



70 Peach Hill Court
Ramsey, NJ 07446
201-934-0044
Fax 201-934-5176
tsinacore@sdmmetro.com

July 17, 2010

Amy Coughlin
Hudson Manor
Hudson Manor
Freehold, NJ 07728

Dear Amy:

This is our report on the energy monitoring and lighting survey we performed at Hudson Manor, Freehold, NJ from July 12 thru July 19, 2010.

The purpose of this study was to determine the energy consumption of the lighting circuits serving floors 4 and 5 and to determine the difference. Spot measurements were also performed of lighting levels at typical locations on both floors to document lighting output performance.

The 5th floor was recently retrofitted using 44 Global Marketing Lighting LLC, LED Retro8(c) 4' 12 watt lamps. The 4th floor is identical to the remaining common area floors and has 44 T8 32 watt fluorescent lamps installed. The floors being studied and the common area lighting of all floors operate full time (24 x 7). The 4th and 5th floor lighting circuits were confirmed to be fed from the 1st floor lighting panel by physically switching the circuits off/on. The lighting circuits studied were also confirmed to operate only the lights being studied and that each circuit has the same number of fixtures.

We installed a Dranetz Model 4300 Power Quality Analyzer to monitor each of the 120 volt lighting circuits for the period between Monday, July 12, 2010 to Monday, July 19, 2010. The instrument recorded the phase-to-neutral voltage, phase current, and active power (kW) every 15 minutes, and also measured the integrated energy usage (kWh) over the entire recording period. Dranetz-BMI Model TR2500 current transformers were used. For the metering

timeplots attached, Channel A represents fifth floor data and Channel B represents fourth floor data.

Light Level Measurements

All light levels were measured at 5' above the finished floor with a Digital Light Meter.

The 5th floor has LED Retro8© lights. On the fifth floor directly under a light we measured 73 foot candles. Moving down the hall in between the first and second lights, we measured 4.8 foot candles. Going further down the hall to the second light, we measured 69 foot candles. Halfway down from that light we measured 4.4 foot candles.

The 4th floor has fluorescent lights. On the fourth floor directly under the light, we measured 34 foot candles. Moving down the hall in between the first and second lights, we measured 4.4 foot candles. Going further down the hall to the second light, we measured 44 foot candles. Halfway down from that light we measured 5.6 foot candles.

The LED lighting was significantly better than the fluorescent lighting.

Energy Usage Measurements

The 5th floor lighting circuit consumed 23.13 kWh and the 4th floor lighting circuit consumed 48.98 kWh over the seven day recording period.

Based on an estimate of \$0.15 per kilowatt, the cost for the 5th floor would be \$3.47 per week. At 52 weeks, the cost would be \$180.44 per year for the 5th floor lighting.

Based on an estimate of \$0.15 per kilowatt, the cost for the 4th floor would be \$7.35 per week. At 52 weeks, the cost would be \$382.04 per year for the 4th floor lighting.

Note that this does not take into consideration any savings that will result from the reduced demand charges, reduced maintenance costs or the reduced heat load (LED lights run cool) etc. This is purely an energy savings cost reduction report.

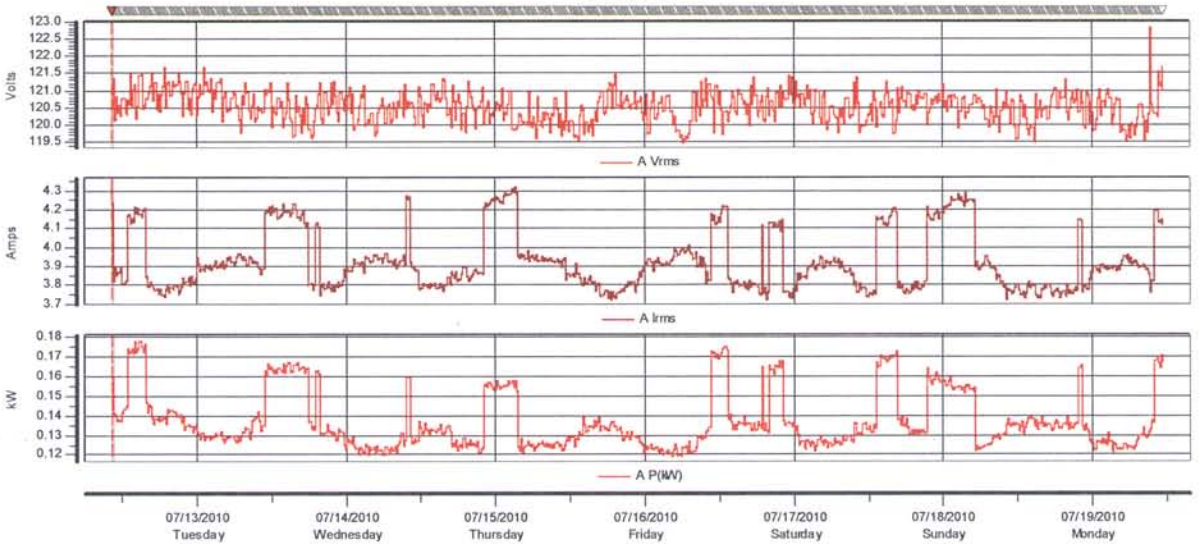
Below you will find graphical images of the voltage, current kW and kWh for the 4th and 5th floors. Channel A is 5th floor data, Channel B is 4th floor data.

Thank you very much,

Tony Sinacore
Applications Engineer

Voltage current and kW data for 5th floor

Timeplot



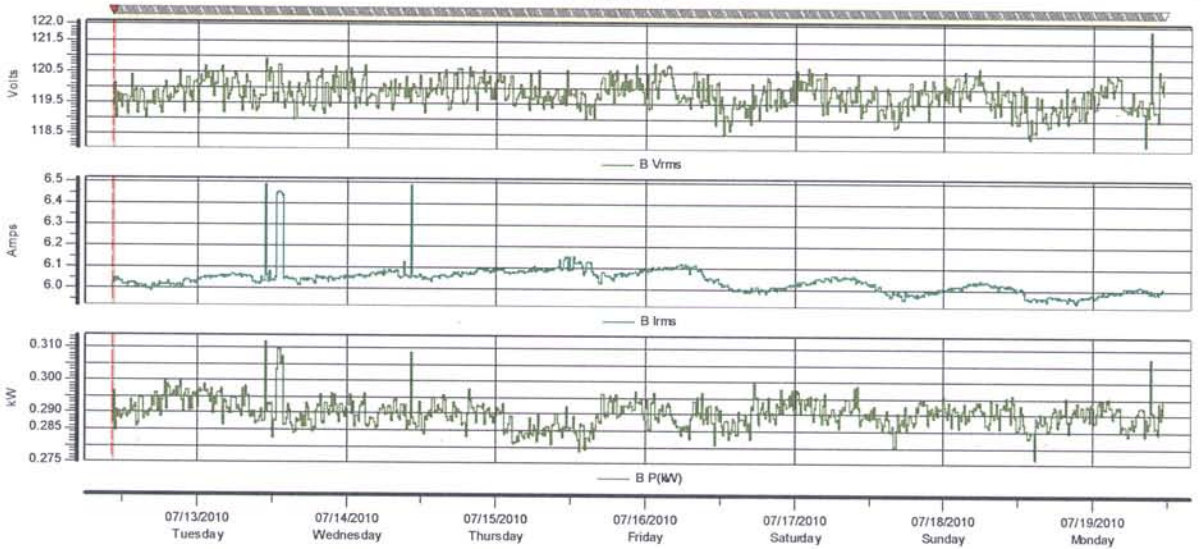
Event #1 at 07/12/2010 10:19:01.000
Monitoring on

Insert your text here...

	Min	Max	Avg
AVrms	119.5	122.8	120.5
AIrms	3.727	4.334	3.926
AP(kW)	0.1196	0.1781	0.1373

Voltage current and kW data for 4th floor

Timeplot



Event #1 at 07/12/2010 10:19:01.000

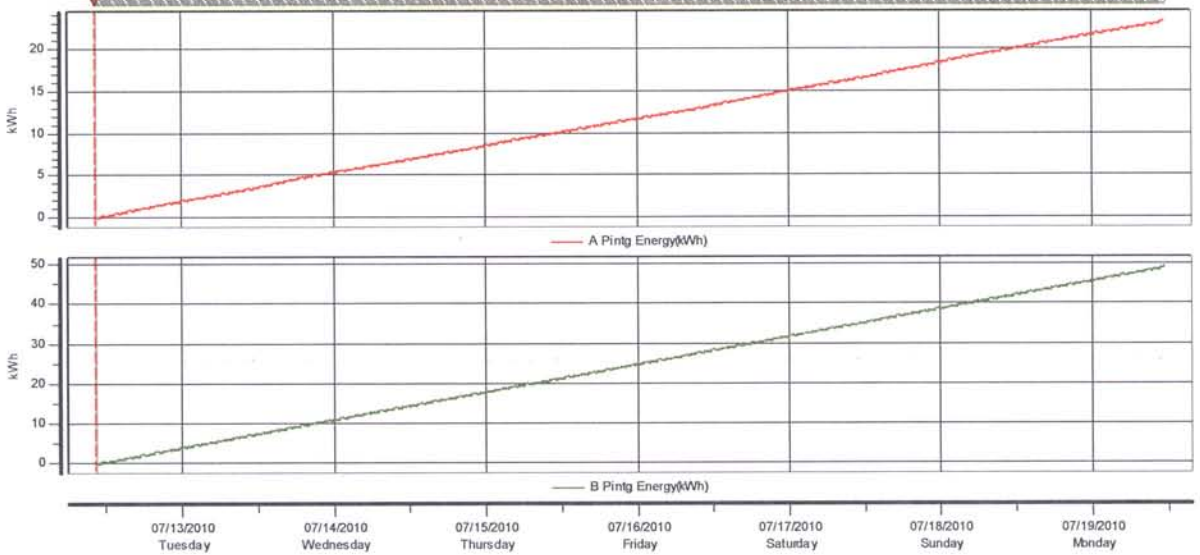
Monitoring on

Insert your text here...

	<i>Min</i>	<i>Max</i>	<i>Avg</i>
<i>BVrms</i>	118.2	121.9	119.8
<i>BIrms</i>	5.947	6.489	6.045
<i>BP(kW)</i>	0.2768	0.3117	0.2904

kWh Energy Consumption for Channell A (5th floor) and Channell B (4th floor)

Timeplot



Event #1 at 07/12/2010 10:19:01.000
Monitoring on

Insert y our text here...

	Min	Max	Avg
APintg Energy(kWh)	0.03838	23.13	11.64
BPintg Energy(kWh)	0.07205	48.98	24.56