



Stewards of Affordable Housing for the Future

Benefits Beyond Energy and Water

Energy efficiency and water efficiency improvements in multifamily housing can yield significant benefits beyond energy and water cost savings. In addition to increasing the property value and improving occupancy levels, these benefits, often referred to as Non-Energy Benefits, may include:

- Reduced Operation & Maintenance Requirements
- Enhanced Building Durability
- Better Indoor Air Quality
- Increased Comfort for Staff and Tenants
- Noise Reduction
- Improved Safety

Benefits vary based upon the specific type of improvements being made. Take this information into consideration when reviewing your options in the upgrade package and results the Tool has provided.

Measure Type	Reduced Operation & Maintenance	Enhanced Building Durability	Air Quality	Increased Comfort	Noise Reduction	Improved Safety
HVAC	✓	✓	✓	✓	✓	✓
Domestic Hot Water	✓		✓			✓
Clothes Washers	✓				✓	
Appliances	✓				✓	
Lighting	✓			✓		✓
Air Sealing		✓	✓	✓	✓	
Duct Sealing			✓	✓	✓	
Water	✓					

Non-Energy Benefits resulting from energy and water efficiency can flow to building owners, tenants, the greater community, and utilities. For further information on Non-Energy Benefits, please refer to the link below:

<http://www.sahfnet.org/ezretrofit.html>

BENEFITS TO STAKEHOLDERS

OWNER

One of the key benefits to owners is reduced operations and maintenance (O&M) costs. Maintenance staff have a wide range of responsibilities, and freeing up their time helps serve other property needs. Enhanced building durability and energy performance also lead to increased property value. Better performing systems also require less third party maintenance and lower costs on that front. Additionally, improved tenant satisfaction can be a significant benefit to owners, as they can lead to decreased vacancy rates and reduced turnover costs. Lowering vacancy rates can have a significant impact on a building's operating cost. In one New York caseⁱ, rental vacancy losses as a percentage of potential rent for a property post-retrofit were 8.2% compared to national average of 11%. This increases cash flow to the owner for additional programs, services, or building improvements or other reserves. In the affordable housing sector, some property owners may have lending agreement that require a minimum occupancy rate, necessitating that vacancy rates remain low.

TENANT

Building tenants can benefit greatly from lower utility bills, increasing their financial security and capacity. Tenants can also experience improved health, safety, and comfort. Increasing tenant comfort can reduce the use of candles or other

cooking elements as heating mechanisms that can lead to fires. Improving tenant satisfaction also makes tenants more likely to renew their lease. In the same New York case, a majority of tenants living in a property that underwent energy efficiency improvements stated their units stayed cool inside when hot outside (66.7%) and warm when cold outside (80.8%). Eighty-nine percent (89%) stated they would ask about energy efficiency when moving to a new building and 70% stated they were very likely to renew their lease.

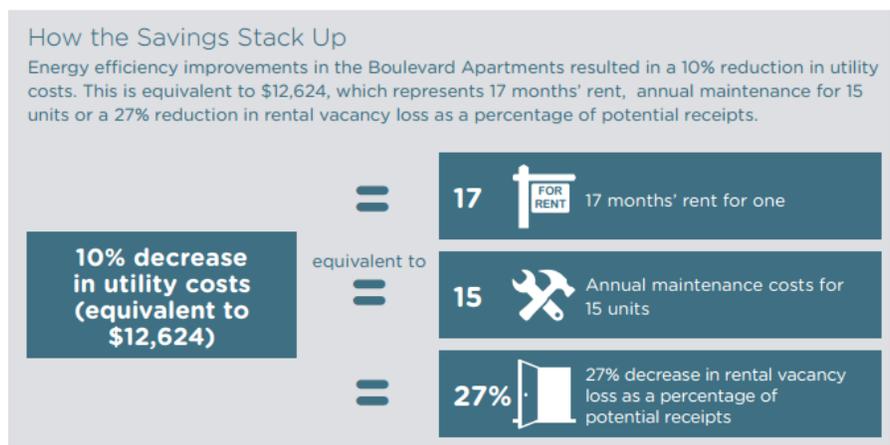
COMMUNITY

The public at large also derive benefits resulting from energy efficiency improvements. Reduced energy costs have a positive impact on local economic activity. Less money spent on utilities is more likely to be spent on good and services within the local economy. Additionally, any reduced consumption in energy results in less pollution, less water use, and improved air quality.

UTILITIES

Finally, utility companies benefit from energy efficiency improvements through fewer shutoffs, reconnects, customer calls, and debt collection actions. Another benefit to the utility is a reduced possibility of a power outage due to demand.

It's a win-win for all!



BENEFITS BY MEASURE TYPE

As outlined in the table on page 1, each measure type is associated with a set of Non-Energy Benefits. While the benefits of any measure type depend on the particular measure installed, this section provides additional detail on the benefits that can be associated with an upgrade to that measure category.

HVAC



- Reduce unnecessary noise
- Control humidity (excessive humidity can lead to asthma triggers, mold, durability issues, and comfort problems)
- Provide adequate fresh air
- Reduce unsafe conditions, such as carbon monoxide or other pollutants associated with combustion

Domestic Hot Water



- Reduce unsafe conditions, such as producing carbon monoxide or other pollutants associated with combustion
- Decrease leaks at or near the equipment that can result in water damage
- Reduce water distribution concerns, such as the use of lead pipes, water leaks in the distribution system, and excessive condensation on pipes

Clothes Washers



- Use up to 50% less water
- More efficient spin cycles, reducing the amount of time to dry the clothes and reducing the amount of energy needed to dry them
- Faster wash cycles also cause less wear and tear on clothes, increasing the clothing's useful life
- Tenants may also find faster wash cycles more convenient

Appliances



- Reduce indoor noise pollution related to outdated and old equipment
- Increase water savings and reduce water waste (dishwashers)
- Improve end-user ease of use

Lighting



- Longer life-span than traditional lighting technologies, reducing maintenance requirements
- Ensuring that the building's common areas are well lit improves the sense of safety for tenants
- Consistent lighting throughout a space provides a more pleasant environment
- Lighting can also be added to stairwells or other areas where trip hazards may be present
- Enhance the ascetic quality of your building

Motors & Controls



- Controls reduce the amount of time a motor will need to run and increase the life of the components, reducing the costs to replace them over their life
- Reduce noise levels at the equipment itself, as well as noise that may enter into common areas or tenant areas via the duct system
- Mitigate problems associated with poorly designed and installed ducts (e.g., excessive static pressure) and distribute conditioned air more evenly throughout the building

Air Sealing



- Improve comfort by reducing drafts and moisture problems
- Minimize noise from the outside
- Improve indoor air quality
- Reduce the heating/cooling loads in the building
- Reduce the amount of warm or cool air escaping the building
- Block pests from entering the building
- Reduce the amount of humid air entering the building's wall and attic cavities, thereby lowering the risk of condensation and mold
- Reduce or eliminate the formation of ice dams

Duct Sealing



- Properly sealed and insulated ducts improve the flow and temperature of the air cycling through the system, improving thermal comfort for occupants
- Reduce moisture or mold damage in the spaces ducts occupy
- Prevent the distribution of odors and air pollutants (e.g., insulation, dust, mold, pest droppings) throughout the building, thereby improving indoor air quality

Water Conservation & Water Fixtures



- Reduce water consumption
- Reduce energy consumption, as energy is used to heat and pump water
- Preserve public water resources and reduce demand on the community's sewer infrastructure

References

- Elevate Energy. (January, 2013). *Non-Energy Benefits of Energy Efficiency Building Improvements*.
- Rachel Cluett and Jennifer Amann. (June, 2015). *Multiple Benefits of Multifamily Energy Efficiency for Cost-Effectiveness Screening*
- Elevate Energy. (January, 2014). *Preserving Affordable Multifamily Housing through Energy Efficiency*

ⁱ "Preserving Affordable Multifamily Housing through Energy Efficiency", Elevate Energy.

ⁱⁱ "Non-Energy Benefits of Energy Efficiency Building Improvements," Elevate Energy.