

## **Conclusion**

### **Final Budget/Energy Analysis**

Below is a table which consist of the totals in budget increase and annual energy savings (cost, kWh, and lbs of CO<sub>2</sub>). The reason there is a row which details the totals without solar panels is because I believe that the initial cost and payback period of the solar panels would not be favorable for this particular owner. Without the solar panels the annual savings is 37% less, but the initial cost is 94% cheaper.

<b>Analysis</b>	<b>Initial Budget Increase</b>	<b>Energy Savings (kWh/year)</b>	<b>Energy Savings (\$/year)</b>	<b>Energy Savings (lbs of CO<sub>2</sub>/year)</b>
Solyndra Solar Panels	\$394,041	118,886 kWh	\$15,455	170,007 lbs of CO <sub>2</sub>
6" SIP Panels	\$14,690	111,633 kWh	\$14,512	159,635 lbs of CO <sub>2</sub>
Motion Sensor Nightlight Switch	\$980	16,993 kWh	\$2,210	24,300 lbs of CO <sub>2</sub>
Hallway Occupancy Sensor	\$1,014	7,446 kWh	\$968	10,648 lbs of CO <sub>2</sub>
Motion Sensor PTAC	\$8,291	68,600 kWh	\$8,918	98,098 lbs of CO <sub>2</sub>
<b>Totals w/o Solar Panels</b>	<b>\$24,975</b>	<b>204,672 kWh</b>	<b>\$26,608</b>	<b>292,681 lbs of CO<sub>2</sub></b>
<b>Totals</b>	<b>\$419,016</b>	<b>323,558 kWh</b>	<b>\$42,063</b>	<b>462,688 lbs of CO<sub>2</sub></b>

### **Final Payback Period**

The final payback period if the owner were to implement all of the analysis would be approximately 10 years. If the owner were to opt out of the solar panel installation the payback period would be less than 1 year. In my opinion the solar panels are not worth it for many reasons. The first reason is that the initial budget will increase approximately 10% from the solar panels alone. The second reason is that this installation can occur any time after project completion and with the decrease in solar panel cost and increase in solar panel efficiency every year with new technologies, the owner would benefit more from waiting a few years before installation.

## **Final Schedule Analysis**

The original finish date for this project was April 16, 2010 the new finish date is April 7, 2010. The only analysis that positively affected the schedule was the implementation of SIP panels. With its prefabricated panels, easy installation, and all in one sheathing, wall, and insulation, we saved 9 days total on the schedule. The solar panels were estimated to take about 7 days to install, but because they can be installed concurrently with the tasks that are involved after the roofing is placed, it does not affect the overall finish date. The BAS systems and wireless controls did not reduce the amount of needed conduit and wiring like I had hoped. The wireless system must still be connected to wires in order to gain electricity. An upgraded schedule can be found in Appendix E Figure 1 at the back of this assignment. The tasks highlighted in yellow represent the major changes to the schedule.