



Controls Installation Energy Savings Report

August 4, 2006

Submitted by:

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One Year ROI on Apartment Building Controls Upgrade

“Last winter we replaced all the old mechanical thermostats at New Falls Apartments with digital ones that allow us to limit the high and low temperatures. Our summer intern has just completed some analysis and found that this investment paid off in just one year. We’d now like to look for other opportunities to implement this before next winter.”

“At New Falls, each of the 60 apartments has a self-contained heating and cooling system. In the past, residents set whatever temperature they wanted – some apartments were kept in the 80’s. The new thermostats limited the range to 60 – 72 degrees for heating, and 70 – 99 for cooling. Elderly units were given a few more degrees of heat. Still, we didn’t get any complaints.”

“Our analysis looked only at gas consumption because that is paid by the property. The result is that we saved \$1900 on gas in just the first winter. That does not even include a savings on wear of the machines, or on the electricity for common-area machines.”

“We are looking for opportunities to expand this program. Although we didn’t measure electricity savings during the cooling months, I’m sure those savings are equally large.”

The digital thermostat is an ICM #2010 and was provided by Jeff Hurwitz at Interstate Controls.

New Falls Apartments
Newton, MA
Thermostat Savings

Years Surveyed: 2002-2006

Months Surveyed: January, February, March

Heating Degree Days

	January	February	March	Total	Days	Average per Day
2002	969	886	831	2686	90	29.84
2003	1372	1157	917	3446	90	38.29
2004	1444	1011	863	3318	91	36.46
2005	1265	1012	1017	3294	90	36.6
2006	972	*1016.5	*907	2900	90	32.17

*Information not yet available so the #s are averages

Heating Therms Used

	January	February	March	Amt. Used Heating	Days	Average per Day
2002	8088	8630	6638	19128.25	93	205.68
2003	8733	10109	9106	23720.25	91	260.66
2004	7302	11045	7728	21847.25	90	242.75
2005	7955	10715	8455	22897.25	91	251.61
2006	6978	8104	6959	17813.25	90	197.93

→**Amt. Used Heating** = Total Therms Used – Average Water Heating Therms (1409.25)

Therms Used Per Heating Degree

	Therms/Day	Heating Degrees/Day	Therms Used per Heating Degree
2002	205.68	29.84	6.89
2003	260.66	38.29	6.81
2004	242.75	36.46	6.66
2005	251.61	36.6	6.87
2006	197.93	32.17	6.15

Calculation Methods:

Total Heating Degrees 2002-2006: 15,643.5
Average Heating Degrees Per Year: 3,128.7
Average Therms Used Per Heating Degree 2002-2005: 6.807
Therms Used Per Heating Degree 2006: 6.15
Therm Price June 2006: \$0.91630

Old Thermostats 2002-2005 Average 3-Month Cost:

$3,128.7 \times 6.807 = 21,297.06$ Therms

$\rightarrow \$0.91630 \times 21,297.06 = \mathbf{\$19,514.50}$

New Thermostats 2006 3-Month Cost:

$3,128.7 \times 6.15 = 19,241.51$ Therms

$\rightarrow \$0.91630 \times 19,241.51 = \mathbf{\$17,630.99}$

Total Therms Saved: $21,297.06 - 19,241.51 = \mathbf{2,055.55}$ Therms

Total Savings: $\$19,514.50 - \$17,630.99 = \mathbf{\$1,883.51}$