**Project Name: Bernie Pat Bonnie Lounge Hall Retrofit**

**Project Completion Date:** 1/12/11

**Project Description:** The project includes replacement of the light fixtures currently installed in the Bernie Pat Bonnie Lounges.

Project Costs:

***Material: $112 per fixture x 135 fixtures = $15,120***

***Labor: $28.50 per fixture x 135 fixtures = $3,847.50***

***Total Estimated Cost = $18,967.50***

Actual Costs: ***$16,762.15
Rebates: $4410***

***Total Cost = $12,537***

**Please detail the cost savings here (include where and how data was obtained):**

*The following data was previous maintenance records, based on product data, utility charge outs at Saint John’s:*

Energy Savings:

Wattages of old vs. new fixtures are 39 watts and 150 watts, respectively, resulting in 111 watts saved in each of the 126 fixtures. This results in a savings of 13.986 kilowatts for each hour that all fixtures are in operation. The lights in the Pat 1 lounge have a meter on them which gives us the numbers of hours in use. However, a number of the dorms were used as lounges making quantifications difficult during the FY12 year. On average the usage will result in 28853.12 kWh of energy and $**2019.71** annually.

Bulb replacement Savings:

Old Bulbs last 1500 hours and cost $39.00 each; the new bulbs last 6500 and cost 24. Using 2063 hours per year of usage and the number of replacements required equates to a savings of $**5779.20** per year.

* Using current hour figures the new lamps should last 3.15 years (6500/2063), while the old lamps will last 0.73 years (1500/2063) which means they must be replaced 4.32 times during a 3.15 year period.
* The cost of the new lamps in a 3.15 year period is 126 (number of lamps)\*24 (cost of lamp)\*1 (number of replacements in 3.15 year period)=3024. Divided by 3.15 equates to $960 per year.
* The cost of the old lamps during the same period is 126 \* 39 (cost of old lamps) \* 4.32 (number of replacements during 3.15 year period)=21,228.5. Divided by 3.15 years equates to 6739.20.
* The difference between the two costs is 5779.20 (annual savings for switching lamps).

28,853.12 (KWh) per year = $2019.71, based on a cost of $0.07/KWh.

 A summary of cost savings is included below:

Estimated Energy Savings per Year: $2019

Estimated Material Savings per Year (average over 3 years): $5779.20

Estimated One Time Rebate from Xcel Energy: $4410

Estimated Payback Period (including rebate): ~1.75 years

**How is this project sustainable:**

Changing the light fixtures in the lounges would result in an annual energy savings of 28,853 kilowatts. The environmental impact of this savings is listed below:

CO2 Reduction: 18.61 Tons/Yr

Dollar savings: $7,798.92

In addition it saves time for custodial which already has a limited amount of time.

**Contact Information**

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