or a building is a high energy or water user, there is a great opportunity to boost efficiency through a targeted retrofit of existing systems or replacement of key building components. Incorporating efficiency measures into a planned renovation saves time, reduces overall cost, and minimizes disruptions to tenants. An energy engineer should be consulted to provide an energy audit or green physical needs assessment (GPNA) to help identify, prioritize, and analyze the cost-effectiveness of potential upgrades.

- Upgrades should be tied to planned repairs and replacements to maximize returns.
- An experienced energy engineer can identify building-specific efficiency measures and help design a scope of work.
- Energy audits and GPNAs provide analyses of projected cost savings to support underwriting.

FINANCING

Underwriting energy and water savings can unlock additional loan proceeds to support efficiency work when a mortgage is refinanced or a building is purchased.

SAMPLE SCOPE

- Domestic hot water (DHW) heater replacement
- ENERGY STAR appliances
- Roof insulation
- Window replacement
- High-efficiency pumps and motors
- Ventilation upgrades
- Boiler repair or replacement
- Toilet replacement
- Heating system sensors and controls

LEARN MORE

Access our no-cost technical assistance.
Talk to your mortgage officer today or contact:
Elizabeth Kelly, Manager of Sustainability Programs
ekelly@communityp.com | 646.822.9427

To see how others have brought sustainability to multifamily projects, find our suite of case studies - Sustainable CPC: A Study in Savings at *communityp.com*

This list of energy and water measures best suited to a moderate renovation is not exhaustive and not all measures will be applicable to all properties. A qualified contractor, energy auditor, or engineer should be consulted to identify appropriate measures and estimate costs and savings for a particular building.

Measure	Property Type	Non-Energy Benefits	Cost Range	Savings*
Replace/Upgrade Packaged HVAC	Any		$$$	5%
Increase Roof Insulation	Any		$$$	3%
Upgrade Motors or Install VFDs**	Any		$$	4%
Replace Washing Machines & Dryers	Any		$	1%
Upgrade Exhaust Fans	Any		$	2%
Replace Toilets	Any		$$	10%
Replace Windows and Glazing	Any		$$$$	4%
Replace Refrigerators	Any		$$$	2%
Replace Exterior Doors	Any		$	1%
Install Heating System Sensors	Central Heat		$	1%
Install Central Heating Controls	Central Heat		$$$	6%
Upgrade or Repair Burner	Central Boiler Heat		$$	3%
Upgrade DHW Boiler	Central DHW		$$$	3%
Install Thermostatic Radiator/ Valves or Zones	Central Boiler Heat		$$$	5%
Convert Heating System from Oil to Gas	Oil-Fired Heating		$$$$	10%
Install Submetering	Master-Metered		$$$	15%
Install Irrigation Controls	Landscaped, Garden-Style		$$	13%

TABLE KEY

$ = <$0.05/sq.ft.
$$ = $0.05-$0.25/sq.ft.
$$$ = $0.26-$1.00/sq.ft.
$$$$ = >$1.00/sq.ft.

= Stewardship
= Affordability
= Comfort
= Performance
= Safety
= Quality
= Health
= Value
= Risk Mitigation

** Savings shown in the table represent typical whole-building site energy consumption savings (or water consumption savings where relevant). Actual savings may vary based on existing performance and conditions at the property.*

*** Variable frequency drives (VFDs) make it possible to adjust the speed and energy used for fans, pumps, and other devices that run continuously, but for which demand varies.*

CONSIDER THIS

- The most efficient DHW and heating boilers are fully condensing (for natural gas-filled systems) and electric heat pump models. DHW efficiency also depends on optimizing recirculation controls, pipe and tank insulation, and control settings.
- Downsize a heating boiler if the previous system was larger than necessary or the heating load has been reduced by other efficiency measures.
- Low-e coating, argon gas-filled, double or triple pane, or an ENERGY STAR label are all signs of efficient window models.
- High-efficiency motors and VFDs can be installed on pumps or fans that run continuously. A qualified engineer should advise on the best VFD option for specific equipment applications.
- Energy-efficiency washers and dryers can be requested from a property's laundry vendor.
- Low-flow, high quality toilet models use as little as 0.8 gallons per flush. Flapper-less designs remove a common source of tank leaks, reducing wasted water and maintenance costs.
- An oil-to-gas conversion can produce substantial cost savings. To ensure energy consumption is also reduced, upgrade and properly size the heating system at the time of fuel conversion.
- Master-metered buildings may install submeters, enabling owners to charge residents directly for in-unit energy or water consumption. Residents reduce energy consumption when they are paying for it directly.
- Roof insulation should have a minimum insulation value of R-38.