

Building Efficiency

Identifying ways to improve building efficiency based on financing goals, timing, and other constraints

Uncommon Expertise. Unmatched Impact.



**Community[®]
Preservation
Corporation**



**ENERGY
EFFICIENCY
FOR ALL**

Speakers



Yerina Mugica, Natural Resources
Defense Council (Moderator)



Elizabeth Kelly, Community
Preservation Corporation



Jon Braman, Bright Power



A coalition-driven, 12-state campaign to increase energy efficiency in affordable multifamily housing



** Strong presence in Atlanta, Chicago, Kansas City, Los Angeles, Minnesota, New Orleans, New York City*



ELEVATE ENERGY



ENERGY FOUNDATION
building a new energy future

CDFI Clean Energy in Affordable Housing Learning Network

- A learning network of CDFIs that has gathered to share what has worked and explore opportunities for expanding and employing that knowledge.
 - Website with Resource Hub
 - Transaction Database
 - Webinar Series



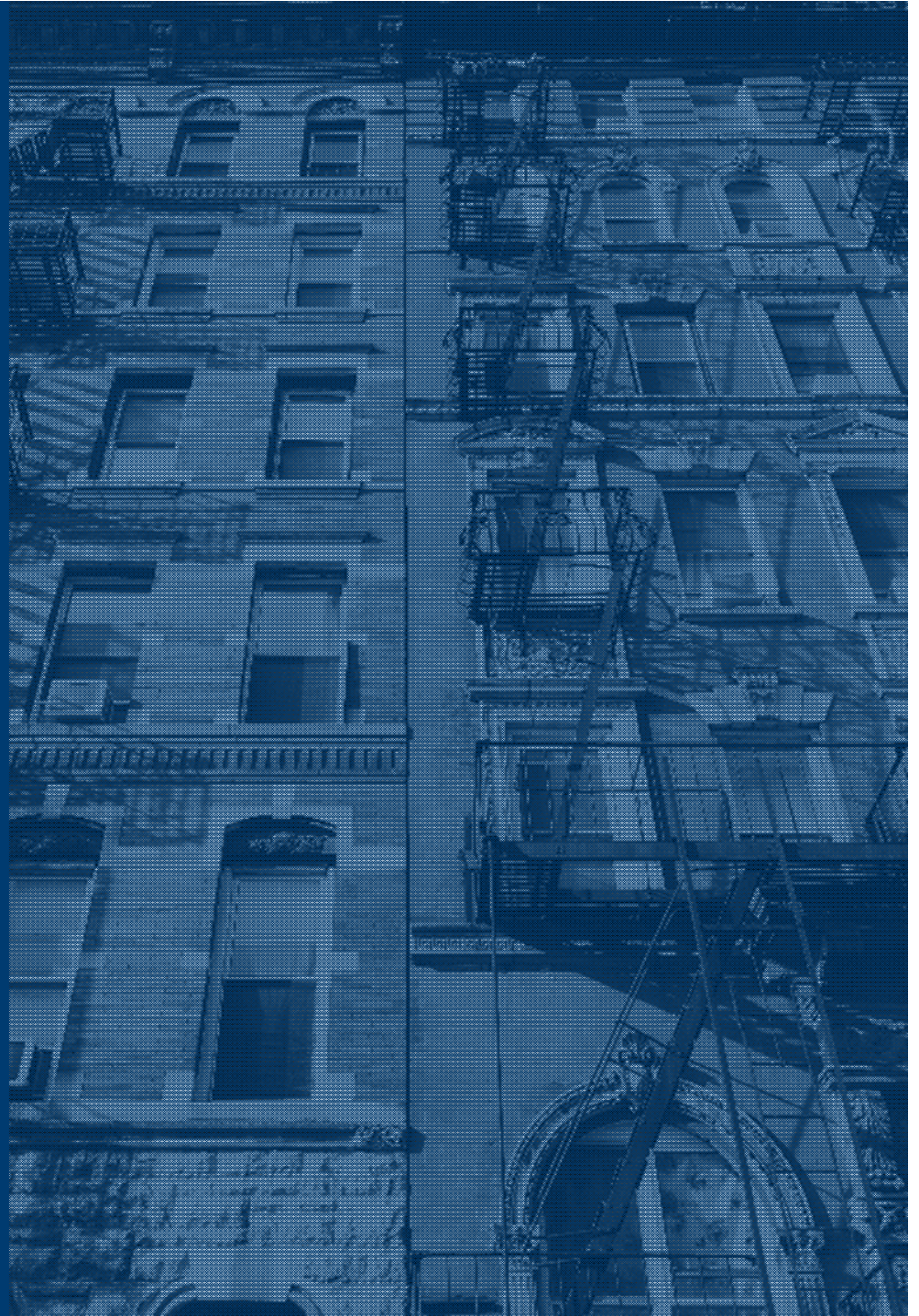
Who We Are: Community Preservation Corporation (CPC)

- Established in 1974, CPC is a nonprofit affordable housing and community revitalization finance company that believes housing is central to transforming underserved neighborhoods into thriving and vibrant communities.
- We provide innovative capital solutions, fresh thinking, and a collaborative approach to the often complex challenges that owners and developers of multifamily housing face.
- With \$9.7 billion in public and private investments, our work has helped revitalize countless neighborhoods and provided quality housing for low-income families, senior citizens, and individuals with disabilities.



Property owners have the greatest access to capital when they obtain their first mortgages.

In every transaction, mortgage lenders have an opportunity to show building owners how to improve their financial performance by investing in building efficiency.

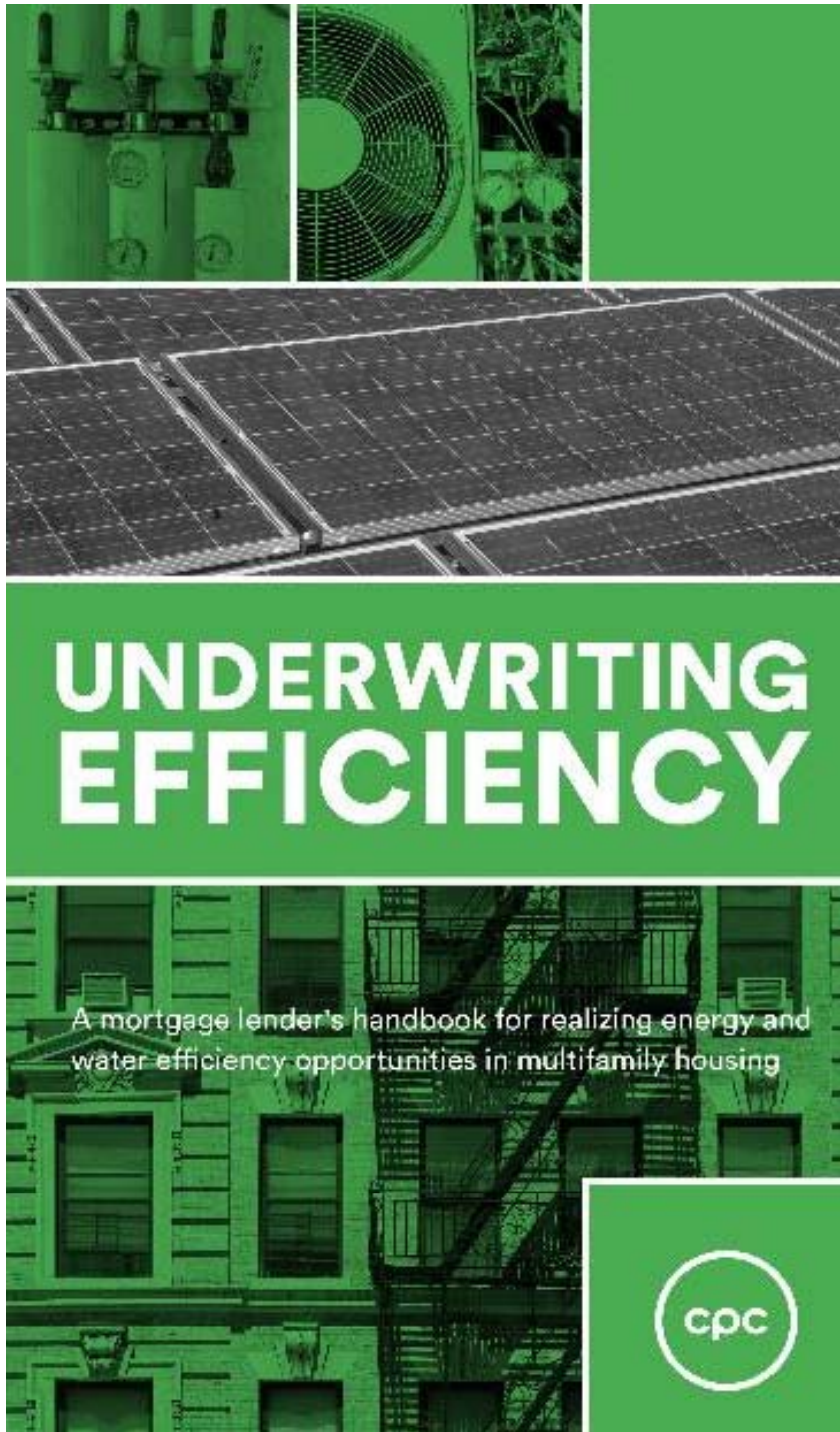


Sharing Best Practices

Underwriting Efficiency Handbook provides professionals with a resource to finance energy and water efficiency measures as part of a first mortgage

Overview:

- › Understanding Efficiency
 - Recorded 10/25
- › Building Efficiency
 - Today's Topic!
- › Integrating Efficiency
 - Webinar 11/29, 3pm EST





Special Guest: **BRIGHT POWER**

- Leading provider of energy services in NYC and nationally for multifamily buildings.
- Experience conducting over 1500 energy audits, collecting and analyzing data on over 30,000 mf buildings
- Leveraging existing analytical tools, hands-on experience with green multifamily projects and the EnergyScoreCards database to support ongoing sustainability efforts in the build environment



Building Efficiency

1. What does incorporating efficiency look like as part of capital investment?
2. What types of measures can be done today?
3. How can lenders include efficiency measures and updates as part of a natural funding cycle?

TYPE OF PROJECT

SCOPE OF WORK

INVESTMENT PLAN

BENEFITS

SIMPLE UPGRADE

Well-maintained properties seeking straight refinancing or modest updates to apartment units



Upgrades to common areas and apartments without substantial changes to major building systems



These low-cost improvements with a quick payback can be paid for with operating budget or reserves.



Simple Upgrade



Cost: \$500-\$1,500/unit

Save: Energy 5-15%; Water 5-20%



FINANCING

The relatively low cost of implementation means financing should not be a barrier for simple upgrades. Finance improvements from a property's operating budget, reserve accounts, or refinancing proceeds. Improvements can be completed when tenants turn over or included in routine replacement schedules.

SAMPLE SCOPE

- Low-flow water fixtures
- LED lighting and sensors
- Temperature controls and thermostats
- Boiler tune-up
- Weather-stripping
- Domestic hot water (DHW) pipe insulation
- Leak repair
- Common area air sealing



Moderate Renovation



Cost: \$1,000-\$8,000/unit

Save: Energy 10-40%; Water 15-40%



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. Depending on the loan product, consider providing additional financial incentives to encourage efficiency, like a lower interest rate.

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

Substantial Improvements



Cost: \$5,000-\$20,000/unit

Save: Energy 20-75%; Water 30-75%



FINANCING

At this level of investment, a construction loan will most likely be needed to finance the work. Mortgage lenders can still incentivize efficiency improvements by underwriting based on energy and water savings for a permanent loan. Depending on the loan product, offer additional financial incentives, like a lower interest rate, to encourage efficiency measures.

SAMPLE SCOPE

- Whole-building insulation
- Air sealing
- Heating system replacement and overhaul
- Window replacement
- Solar photovoltaics
- Combined heat and power (CHP)
- Energy management systems



Moderate Renovation

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



Moderate Renovation

CONSIDER THIS

- 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.
- Roof insulation should have a minimum insulation value of R-38.
- **And many more helpful tips are available in the handbook!**



CASE STUDY

Building Profile

1920s Walk-Up Rental Building
35 Apartments, 34,600 Gross Square Feet

Loan Type: Construction and Permanent Loan
Loan Offering: \$1.4 Million

Work Scope

New boiler, controls, radiator valves, pipe insulation, separate DHW heater, new roof and insulation, low-e coated windows, upgraded lighting and sensors, low-flow fixtures, ENERGY STAR appliances



Historical Income
(NOI)
\$132,734



Income with Energy
Savings
(Adjusted NOI)
\$151,144



Additional Available
Loan Proceeds
\$194,174

Efficiency Measure Checklist

SIMPLE UPGRADE

Measure	Property Type	Non-Energy Benefits	Savings
☐ Install Programmable Thermostats	Any	   	3%
☐ Install Low-Flow Sink Aerators	Any	   	3%
☐ Install Low-Flow Showerheads	Any	  	4%
☐ Air-Seal Common Areas	Any	    	2%
☐ Upgrade Common Area Lighting	Any	    	4%
☐ Upgrade Apartment Lighting	Any	  	2%
☐ Install Exhaust Fan Timers	Any	  	1%
☐ Repair Heating System Leaks	Central Boiler Heat	    	2%
☐ Insulate Heating Pipes	Central Boiler Heat	    	1%
☐ Tune Up Heating System	Central Boiler Heat	    	2%
☐ Insulate DHW Pipes and Tank	Central DHW	    	1%
☐ Install DHW Controls	Central DHW	    	2%
☐ Insulate Condensate Tank	Steam Heat	  	1%
☐ Install or Upgrade Master Venting	Steam Heat	    	3%
☐ Replace or Repair Steam Traps	Steam Heat	    	3%

MODERATE RENOVATION

☐ 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%



Underwriting Efficiency

Energy & Water Benchmarking

BACK-OF-THE-ENVELOPE BENCHMARKS ⁴

Buildings with expenses or consumption above the following benchmarks may be wasting energy, water, and money. Use these benchmarks to ballpark building efficiency.

Northeast U.S.*

Building Consumption

- Water: 75 gallons/bedroom/day
- Apartment Electricity: 350 kWh/apt./mo.
- Common Area Electricity: 1 kWh/sq.ft./yr.
- Gas: 0.75 therms/sq.ft./yr.

Building Spending

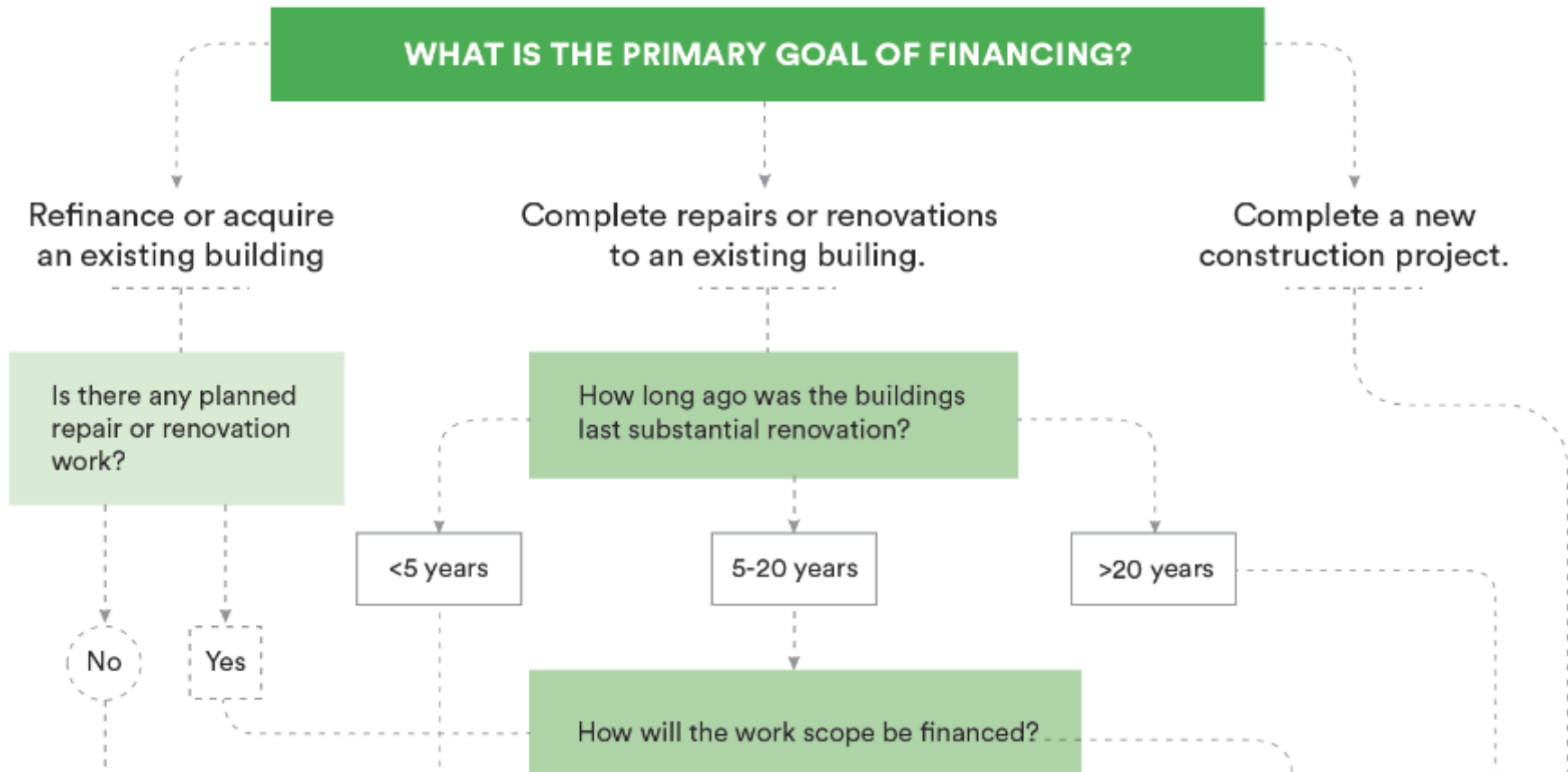
- Water: \$1.25/bedroom/day
- Apartment Electricity: \$75/apt./mo.
- Common Area Electricity: \$0.25/sq.ft./yr.
- Gas: \$0.50/sq.ft./yr.

*Northeast U.S. benchmarks will help evaluate efficiency for a building of any size but are based on estimates for a 65,000 sq.ft., 75-unit, post-war building with central heat and hot water, five floors, and 100 bedrooms.



Underwriting Efficiency

2
0



Next webinars in the “Underwriting Efficiency” series

- Integrating Efficiency
 - Webinar 11/29, 3pm EST

Contact us:

Yerina Mugica
CDFI Clean Energy in Affordable Housing
Network

Ymugica@nrdc.org

Elizabeth Kelly
Community Preservation Corporation

Ekelly@communitycp.com

Jon Braman
Bright Power
jbraman@brightpower.com

