

CDA HOUSING ENERGY PERFORMANCE AND IMPROVEMENTS

HISTORY

The CDA has long recognized the value of addressing energy improvements to reduce operating costs. Installing additional insulation, replacing single pane windows with thermal pane units, and the purchase of energy efficient appliances has taken place over the past 30 years, especially when funding was available. Many of the improvements that were done were based on a payback period of several years. Projects that remain have a longer payback period or are now becoming more feasible as the technology improves, reducing the payback periods.

In 2005 MGE did a benchmark study of 80 multifamily buildings in the Madison area. The buildings were selected to create an accurate representation of multi-family building types, and ages, served by MG&E. Two CDA buildings, Bjarnes Romnes Apartments and Brittingham Apartments were selected to be included in this study. These two buildings had the lowest energy cost per sq ft of all buildings in the study.

CURRENT PERFORMANCE of CDA BUILDINGS

The Energy Star rating system for buildings is based on an assessment of similar building types at a national level. A score of 75 or above qualifies as an “Energy Star” building.

	Gas Use 2014 to 2015	Elec. Use 2014 to 2015	% Cost Reduction	2014 daily utility Cost	2015 daily utility Cost	Per Day Cost Reduction	Cost avoidance per year	Current ENERGY STAR® rating
Karabis Apts.	-16.30%	-4.40%	-13.60%	\$76.07	\$65.68	\$10.39	\$3,792.35	58
Parkside Elderly Apts.	-2.70%	1.10%	-6.80%	\$188.31	\$175.38	\$12.93	\$4,719.45	84
Tenney Park Apts.	-12.10%	-5.30%	-16.90%	\$102.45	\$85.09	\$17.36	\$6,336.40	75
Bjarnes Romnes Apts.	-19.80%	-1.10%	-13.80%	\$364.58	\$315.15	\$49.43	\$18,041.95	92
Gay Braxton Apts.	-11.60%	-5.70%	-24.50%	\$123.49	\$93.20	\$30.29	\$11,055.85	77
Brittingham Apts.	-11.40%	0.00%	-34.80%	\$412.63	\$359.24	\$53.39	\$19,487.35	71

13.7%	\$1,267.53	\$1,093.74	\$173.79	\$63,433.35
6 properties above - combined				

2014 to 2015 energy cost reduction comparison	
CDA - Housing	-13.70%
City of Madison - All Buildings	-1.30%

All data taken from City of Madison "Facility & Energy Management Leadership" website.

ONGOING ENERGY SAVINGS MEASURES

As furnaces come due for replacement, we are replacing all with high-efficiency condensing units. In most cases the new units produce the same quantity of heat with about 25% less gas use. We are also replacing our direct-fired water heaters with indirect fired units where high efficiency boilers have been installed. This creates hot water with a savings of about 35%. Since 2005 all replacement appliances purchased carry the Energy Star certification. In 2008 we replaced all common-area incandescent bulbs with compact fluorescents, and began a program of replacing all incandescent bulbs in apartments as they became vacant. Halogen lighting in CDA owned parking lots has been replaced with High Intensity Discharge (HID) lighting. Halogen technology creates about 17 lumens per watt whereas HID lighting creates light at approximately 75 lumens per watt. That is 4.4 times the lighting for the same energy cost.

In 2010 we replaced all windows, in our 3-7 projects, with Energy Star rated units. When CDA-Housing eliminated the laundry equipment lease arrangement, we replaced electric dryers, wherever possible, with natural gas fired units. Natural gas heats at about ½ the cost of using electricity. Set-back thermostats have been added to all conditioned common area spaces. Heating boilers have been fitted with Outside Air temperature re-set controls. These automatically turn the boiler water temperature down as outside temperature go up. When outside temperatures reach a certain level the boilers are turned “off”.

Now, as LED lighting has become a cost-effective lighting alternative, we are replacing our existing fluorescent with LED lamps giving equivalent light at a much lower operating cost. A recent re-lamping of the Romnes hallway fixtures has a 3.3 month payback period and will save CDA Housing \$10,000.00 to \$11,000.00 per year.

FUTURE

New technologies and techniques seem to come along regularly. We are committed to employing whatever we can to save energy where it is cost effective, safe and maintains a high quality of life for our clients.